

**Department of Energy Programmatic
Spent Nuclear Fuel Management
and
Idaho National Engineering Laboratory
Environmental Restoration and
Waste Management Programs
Final Environmental Impact Statement**

**Volume 3
Part A**



April 1995

**U.S. Department of Energy
Office of Environmental Management
Idaho Operations Office**

COVER SHEET

RESPONSIBLE AGENCIES: Lead Federal Agency: U.S. Department of Energy
Cooperating Federal Agency: U.S. Department of the Navy

TITLE: Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Final Environmental Impact Statement.

CONTACT: For further information on this Environmental Impact Statement call or contact:

DOE Idaho Operations Office
Bradley P. Bugger
Office of Communications
850 Energy Drive, MS 1214
Idaho Falls, ID 83403-3189
208-526-0833

For general information on the U.S. Department of Energy NEPA process call 1-800-472-2756 to leave a message or contact:

Carol Borgstrom, Director
Office of NEPA Policy and Assistance (EH-42)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585
202-586-4600

ABSTRACT: This document analyzes at a programmatic level the potential environmental consequences over the next 40 years of alternatives related to the transportation, receipt, processing, and storage of spent nuclear fuel under the responsibility of the U.S. Department of Energy. It also analyzes the site-specific consequences of the Idaho National Engineering Laboratory sitewide actions anticipated over the next 10 years for waste and spent nuclear fuel management and environmental restoration. For programmatic spent nuclear fuel management, this document analyzes alternatives of no action, decentralization, regionalization, centralization and the use of the plans that existed in 1992/1993 for the management of these materials. For the Idaho National Engineering Laboratory, this document analyzes alternatives of no action, ten-year plan, and minimum and maximum treatment, storage, and disposal of U.S. Department of Energy wastes.

VOLUME 3, PART A: CONTENTS

INTRODUCTION	ix
How DOE Considered Public Comments in the NEPA Process	x
Changes to the EIS Resulting from Public Comments	x
How to Use Volume 3 to Locate Responses	xii
How to find Reference Documents.	xiii
ACRONYMS	xv
COMMENT SUMMARIES AND RESPONSES	1-1
1. PREFERENCE FOR ALTERNATIVES	1-1
1.1 Specific Preferences	1-1
1.1.1 SNF management	1-1
1.1.1.1 Action Alternatives	1-1
1.1.1.2 Siting Alternatives	1-8
1.1.2 INEL ER&WM Programs	1-18
1.1.3 Others	1-21
1.2 General Preferences	1-21
1.2.1 SNF Management	1-22
1.2.1.1 Action Alternatives	1-23
1.2.1.2 Siting Alternatives	1-25
1.2.2 INEL ER&WM programs	1-31
1.2.3 Others	1-33
1.3 Miscellaneous	1-34
2. NEPA-RELATED COMMENTS	2-1
2.1 EIS Presentation and Distribution	2-1
2.2 Segmentation	2-13
2.3 Scope	2-15
2.3.1 Scoping Process and Hearings	2-25
2.4 Adequacy of the Draft EIS	2-28
2.5 Record of Decision	2-62
2.6 Out of Scope Issues	2-63
2.7 Hearings	2-71
2.8 Miscellaneous	2-76
3. POLICY	3-1
3.1 Mission	3-1
3.2 Authority and Responsibility	3-5
3.3 Credibility	3-6
3.4 Legal/Regulatory	3-9
3.4.1 Compliance with the Court Order	3-18

3.5	Government Policy	3-19
3.5.1	Not used	3-27
3.5.2	Not used	3-27
3.5.3	Reactor Programs/Nuclear Power	3-27
3.5.4	Energy Development	3-28
3.5.5	Recycling and Reprocessing	3-28
3.6	Foreign Research Reactor Return Policy	3-31
3.7	Equity and Environmental Justice	3-32
3.8	Miscellaneous	3-36
4.	PROPOSED ACTION AND ALTERNATIVES	4-1
4.1	Purpose and Need	4-1
4.2	Proposed Action	4-5
4.3	Alternatives Analyzed	4-6
4.3.1	Siting Alternatives	4-25
4.3.2	Action Alternatives	4-41
4.3.2.1	No Action	4-42
4.4	Preferred Alternative	4-45
4.4.1	Decision Process	4-47
4.5	Miscellaneous	4-49
5.	TECHNICAL ISSUES	5-1
5.1	Aesthetics and Scenic Resources	5-1
5.2	Air Quality	5-3
5.3	Cultural Resources	5-26
5.4	Biological Resources	5-31
5.5	Geology	5-41
5.5.1	Seismic Characteristics	5-45
5.6	Land Use	5-69
5.7	Utilities and Infrastructure	5-74
5.8	Water Resources	5-76
5.8.1	Groundwater	5-78
5.8.2	Surface Water	5-105
5.8.3	General	5-110
5.9	Cumulative Impacts	5-116
5.10	Safety and Health Effects	5-128
5.10.1	Worker	5-155
5.10.2	Public	5-160
5.11	Accidents/Releases	5-172
5.11.1	Operations	5-173
5.11.2	Transportation	5-179
5.11.3	General	5-182
5.11.3.1	Not used	5-204
5.11.3.2	Not used	5-204
5.11.3.3	Miscellaneous	5-204

5.12 Transportation Issues	5-204
5.12.1 Not used	5-211
5.12.2 Rail	5-211
5.12.3 Waterborne	5-212
5.12.4 Packaging	5-213
5.12.5 Routes	5-214
5.12.6 Regulations	5-215
5.12.7 Not used	5-217
5.12.7.1 Accidents	5-217
5.12.8 Need	5-219
5.12.8.1 Cost/Shell Game	5-220
5.13 Emergency Preparedness	5-221
5.13.1 Facilities	3-221
5.13.2 Transportation	5-223
5.13.3 Not used	5-225
5.13.4 Infrastructure/Coordination	5-225
5.14 Not used	5-226
5.15 Socioeconomics	5-226
5.16 Safeguards and Security	5-234
5.17 Monitoring	5-237
5.18 General Operations	5-238
5.18.1 Waste Management	5-240
5.18.2 SNF Management	5-246
5.18.3 Not used	5-246
5.18.4 Past Practices	5-246
5.18.5 Mitigation	5-248
5.19 Miscellaneous	5-248

END VOLUME 3, PART A CONTENTS

SEE PART B FOR CHAPTERS 6 THROUGH 9 AND APPENDICES A THROUGH C.

INTRODUCTION

DOE added Volume 3, Response to Public Comments, to the *Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs Environmental Impact Statement (EIS)* to fully address and respond to public comments on the Draft EIS. In addition, DOE considered public comments, along with other factors such as programmatic need, technical feasibility, and cost, in arriving at DOE's preferred alternatives. During the public comment period for the Draft EIS, more than 1,430 individuals, agencies, and organizations provided comments. This volume represents a broad spectrum of private citizens; businesses; local, state, and Federal officials; Native American Tribes; and public interest groups. Comments were received from all affected DOE and shipyard communities.

Volume 3 summarizes the comments on the EIS that DOE received during the public comment period, and provides responses to those comments. In addition, this volume includes discussions of how public comments influenced the identification of the preferred alternatives, the extent to which public comments led to changes to the EIS, and a description of how to find specific comment summaries and responses in this volume.

Responses to comments consist of two parts. The first summarizes the comment(s), and the second responds to the comment(s). Frequently, identical or similar comments were provided by more than one commentor; in such cases, DOE grouped the comments and prepared a single response for each group. Summarization of comments was also appropriate because of the large number of comments received.

In compliance with the provisions of the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations, public comments on the Draft EIS were assessed and considered both individually and collectively by DOE and the Navy. Some comments led to EIS modifications or explanations of why comments did not warrant further response. Most comments not requiring an EIS change resulted in a response to correct readers' misinterpretations, to explain or communicate government policy, to clarify the scope of the EIS, to explain the relationship of this EIS to other related NEPA documentation, to refer commentors to information in the EIS, to answer technical questions, or to further explain technical issues.

The Record of Decision will include the decisions made by the Secretary of Energy, who will consider public comments on the Draft EIS.

How DOE Considered Public Comments in the NEPA Process

As required in the CEQ regulations [40 CFR 1502.14(e)], the Final EIS identifies DOE's preferred alternatives. The preferred alternatives were identified based on consideration of environmental impacts, regulatory compliance, DOE and spent nuclear fuel (SNF) programmatic missions, Idaho National Engineering Laboratory (INEL) environmental restoration and waste management programs, public issues and concerns, national security and defense, cost, and DOE policy. Public input considered in DOE's identification of preferred alternatives included concerns, desires, and opinions regarding the activities addressed in the EIS, and expectations of DOE in making the decisions on complex-wide programmatic SNF management and SNF management, environmental restoration, and waste management programs at INEL.

Public input contributed to the development of performance factors, defined as desirable attributes or characteristics that measure the relative acceptability of alternatives, which were used to identify candidate preferred alternatives. The candidate preferred alternatives then were evaluated against technical and nontechnical sensitivities, including public perception of environmental impacts, indicated stakeholder preferences, implementation flexibility, regulatory risk, SNF processing potential, environmental justice, potential resistance to implementation, and fairness.

DOE's preferred alternative for SNF management reflects DOE and public consensus that SNF should be actively managed in preparation for ultimate disposition. DOE's preferred alternative for SNF management, environmental restoration, and waste management at INEL reflects DOE's goal and the public's desire to have those activities meet DOE's obligations under agreements negotiated or anticipated with the U.S. Environmental Protection Agency and the State of Idaho. The EIS, including its preferred alternatives, will be considered by the Secretary of Energy, along with other factors, to arrive at a decision to be documented in a formal Record of Decision.

Changes to the EIS Resulting From Public Comments

A major purpose of NEPA is to promote efforts that will prevent or eliminate damage to the environment by ensuring informed decisionmaking on major Federal actions significantly affecting the quality of the human environment. Consideration of public comments on the Draft EIS helps

ensure that the EIS is an adequate decisionmaking tool; accordingly, this EIS has been enhanced, as appropriate, in response to public comments. However, commentors raise specific issues and concerns, none of the comments identify new reasonable alternatives requiring assessment or result in a significant change in the analysis of potential environmental consequences.

Based on review of public comments, coupled with consultations held with commenting agencies, as well as state and tribal governments, the main EIS enhancements include the following.

Seismic and water resource discussions and analyses were reviewed, clarified, and enhanced for all alternative sites, and current data and analyses were added to Volumes 1 and 2, as appropriate. A discussion of potential accidents caused by a common initiator was added. The option of stabilizing some of DOE's SNF (specifically from N-Reactor) by processing it at available facilities overseas was added, thus enhancing processing options discussed in the EIS. DOE added to the EIS an analysis of barge transportation with respect to the option of shipping N-Reactor fuel to a point for overseas processing, as well as to support the potential transport of Brookhaven National Laboratory SNF to another site, as appropriate. In addition, DOE added an analysis of shipboard fires, primarily in response to comments related to receiving SNF containing uranium from foreign research reactors.

In Volume 2, DOE revised the air quality analysis to upgrade the information on existing baseline conditions. The analysis compared impacts of each alternative with Prevention of Significant Deterioration increment limits. Additionally, the Waste Experimental Reduction Facility project summary was enhanced and clarified. The EIS also was revised to reflect current projections of employment, including the projected downsizing of the INEL work force due to contractor consolidation.

In response to public comments, a brief summary of a separate cost evaluation of the various alternatives was added to the EIS, although the cost evaluation was performed independently of this EIS for additional purposes. The discussion about the options regarding management of Fort St. Vrain SNF currently stored in Colorado was expanded. As committed to in the Draft EIS, the evaluation and discussion of environmental justice was expanded in Volumes 1 and 2; this analysis is based on interim DOE guidance in the absence of DOE or interagency policy in this regard, and reflects limited public comments received about environmental justice. Consultation with commenting Native American Tribes is reflected in the environmental justice analysis, as well as in various sections of the EIS, as appropriate.

Other enhancements include a clarification that potential shipment of SNF containing uranium of U.S. origin from foreign research reactors consists of a bounding estimate of 22 metric tons of heavy metal. In addition, as a result of public comments, DOE enhanced Volume 1 to include a description that clarifies the relationship between other SNF-related DOE NEPA reviews and this EIS. In the same regard, the relationship between this EIS and the *Spent Fuel Vulnerability Assessment Action Plans* was clarified in the EIS. With regard to Naval SNF, enhancements to Appendix D (Naval Spent Nuclear Fuel Management) include providing additional information in the following areas: importance of Naval SNF examination, impacts of not refueling or defueling nuclear-powered vessels, the reasons why storage and processing Naval SNF in foreign facilities were not evaluated in detail, environmental justice considerations, the transition period required to implement Naval SNF alternatives, potential accident scenarios at Naval shipyards, and uncertainties in calculating potential environmental impacts.

Editorial changes were made to the EIS to correct errors, none of which was considered substantive, and to clarify discussions deemed by some commentors to be misleading.

How to Use Volume 3 to Locate Responses

Volume 3 is organized into topical sections, which are listed in the Table of Contents.

Volume 3 also contains three appendices to help readers locate specific comment summaries and responses. Appendix A is an alphabetical list of commentors' last names, organizations or agencies, showing for each the associated comment document number and response section number(s). For some entries, the word "Anonymous" or "Indeterminate" appears in the left column. Anonymous entries include comment documents with no names or organizations appearing anywhere in the document, or commentors at public hearings who wished to remain anonymous. "Indeterminate" reflects a name that was illegible due to the commentor's penmanship or poor quality of the comment document, or unidentifiable due to a poor recording from the toll-free telephone line.

Appendix B is a sequential numerical list of comment document numbers showing associated commentors and response section numbers. The comment document number is useful for cross-referencing. Complete (unsummarized) comment documents can be found in the reading rooms and information locations listed at the end of the Summary and in Volumes 1 and 2.

Appendix C is a correlation of response section numbers to comment document numbers.

A comment document can be a mailed letter, facsimile, oral or written testimony, exhibits or questions from a public hearing, or an comment given over the toll-free telephone line. Comment documents can, and often do, contain multiple individual comments, and each corresponding response might fall under a different response section.

To find a response to comment(s):

1. Turn to Appendix A and find your name (or organization or agency, if you stated that you represented one of these), and note the response section number(s) assigned to that comment document.
2. Turn to the Table of Contents under the heading Comment Summaries and Responses, where response section numbers are listed in numerical order, to find the page on which the response section number(s) that apply to your comment(s) appear.
3. Turn to the appropriate page(s) to find a response to a summary of your comment.

Use the same process to find another person's or organization's comments.

If your comment document contains more than one comment, repeat steps 2 and 3 for each comment because each response could fall under a different response section.

How to Find Reference Documents

Technical references and other supporting documentation cited in Volume 3 are available in the reading rooms and information locations listed at the end of the Summary and in Volumes 1 and 2. Readers can find the document of interest on the alphabetical list provided in the reading rooms and information locations.

ACRONYMS

ALARA	as low as reasonability achievable
CDC	Centers For Disease Control and Prevention
CEDE	committed effective dose equivalent
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
D&D	decontamination and decommissioning
DCGs	Derived Concentrations Guidelines
DOE-HQ	U.S. Department of Energy, Headquarters
DOE PEIS	U.S. Department of Energy Programmatic Environmental Impact Statement
DOT	U.S. Department of Transportation
EA	environmental assessment
EBR	Experimental Breeder Reactor
EDE	effective dose equivalent
EPA	U.S. Environmental Protection Agency
ER&WM	environmental restoration and waste management
ESRP	Eastern Snake River Plain
FEMA	Federal Emergency Management Agency
FFA/CO	Federal Facility Agreement and Consent Order
FONSI	finding of no significant impact
FRR	foreign research reactor
FRR EIS	EIS: <i>Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel</i>

ACRONYMS

HEPA	high efficiency particular air (filter)
HHS	U.S. Department of Health and Human Services
ICPP	Idaho Chemical Processing Plant
INEL	Idaho National Engineering Laboratory
MCLs	maximum contaminant levels
MTHM	metric tons of heavy metal
NEPA	National Environment Policy Act
NRC	U.S. Nuclear Regulatory commission
NTS	Nevada Test Site
NWPA	Nuclear Waste Policy Act
ORR	Oak Ridge Reservation
OSHA	Occupational Safety and Health Administration
PSD	prevention of significant deterioration
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RWMC	Radioactive Waste Management Complex
SDWA	Safe Drinking Water Act
SNF	spent nuclear fuel
SRS	Savannah River Site
TEDE	total effective dose equivalent
TRU	transuranic
UBC	Uniform Building Code
USGS	U. S. Geological Survey
VOCs	volatile organic compounds
WERF	Waste Experimental Reduction Facility
WINCO	Westinghouse Idaho Nuclear Company, Inc.
WIPP	Waste Isolation Pilot Plant

1. PREFERENCE FOR ALTERNATIVES

1.1 Specific Preferences

1.1.1 SNF Management

01.01.01 (002) SNF Management

COMMENT

Commentors prefer alternatives that do not result in foreign spent nuclear fuel being transported through or managed at a specific location, and cite potential catastrophic impacts from releases of radioactive material due to accidents.

RESPONSE

A decision regarding the policy to accept spent nuclear fuel (SNF) from foreign research reactors is being reached through a process based on a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft) (FRR EIS). However, the domestic transportation and management of such SNF, if it is returned to the United States, is included in this EIS to ensure that all potential impacts of SNF transportation are evaluated. See the response to comment 05.12.07.01 (001) regarding the potential for release of radioactive materials during postulated accidents.

1.1.1.1 Action Alternatives

01.01.01.01 (001) Action Alternatives

COMMENT

The commentor objects to the Port of Oakland being proposed as an entry and/or transfer point for foreign research reactor spent nuclear fuel.

RESPONSE

The Port of Oakland is considered in the EIS as a potential point of entry for foreign research reactor (FRR) SNF. However, the issue of selecting ports of entry for shipments of FRR SNF is not within the scope of this EIS. That issue is being analyzed in the FRR EIS. DOE will not make a final decision on the acceptance of FRR SNF until the FRR EIS and this EIS are completed.

01.01.01.01 (002) Action Alternatives

COMMENT

The commentor supports the Regionalization by fuel type alternative.

RESPONSE

Volume 1, section 3.1 identifies the preferred alternative for programmatic SNF management and the actions DOE would take to the extent required by this alternative. Research and development activities would be included. See also the response to comment 04.04 (008).

01.01.01.01 (004) Action Alternatives**COMMENT**

Commentors oppose the No Action alternative for one or more of the following reasons:

- High-level waste management under this alternative is unacceptable.
- Resources would be wasted.
- It is irresponsible and should be redefined as the choice that just meets existing commitments.
- It is unsafe.
- SNF would be difficult to manage.
- Some university research reactors would be forced to shut down without prompt removal of unneeded nuclear fuel.
- Not permitting shipment of SNF from university reactors will prevent decommissioning of reactors and force universities to incur significant expenses that could not be offset by revenues.
- K-basin wastes at the Hanford Site are not stabilized.
- The increased risk is considered unacceptable.

RESPONSE

Volume 1, section 3.1 of the EIS describes DOE's preferred alternative for SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at the Idaho National Engineering Laboratory (INEL). See the responses to comments 04.04 (008) and 04.04 (011).

01.01.01.01 (005) Action Alternatives**COMMENT**

Commentors oppose the Decentralization alternative or the Centralization alternative.

RESPONSE

Volume 1, section 3.1 describes the preferred alternative for SNF management. See the response to comment 04.04 (008).

01.01.01.01 (008) Action Alternatives

COMMENT

The commentor supports the No Action alternative and opposes the Centralization alternative.

RESPONSE

Volume 1, section 3.1 identifies the preferred alternative for programmatic SNF management and the actions that would be undertaken by DOE to the extent required by this alternative. Research and development activities would be included. See also the response to comment 04.04 (008).

01.01.01.01 (010) Action Alternatives

COMMENT

The commentor objects to bringing additional spent nuclear fuel to the Oak Ridge Reservation, where rainfall and percolation rates are perceived to be too high, and suggests a drier, western location instead.

RESPONSE

Analyses performed for this EIS and summarized in Volume 1, Chapter 5 and Appendix F, Part Three, section 5.8 indicate that the environmental consequences of the five SNF management alternatives would be small at any of the sites, including the Oak Ridge Reservation. Therefore, bringing additional SNF to this site is not likely to add to environmental or health hazards that may already exist.

01.01.01.01 (013) Action Alternatives

COMMENT

The commentor supports the No Action alternative, with the opinion that all other alternatives merely "move the problem around," placing it "out of sight, out of mind."

RESPONSE

Volume 1, section 1.1 of the EIS has a comprehensive discussion of the options available for managing SNF, including storage, stabilization, transportation, and preparation for final disposition. Specific technologies to accomplish these options are discussed in Volume 1, Appendix J. These options are incorporated to varying extends in all of the alternatives, as described in Volume 1, Chapters 3 and 5. The alternatives have definite purposes for relocating SNF, such as storing similar fuel types within a single secure facility. In this way, the alternatives attempt to balance transportation concerns with other worthy considerations, including nonproliferation, worker safety, and cost effectiveness. Methods for final disposition, such as burial, are outside the scope of this EIS.

01.01.01.01 (015) Action Alternatives**COMMENT**

Commentors state that transportation risks and the need to avoid such risks prior to final movement of spent nuclear fuel to a permanent storage site must be considered. Commentors also express a preference for a Decentralization alternative with no transportation, and/or allude to a "shell game" whereby unnecessary movements of spent nuclear fuel are being made.

RESPONSE

Transportation risks were analyzed for all the alternatives and no significant impacts were identified. DOE evaluated the alternatives not only from the standpoint of environmental impacts, but from the perspective of deciding on an appropriate programmatic strategy for managing DOE SNF until decisions are made regarding its ultimate disposition. Such decisions are anticipated within the next 40 years. This programmatic strategy must not only address currently identified vulnerabilities in the management of SNF, but ensure safe, environmentally sound, and cost-effective SNF management in the future. The role of transportation, and its costs and impacts, is a factor in making these decisions and a tool in implementing programmatic decisions. There have not been, nor will there be, unnecessary movements of SNF.

01.01.01.01 (019) Action Alternatives**COMMENT**

The commentor expresses a preference for the No Action alternative because DOE will be forced to evaluate the necessity for generating radioactive waste and minimize the waste streams to the lowest extent possible.

RESPONSE

In general, DOE has adopted a policy emphasizing waste minimization and avoidance, as discussed in Volume 2, Chapters 1 and 2 of the EIS. Most new radioactive waste will be created during unavoidable cleanup activities and decommissioning of contaminated facilities that no longer serve essential national missions. However, DOE does not officially consider SNF a waste material. Continuing or eliminating all sources of SNF is, therefore, not part of DOE's waste minimization objectives and is outside the scope of this EIS.

01.01.01.01 (022) Action Alternatives**COMMENT**

The commentor prefers an alternative that manages spent nuclear fuel at its current location or at the site of generation without polluting the environment, and states that if spent nuclear fuel must be transported for safety reasons, transportation should be minimized.

RESPONSE

Several alternatives in this EIS evaluate leaving all or most SNF where it is now stored or generated. In addition, other EIS alternatives were evaluated to consider providing and maintaining DOE's flexibility to safely, efficiently, and responsibly manage SNF until final disposition decisions can be made. General technologies for managing SNF are discussed in Volume I, section 1.1.3 and Appendix J of the EIS. Volume I, Figure 3-7 compares estimated shipments among all of the alternatives. The wide range of shipment numbers reflects DOE's desire to consider all realistic transportation possibilities and the related stakeholder concerns. See also the response to comment 04.04 (008).

01.01.01.01 (026) Action Alternatives**COMMENT**

The commentor states that radioactive wastes should remain at their current locations pending development of final solutions, and states that a nationwide EIS on a broad-based, solution-oriented waste policy needs to be prepared.

RESPONSE

DOE is preparing the *Waste Management Programmatic Environmental Impact Statement*, and public comments will be solicited on the waste policies to be addressed in that document.

01.01.01.01 (029) Action Alternatives**COMMENT**

Commentors favor the Decentralization alternative, a modified Decentralization alternative, or a hybrid including the Decentralization alternative because decentralization of spent nuclear fuel management requires generators to assume responsibility for their spent nuclear fuel and requires minimal transportation. Recommended modifications include Decentralization with limited exam for Navy fuel at the Idaho National Engineering Laboratory. Storage preferences include dry cask storage and canning of spent nuclear fuel over processing.

RESPONSE

Volume I, section 3.1 describes DOE's preferred alternative for SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL. See the responses to comments 04.04 (008) and 04.04 (011).

01.01.01.01 (033) Action Alternatives**COMMENT**

The commentor supports centralization or regionalization of existing nuclear fuel inventories.

RESPONSE

Volume 1, section 3.1 identifies the preferred alternative for programmatic SNF management and the actions that DOE would take to the extent required by this alternative. Research and development activities would be included.

01.01.01.01 (038) Action Alternatives**COMMENT**

The commentor prefers the Regionalization by fuel type alternative for handling Naval, research reactor, and some foreign research reactor spent nuclear fuel at Idaho National Engineering Laboratory, with the remainder going to the Savannah River Site and, for the INEL-specific recommendations, supports a mix of the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives that would be compatible with Regionalization by fuel type and the Navy's preferred alternative. In addition, the commentor suggests that reprocessing these materials at the Idaho Chemical Processing Plant be considered as an alternative in the EIS, and the debate on reprocessing should not be because of politics.

RESPONSE

Volume 1, Chapter 3, and Volume 2, Chapter 3 show the actions DOE would take to the extent required by this alternative. Activities related to SNF management, including processing and research and development, are covered. See also the response to comment 06.05 (001).

01.01.01.01 (039) Action Alternatives**COMMENT**

The commentor opposes the Centralization alternative because it would require extensive shipment to interim storage sites and to ultimate disposal sites.

RESPONSE

The commentor is correct in anticipating the need for further SNF shipments after a decision is made regarding ultimate disposition of DOE SNF in a permanent repository. However, assessment of the impacts of these shipments is outside the scope of this EIS. The scope of Volume 1 of this EIS is limited to storage and related transportation of DOE SNF until 2035. It may take that long to make and implement a decision on ultimate disposition of DOE SNF. Because space in a permanent repository may not be available for 40 years, DOE evaluated EIS a range of reasonable alternatives to safely manage DOE SNF in the interim.

1.01.01.01 (040) Action Alternatives

COMMENT

The commentor recommends that the three existing primarily spent nuclear fuel DOE locations for interim storage be maintained in the preferred alternative.

RESPONSE

The preferred alternative for programmatic SNF management is discussed in Volume 1, section 3.1.

01.01.01.01 (041) Action Alternatives

COMMENT

The commentor prefers the programmatic No Action alternative because the existing DOE spent nuclear fuel storage sites have vulnerabilities, as delineated in the *Spent Fuel Working Group Report*.

RESPONSE

The need to correct existing SNF storage vulnerabilities was a factor in determining the preferred alternative for programmatic SNF management, as described in Volume 1, section 3.1.

01.01.01.01 (042) Action Alternatives

COMMENT

The commentor supports the 1992/1993 Planning Basis alternative because of the urgency for resolving the Hanford K-basin problems, and because the alternative is less costly, less risky, and involves less transport than most other alternatives.

RESPONSE

The factors mentioned are covered in the preferred alternative for programmatic SNF management, which is described in Volume 1, Chapter 3.

01.01.01.01 (043) Action Alternatives

COMMENT

The commentor asserts that it is environmentally more attractive to manage spent nuclear fuel at the point of origin.

RESPONSE

Volume 1, section 3.1, and Volume 2, section 3.4 describe the preferred alternatives for SNF management. The impacts of all of the alternatives are given in Volume 1, Chapter 5 and Appendix K. The analyses show that, for all of the alternatives analyzed in this EIS, the impacts would be small.

01.01.01.01 (045) Action Alternatives

COMMENT

The commentor notes that there is only a small difference between the analyses for the Decentralization and the 1992/1993 Planning Basis alternatives.

RESPONSE

The commentor is correct. Actions taken under the Decentralization alternative would be similar to those that would occur under the 1992/1993 Planning Basis alternative.

DOE believes that the range of alternatives analyzed in the EIS is inclusive and in accordance with the philosophy of considering a full range of reasonable alternatives, as required by the provisions of the National Environmental Policy Act (NEPA) and Council on Environmental Quality (CEQ) regulations.

01.01.01.01 (046) Action Alternatives

COMMENT

The commentor opposes the Regionalization and Centralization alternatives based on the generation of high-level and transuranic wastes due to spent nuclear fuel stabilization activities conducted under these alternatives.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Volume 1, section 3.1 describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL. See also the response to comment 01.01.01.01 (022)

1.1.1.2 Siting Alternatives

01.01.01.02 (001) Siting Alternatives

COMMENT

The commentor states that it is inappropriate to store spent nuclear fuel at the Oak Ridge Reservation because of that area's high rainfall.

RESPONSE

Rainfall, like all other environmental parameters, such as high winds and seismic activity, is one of the factors in the design of SNF storage facilities for a given site. Rainfall is explicitly considered in the analysis of the potential dispersal of radioactive materials, be it by air, surface water, or groundwater.

Such analyses are used to design SNF storage facilities to prevent the dispersal of radioactive materials by any means. Thus, DOE considers that the amount of rainfall, in and of itself, is not a sufficient reason to eliminate a site from consideration as a reasonable alternative for managing SNF.

01.01.01.02 (002) Siting Alternatives

COMMENT

The commentor opposes spent nuclear fuel storage at the Idaho National Engineering Laboratory because of wind patterns.

RESPONSE

DOE's policy is to operate its facilities in compliance with all applicable Federal and state air quality standards and DOE Orders, and to protect human health and the environment. To determine compliance, DOE must take winds into account.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses of public exposure to airborne radioactive materials show that impacts would be small for all alternatives considered.

01.01.01.02 (003) Siting Alternatives

COMMENT

The commentor expresses the opinion that the Hanford Site is unsuitable for storing foreign research reactor spent nuclear fuel due to current conditions in the K-basins and the potential impacts of proposed additional activities on those basins if the foreign research reactor spent nuclear fuel is accepted for storage.

RESPONSE

Volume 1, Appendix A, section 2.3 discusses the SNF management program at the Hanford Site, and includes a description of near-term activities to correct problems at existing facilities. Volume 1, Appendix A, section 3.1 discusses facilities and options for SNF management to be analyzed under each of the proposed alternatives. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

01.01.01.02 (004) Siting Alternatives

COMMENT

The commentor states that DOE should consider several regional facilities that accept, in an equitable manner for disposal, spent nuclear fuel, weapons, and waste generated in their regions and not use just the Nevada Test Site for such disposal.

RESPONSE

In response to public comments raised during the scoping process, DOE identified two additional alternative sites: the Oak Ridge Reservation in Tennessee and the Nevada Test Site. The selection process is summarized in the May 9, 1994, amendment to the *Implementation Plan for the Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs EIS*. It is treated in detail in the *Alternative Site Selection Decision Process Report*.

The documents identified above state that the Nevada Test Site is not a preferred site for spent nuclear fuel (SNF) management because of the State of Nevada's current role as the host site for the Yucca Mountain Site Characterization Project. See also the response to comment 04.04 (008) on DOE's preferred alternative.

The ultimate disposition of DOE SNF, waste, and weapons is outside the scope of this EIS and is likely to be decided by Congress.

01.01.01.02 (005) Siting Alternatives

COMMENT

The commentor does not want commercial spent nuclear fuel ending up at Bremerton.

RESPONSE

The EIS does not consider management of commercial SNF. Neither DOE nor the Navy is considering this action.

01.01.01.02 (006) Siting Alternatives

COMMENT

Commentors prefer alternatives that do not result in additional nuclear waste or spent nuclear fuel being managed in various locations (the Idaho National Engineering Laboratory, the Nevada Test Site, the

Savannah River Site, the Hanford Site, and the Puget Sound Naval Shipyard). In addition, commentors express opinions, including:

- That they have enough waste and/or problems at the site
- That it is irrational to add more nuclear waste to what is there
- That past practices, safety, transportation, and/or mission conflict with proposed actions for the site
- That temporary storage may become permanent
- That permanent disposal/disposition is needed
- That better sites that present less risk are available
- That low population density, lack of government action, profit motivation, isolation, and/or lack of visibility is a poor justification
- That there is a risk to water resources, fragile ecosystems, or the environment
- That increased spent nuclear fuel management activity will be detrimental to diversification of the site mission and local economy
- That spent nuclear fuel should be managed at its current site
- That Pit 9 Project waste should not be reburied at the Idaho National Engineering Laboratory

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Volume 1, section 3.1 and Volume 2, section 3.4 describe the preferred alternatives for programmatic SNF management and SNF management, environmental restoration, and waste management at the INEL respectively. See the response to comment 07.02.01 (003) for information regarding the Pit 9 Project. See the responses to comments 04.04 (008) and 04.04 (011) for DOE's preferred alternatives.

01.01.01.02 (008) Siting Alternatives

COMMENT

Commentors express a preference for alternatives that do not result in additional nuclear waste or spent nuclear fuel being managed in South Carolina. In addition, commentors express one or more of the following opinions:

- That they have enough waste and/or problems at the site
- That such material be stored in areas of low population density rather than areas of high population density
- That past practices, safety, transportation, and/or mission conflict with proposed actions for the site

-
- That temporary storage may become permanent
 - That permanent disposal/disposition is needed
 - That better sites that present less risk are available
 - That low population density, lack of government action, profit motivation, isolation, and/or lack of visibility is a poor justification
 - That there is a risk to water resources, fragile ecosystems, or environment
 - That increased spent nuclear fuel management activity will be detrimental to diversification of the site mission and local economy
 - That spent nuclear fuel should be managed at its current site or where it is being generated/received

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

Volume 1, section 3.1, and Volume 2, section 3.4 describe the preferred alternatives for spent nuclear fuel management. See the responses to comments 04.04 (008) and 04.04 (011).

01.01.01.02 (010) Siting Alternatives

COMMENT

The commentor states that 40 years of temporary storage of spent nuclear fuel at the Idaho National Engineering Laboratory is hardly temporary. In addition, the commentor states that it is in the nation's best interest to create storage solutions for existing wastes, and that additional waste should not be sent to Idaho.

RESPONSE

Volume 1 of this EIS considers alternative approaches to safely, efficiently, and responsibly manage existing and projected quantities of SNF until 2035. This amount of time may be required to make and implement a decision on the ultimate disposition of SNF. This EIS provides the environmental information to support decisions that will facilitate a transition from DOE's current practices and ultimate disposition of SNF. The Navy and DOE intend to make the transition from fuel management under the alternatives considered in this EIS to ultimate disposition as quickly as practicable.

For more information on interim storage. see the response to comment 06.06 (003).

01.01.01.02 (011) Siting Alternatives

COMMENT

Commentors express a preference for alternatives that do not result in additional nuclear waste or spent nuclear fuel being managed in Tennessee. In addition, commentors express one or more of the following opinions:

- That they have enough waste and/or problems at the site
- That thousands of shipments of spent nuclear fuel to the Oak Ridge Reservation for the Regionalization alternative are not justified given that 98 percent of the spent nuclear fuel inventory now is stored at the Hanford Site, the Idaho National Engineering Laboratory, and the Savannah River Site
- That the Centralization alternative for the Oak Ridge Reservation makes no sense given the large number of shipments required that pose risks to persons in urban and suburban populations
- That such material be stored in areas of low population density rather than areas of high population density
- That past practices, safety, transportation, and/or mission conflict with proposed actions for the site
- That temporary storage may become permanent
- That permanent disposal/disposition is needed
- That better sites that present a lower risk are available
- That low population density, lack of government action, profit motivation, isolation, and/or lack of visibility is a poor justification
- That there is a risk to water resources, fragile ecosystems, or environment
- That increased spent nuclear fuel management activity will be detrimental to diversification of the site mission and local economy
- That spent nuclear fuel should be managed at its current site or where it is being generated/received

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Volume 1, section 3.1, and Volume 2, section 3.4 describe the preferred alternatives for spent nuclear fuel management. See also the responses to comments 04.04 (008) and 04.04 (011).

01.01.01.02 (012) Siting Alternatives

COMMENT

The commentor states that the Idaho National Engineering Laboratory is not a suitable site to receive and store additional spent nuclear fuel, citing seismic risk, groundwater hydrology, location relative to sources and likely repositories, and present site facility problems.

RESPONSE

Volume 1, Appendix D, and Volume 2, Chapter 5 discuss the impacts of SNF and waste management on INEL. These impacts would be small under all the alternatives considered in this EIS.

01.01.01.02 (013) Siting Alternatives

COMMENT

The commentor expresses a preference for alternatives that do not result in additional nuclear waste being managed at the site. The commentor objects to waste being "reburied" in Idaho.

RESPONSE

The commentor's objection to Pit 9 activities at the Radioactive Waste Management Complex (RWMC) at INEL is noted. Although Volume 2 of this EIS bounds all environmental restoration activities at INEL during the period 1995 through 2005, specific decisions regarding Pit 9 are governed by the Comprehensive Environmental Response, Compensation, and Liability Act, which has associated public involvement processes through which to obtain public input.

01.01.01.02 (014) Siting Alternatives

COMMENT

The commentor expresses a general preference for siting spent nuclear fuel management activities at the Oak Ridge Reservation. The commentor further notes that the capability exists at the Oak Ridge Reservation to manage spent nuclear fuel and that the jobs would be welcome.

RESPONSE

The commentor's preference and opinion are noted.

01.01.01.02 (020) Siting Alternatives

COMMENT

The commentor prefers alternatives that do not result in foreign spent nuclear fuel being transported through or managed at the Hanford Site.

RESPONSE

Potential acceptance of FRR SNF is being analyzed in a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft)

(FRR EIS). DOE will not make a decision on the acceptance of FRR SNF until both this EIS and the FRR EIS are completed.

01.01.01.02 (024) Siting Alternatives

COMMENT

The commentor prefers alternatives that do not result in additional nuclear waste being managed at the Idaho National Engineering Laboratory in Idaho and suggests that existing waste at the site be removed as soon as possible.

RESPONSE

General solutions for managing SNF are discussed in Volume 1, section 1.1.3 and Appendix J of the EIS. Therein it is noted that technologies for final disposition of SNF cannot be specified in advance of repository acceptance requirements. These requirements are several years from completion and approval, but a combination of the technologies described in Volume 1, Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the alternatives analyzed in the EIS to providing or maintaining processing flexibility that may prove necessary to meeting the acceptance requirements. Consequently, although the ultimate disposition of SNF is a high priority for DOE, the details of disposition activities have not been finalized and are beyond the scope of this EIS. See also the responses to comments 04.04 (008) and 04.04 (011).

01.01.01.02 (025) Siting Alternatives

COMMENT

The commentor opposes Idaho becoming a nuclear waste dump and states the Idaho National Engineering Laboratory is not the place for a repository. The commentor adds that this is not the proposal being made in the Draft EIS.

RESPONSE

DOE agrees that the possibility of Idaho becoming a nuclear waste "dump" or the INEL becoming a repository is not the proposed action under consideration in this EIS.

On October 22, 1990, DOE published a Notice of Intent in the Federal Register announcing its intent to prepare a programmatic EIS (DOE PEIS) addressing environmental restoration and waste management (ER&WM) (including SNF management) activities across the entire DOE complex. DOE then invited the public to submit written comments on the scope of the *Department of Energy Programmatic Environmental Restoration and Waste Management EIS*, which is now titled the *Waste Management Programmatic EIS*, held 23 scoping meetings in Idaho and across the country, and prepared a draft Implementation Plan for the DOE PEIS reflecting the comments provided. DOE held additional public

meetings on the draft Implementation Plan and recorded public comments given at these meetings. The intent of the DOE PEIS was to support complex-wide decisions regarding management of ER&WM programs, including management of SNF.

On October 5, 1992, DOE published a Notice of Intent in the *Federal Register* announcing its intent to prepare an EIS addressing environmental restoration and waste management and SNF activities at INEL. DOE held five scoping meetings in Idaho to solicit comments on the proposed scope and recorded public comments provided at those meetings. The purpose of this INEL EIS, which tiered from the DOE PEIS in accordance with NEPA regulations, was to support site-specific decisions on INEL ER&WM programs, including SNF management at INEL.

On June 28, 1993, as an outgrowth of civil lawsuits involving DOE, the Public Service Company of Colorado (owner of the Fort St. Vrain Nuclear Generating Station) and the State of Idaho, the U.S. District Court for the District of Idaho ordered DOE to include in its EIS considerations of major Federal actions involving transporting, receiving, processing, and storing SNF. Accordingly, the scope of the INEL ER&WM EIS was expanded to include a programmatic EIS for SNF management. All of these actions, along with extensive public comments on each, defined the scope of the EIS. DOE's overall approach and companion EIS evaluations satisfy the procedural requirements of NEPA and should provide adequate consideration of the important impacts.

Volume 1, section 1.2 of the EIS describes actions related to this EIS. Volume 1 of this EIS addresses the environmental impacts of the plans for managing DOE SNF. Volume 1, Appendix B defines the scope and impact of this management program in Idaho. Volume 2 of this EIS was coordinated with and is consistent with both the *Waste Management Programmatic EIS* and Volume 1 of this EIS for SNF management, because the alternatives evaluated relate to site-specific INEL activities. The *Waste Management Programmatic EIS* is expected to summarize and consider the impacts of the alternatives evaluated in the EIS regarding SNF and waste management as part of its analysis of cumulative environmental impacts.

DOE considers the evaluation of cumulative impacts in Volume 1, Chapter 5 and site-specific Appendices A through F of this EIS to adequately encompass all reasonably foreseeable actions or activities at any of the 10 sites evaluated for the management of SNF between 1995 and 2035. The cumulative impacts of proposed environmental restoration and waste management at INEL between 1995 and 2005 are addressed in Volume 2, Chapter 5, including the management of SNF at INEL. The integration of programmatic management of SNF into this EIS allows reviewers and decisionmakers to

evaluate the environmental impacts of programmatic management alternatives as they relate to the site-specific INEL management of SNF under each alternative being considered.

Pertinent environmental assessments and other EISs were reviewed and considered in the preparation of this EIS, as appropriate, to ensure consistency of information and evaluation of cumulative impacts.

01.01.01.02 (026) Siting Alternatives

COMMENT

The commentor states that the Idaho National Engineering Laboratory does not have adequate infrastructure to support any but the No Action alternative.

RESPONSE

The EIS demonstrates that INEL would be able to support SNF management under any of the alternatives. Under some alternatives, additional construction is needed. Volume 1, Appendix B, section 2.3 discusses the SNF management program at INEL. Volume 2, Appendix C discusses the projects and facilities required to successfully implement this program. This detailed information is summarized in Volume 1, Chapters 1 and 2. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

01.01.01.02 (028) Siting Alternatives

COMMENT

The commentor opposes transporting nuclear waste to the Idaho National Engineering Laboratory and supports storing waste at production sites.

RESPONSE

Volume 1, section 3.1, and Volume 2, section 3.4 identify the preferred alternatives for SNF management and discuss the actions DOE would take to the extent required by these alternatives. Research and development activities would be included.

01.01.01.02 (033) Siting Alternatives

COMMENT

The commentor suggests that the use of the language "not a preferred site" when referring to the Nevada Test Site implies that the Oak Ridge Reservation is by definition a "preferred site," when it is not.

RESPONSE

DOE believes this language is appropriate, because it accurately characterizes the inclusion of the Nevada Test Site (NTS) for the purpose of analyzing a site that lacks SNF infrastructure and experience.

As can be seen in the EIS, the NTS "nonpreferred" status still allows for full consideration of alternatives at all alternative sites. See also the response to comment 04.04 (008) on DOE's preferred alternative for programmatic SNF management, and the responses to comments 04.03.01 (028 and 032).

01.01.01.02 (035) Siting Alternatives

COMMENT

The commentor opposes any form of the Regionalization or Centralization alternatives at the Oak Ridge Reservation.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Volume 1, section 3.1 describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL.

1.1.2 INEL ER&WM Programs

01.01.02 (001) INEL ER&WM Programs

COMMENT

Commentors favor a hybrid of the Volume 2 Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives.

RESPONSE

The DOE preferred alternative for SNF management, environmental restoration, and waste management programs at INEL is identified in Volume 2, section 3.4. The preferred alternative is a modification or hybrid of the alternatives described in the Draft EIS. See the response to comment 04.04 (011).

01.01.02 (002) INEL ER&WM Programs

COMMENT

The commentor expresses a preference for the Ten-Year Plan alternative with some stipulations, including opposition to the incineration process and more options for low-, high-, and mixed-level wastes besides incineration. The commentor further states that a separate EIS should be developed for any additional incinerators at the Idaho National Engineering Laboratory and assumes an EIS has been done for current incinerators.

RESPONSE

Treatment options, including options other than incineration, for low-level, high-level, and mixed radioactive and hazardous wastes are evaluated in the EIS and are described in Volume 2, section 3.1.2. More detail on specific treatment technologies is provided in Volume 2, Appendix C. Although specific treatment technologies have not been selected for many of the waste streams, combinations of these technologies may be required for effective treatment of some waste streams. Site treatment plans being developed for waste streams will be reviewed and approved by the State of Idaho. Combinations of treatment technologies, or hybrids, are considered bounded by the analyses in this EIS.

Low-level waste has been treated at INEL through incineration at the Waste Experimental Reduction Facility (WERF). As described in Volume 2, section 2.2.7, operation of WERF was suspended in 1991 to upgrade the facility. During the shutdown, the *Environmental Assessment, Idaho National Engineering Laboratory Low-Level and Mixed Waste Processing* was prepared, which resulted in a finding of no significant impact (FONSI). DOE is currently undertaking supplemental volume reduction activities at WERF with off-site incineration commercial facilities. This EIS includes environmental impacts due to operation of WERF, including the incineration activity. Decisions on resumption of incineration of low-level waste and mixed waste at INEL will be addressed in the Record of Decision (ROD) for this EIS, which will supersede the previous NEPA documentation. Any new specific projects involving incineration will undergo NEPA review, and the need for any additional NEPA documentation, including an EIS, will be determined. Incineration of high-level waste is not currently under consideration as a treatment option.

01.01.02 (003) INEL ER&WM Programs

COMMENT

The commentor states that the continued receipt of transuranic waste on a case-by-case basis under the Decentralization alternative is not "no action."

RESPONSE

The purpose of the No Action alternative is to provide a baseline against which the action alternatives can be measured. The baseline range of existing ongoing activities for a site such as INEL includes many kinds of actions. Termination of a certain set of these activities would be more of a "stop action" alternative, which would complicate defining the baseline.

01.01.02 (005) INEL ER&WM Programs

COMMENT

The commentor objects to waste being reburied at the Idaho National Engineering Laboratory, the Pit 9 Project. The commentor expresses a preference for alternatives that do not result in additional nuclear waste or spent nuclear fuel being managed at the Idaho National Engineering Laboratory.

RESPONSE

Volume I, section 3.1 identifies the preferred alternative for programmatic SNF management and the actions that would be undertaken by DOE to the extent required by this alternative. Research and development activities would be included.

Specific cleanup decisions, such as the one made for the Pit 9 interim action cleanup, are made under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) based on the INEL Federal Facility Act/Consent Order (FFA/CO) between DOE, the Environmental Protection Agency (EPA) Region X, and the State of Idaho and are not within the scope of this EIS. The objective of cleanup decisions under CERCLA and the FFA/CO, such as for Pit 9, is to reduce the potential for exposure to contamination to ensure that human health and the environment are adequately protected. This is done by establishing cleanup objectives and standards specifically to ensure adequate protection and compliance with applicable environmental standards and guidance. Approximately half of the soil and other material in Pit 9 is estimated to contain less than 10 nanocuries per gram of transuranic elements; after initial excavation, this material would be returned to the pit following assay commensurate with current disposal practices for low-level radioactive wastes at the RWMC, as regulated by DOE Order 5820.2A, *Radioactive Waste Management*. The remaining half would be removed and treated, both to reduce transuranic concentrations to less than 10 nanocuries per gram and to satisfy risk-based cleanup criteria established in the ROD. Following treatment, this soil and other materials meeting the criteria will be returned to Pit 9 as low-level radioactive waste. The treated concentrate will be in a stable vitrified form. Although an in-depth analysis of risk was not performed for the aboveground storage alternative, it was not preferred because the waste would be stored in an untreated and potentially unstable form for an undetermined period of time until an appropriate treatment method could be found.

To minimize airborne releases, projects involving radioactive particulates at INEL would be conducted within a double-confinement structure. Conservative assumptions normally are used to estimate releases to the atmosphere, such as modeling only two filters in series when at least three are planned for actual operations. See also the response to comment 01.01.01.02 (006).

01.01.02 (006) INEL ER&WM Programs

COMMENTS

The commentor supports the Volume 2 Minimum Treatment, Storage, and Disposal alternative and its development, and supports technology resulting in less, rather than more, waste being generated.

RESPONSE

Volume 1, section 3.1 and Volume 2, section 3.4 describe the preferred alternatives for spent nuclear fuel management. See the response to comments 04.04 (008) and 04.04 (011).

01.01.02 (007) INEL ER&WM Programs

COMMENT

Commentors support the Volume 2, Maximum Treatment, Storage, and Disposal alternative.

RESPONSE

Volume 2, section 3.4, describes the preferred alternative for INEL environmental restoration and waste management activities, including SNF management. See also the response to comment 04.04 (011).

1.1.3 Others

01.01.03 (001) Other

COMMENT

Commentors support finding a safe area in which to store spent nuclear fuel.

RESPONSE

DOE agrees with the comment.

1.2 General Preferences

01.02 (001) General Preferences

COMMENT

Commentors favor the options that would require the least amount of transportation, and oppose transportation of radioactive material, and a particular option.

RESPONSE

DOE complies with U.S. Department of Transportation regulations for transporting radioactive material. These regulations are designed to protect workers and the public by minimizing the risks associated with transporting radioactive material.

In addition, the EIS evaluates a range of reasonable alternatives, from no action, which involves limited transport of radioactive materials, to centralization, which involves extensive transport of radioactive material. The analysis in the EIS shows that the potential risks from transportation would be small for all the alternatives. Nevertheless, the public comment to minimize transportation is one of the factors considered in the DOE decision-making process that will lead to a ROD. Public opposition to alternatives that would involve more, versus less, transportation is also a factor that has been considered in the decision-making process.

A discussion of SNF highway and rail transportation impacts and potential accident impacts is in Volume 1, Chapter 5 and Appendices A through F. DOE follows the U.S. Department of Transportation requirements for off-site transportation of SNF, including the use of licensed shipping containers that meet U.S. Department of Transportation and Nuclear Regulatory Commission performance requirements. As a result, the potential for exposing the public to radiation hazards is extremely low. DOE further minimizes accident risks by following training and route-selection guidelines and uses other procedural controls for hazardous and radioactive shipments. In the unlikely event of an accident, emergency response measures will be taken by DOE and local governmental authorities. As described in the EIS Summary under Public and Worker Health Effects, the overall risk from transportation would be small.

1.2.1 SNF Management

01.02.01 (002) SNF Management

COMMENT

The commentor favors upgrading existing temporary storage facilities and expediting ultimate disposition over developing a centralized, temporary storage site.

RESPONSE

Volume 1, section 3.1 summarizes the alternatives for managing SNF. These alternatives range from a large number of sites to a single centralized site. NTS, which is close to the Yucca Mountain site, is included in the evaluation. Yucca Mountain is being studied as the potential site for the first geologic repository. If the site is found suitable, acceptance of commercial SNF is expected to begin in 2010. DOE high-level waste acceptance is planned for 2015; the date for acceptance of DOE SNF at the repository has not been finalized.

01.02.01 (003) SNF Management

COMMENT

The commentor opposes sending N-Reactor spent nuclear fuel or other weapons-grade spent nuclear fuel to Britain for reprocessing.

RESPONSE

A discussion of potential foreign reprocessing of N-Reactor SNF is in Volume 1, Appendix A, Attachment B.

01.02.01 (005) SNF Management

COMMENT

Commentors find it "frightening" and "absurd" that DOE, the Department of Defense, and the Navy have been unable to come up with a feasible and workable alternative.

RESPONSE

DOE believes it has evaluated a full range of reasonable alternatives. Volume 1, section 3.1 describes the preferred alternative for programmatic SNF management. See also the response to comment 04.04 (008).

The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives. For example, the ROD could incorporate actions from one or more of the five alternatives analyzed. Moreover, the programmatic decisions will not identify all site-specific SNF management options. If appropriate, the decisions or implementation would be made after additional site-specific NEPA evaluation.

1.2.1.1 Action Alternatives

01.02.01.01 (001) Action Alternatives

COMMENT

The commentor prefers that spent nuclear fuel be managed at the nearest good site and not spread out.

RESPONSE

The EIS evaluates 10 sites as reasonable alternatives for some level of SNF management activities. The analysis in the EIS considers a number of factors, including risk to the public from both operations and reasonably foreseeable accident conditions. Discussions on public health and safety can be found in the Occupational and Public Health and Safety sections in Volume I and its site-specific Appendices A through F, and in Volume 2, section 5.12. The EIS concludes that there would be no significant risks to the public or the environment due to SNF management activities at any of the 10 sites considered.

01.02.01.01 (002) Action Alternatives

COMMENT

The commentor prefers alternatives that manage spent nuclear fuel at its current site or where it is generated or received, which will help keep pressure on waste reduction and disposal activities.

RESPONSE

See the response to comment 04.04 (008).

01.02.01.01 (003) Action Alternatives

COMMENT

The commentor states that this EIS addresses nothing new in establishing a viable waste policy and that moving nuclear wastes around only delays the problem to the next generation.

RESPONSE

DOE is committed not only to developing Federal geologic repositories for permanently isolating SNF, but to providing safe interim storage pending availability of permanent disposal facilities. SNF transportation is necessary to varying degrees under the alternatives DOE is analyzing for providing safe interim storage and management of SNF. The alternatives have definite purposes for relocating SNF, such as storing similar fuel types within a single secure facility. Thus, the alternatives attempt to balance transportation concerns with other worthy considerations, including nonproliferation, worker safety, and cost effectiveness.

The potential impacts of storing radioactive materials associated with SNF are discussed in Volume 1, Chapter 5 of the EIS. Environmental consequences of programmatic SNF management are presented for all alternatives in Volume 1, section 5.1. and mitigation measures are discussed in Volume 1, section 5.7. DOE has a program for safely managing and storing SNF and other radioactive materials at each of the sites considered in the EIS. DOE's policy is to design, construct, and operate its facilities to provide a level of safety and safety assurance that meets applicable Federal, state, and local requirements and regulations and DOE Orders. DOE will manage SNF in a manner that ensures protection of the environment and the health and safety of the public and site employees.

01.02.01.01 (005) Action Alternatives

COMMENT

The commentor supports alternatives that commit DOE to accept spent nuclear fuel from university reactors, specifically the Decentralization, Regionalization, and Centralization alternatives, and requests annual shipments.

RESPONSE

Volume 1, section 3.1 describes the preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL. See the responses to comments 04.04 (008) and 04.04 (011).

01.02.01.01 (006) Action Alternatives**COMMENT**

The commentor states that under the No Action alternative, universities will have to store spent nuclear fuel without the infrastructure of an operating reactor.

RESPONSE

Volume 1, section 3.1 identifies the preferred alternative for programmatic SNF management and the actions that would be undertaken by DOE to the extent required by this alternative. Research and development activities would be included

01.02.01.01 (007) Action Alternatives**COMMENT**

The commentor objects to the No Action alternative because of the increased potential for radiation exposures and the reduction of safety margins related to degrading spent nuclear fuel. The commentor also notes that there are indirect impacts associated with no research on appropriate technologies for stabilization under the No Action alternative.

RESPONSE

DOE formed a No Action alternative that would provide for minimum safe management of SNF and serve as a basis for comparison so that bounding impacts could be obtained through analysis of the other alternatives. This analysis is consistent with CEQ regulations and guidance for the No Action alternative.

1.2.1.2 Siting Alternatives**01.02.01.02 (001) Siting Alternatives****COMMENT**

Commentors express the opinion that spent nuclear fuel storage at a particular site is unacceptable because there is already too much present.

RESPONSE

Potential sites were based in part on land ownership and whether current or former SNF management activities were conducted. These sites then were evaluated by using statutory and regulatory restrictions,

environmental factors, socioeconomic and transportation issues, and implementation considerations. The sites discussed in the EIS are possible alternative sites for siting SNF storage facilities. Sites that will be used for SNF or waste storage are to be identified in the ROD. The NEPA process requires that a full range of reasonable alternatives, including alternative sites, be considered and evaluated in the EIS. See the response to comment 03.07 (003).

01.02.01.02 (002) Siting Alternatives

COMMENT

The commentor is skeptical of DOE's assertions that it can store spent nuclear fuel with negligible environmental impacts and that its entire inventory can be stored on a site only tens of acres in size.

RESPONSE

The *Alternative Site Selection Process Report* reasonably assumes that "for the scope of interim storage of newly generated spent nuclear fuel (SNF), the minimum site size is on the order of tens of acres" based on the current interim storage of Naval, test reactor, and Fort St. Vrain SNF. However, it states that "for the scope of interim storage of currently stored and newly generated SNF, under the Regionalization and Centralization alternatives, the minimum site size is on the order of hundreds of acres, based on monitored retrievable storage siting requirements for commercial SNF. The minimum site size would be in the thousands of acres if large-scale stabilization activities were undertaken in addition to interim storage, based on the nature and complexity of the processes involved and associated infrastructure required.

01.02.01.02 (004) Siting Alternatives

COMMENT

The commentor strongly opposes considering the Nevada Test Site as a potential site for spent nuclear fuel management, stating that the Western Shoshone National Council must approve such activities under the 1863 Treaty of Ruby Valley.

RESPONSE

The issue of Western Shoshone claims of ownership of a large portion of Nevada, including the Federally owned and administered lands comprising the NTS and the potential repository site at Yucca Mountain, has been a matter of contention and extensive litigation for many years. In that litigation, the U.S. Supreme Court held that the Western Shoshone had received "payment" in 1979 for the lands the Tribe still claimed, thus extinguishing any rights or title the Tribe may have had at that point in time. *United States vs. Dann*, 470 U.S. 39, 105 S. Ct. 1058 (1985). In January 1989, the Ninth Circuit of the U.S. Court of Appeals, citing the Supreme Court decision, emphatically reiterated that Western Shoshone title to these lands had been extinguished, and further ruled that the extinguishment took place in 1872.

United States vs. Dann, 873 F. 2d 1189 (9th Cir. 1989). In October 1989, the Supreme Court declined to hear the case on appeal, thus leaving to stand as law the Ninth Circuit opinion concerning the extinguishment of Western Shoshone Tribal rights. In view of these legal precedents, DOE disagrees with the continued assertion of Western Shoshone ownership of NTS or the potential Yucca Mountain repository site.

01.02.01.02 (005) Siting Alternatives

COMMENT

The commentor prefers alternatives that do not result in additional nuclear waste being managed at the Oak Ridge Reservation in Tennessee, and specifically references spent nuclear fuel coming from the State of Washington.

RESPONSE

See the response to comment 04.04 (008).

01.02.01.02 (006) Siting Alternatives

COMMENT

Commentors express the opinion that spent nuclear fuel should be stored in areas of low population density to minimize potential health risks.

RESPONSE

One purpose of this EIS is to evaluate a number of alternatives to aid decisionmakers in selecting the interim storage site(s). The sites have been evaluated based on a number of factors, including potential risks to the public. As stated in the EIS, the Atomic Energy Act of 1954 authorizes DOE to establish standards to protect health or minimize dangers to life or property. Radiation protection standards are based on controlling radioactive releases to levels as low as reasonably achievable in recognition of the potential health risk from radiation exposure.

Analyses in the Health and Safety sections of both volumes of the EIS evaluate potential impacts to the off-site public from radiological and nonradiological hazards. These analyses used population data, including proximity to the sites considered. For all alternatives, impacts would be small.

01.02.01.02 (008) Siting Alternatives

COMMENT

The commentor states that production of "nuclear waste" must stop and is opposed to receiving any more in the great Northwest so that the port cities and the Snake and Columbia Rivers are not jeopardized. The commentor prefers alternatives that do not result in additional nuclear waste being managed. The

commentor also generally questions the need to risk water resources, fragile ecosystems, the environment, etc.

RESPONSE

This EIS addresses management of DOE SNF pending ultimate disposition. Most SNF to be managed over the next 40 years exists today, and ceasing activities that generate SNF would not significantly alter the actions considered in this document. Specific environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1. Most of DOE's SNF was generated in DOE production and experimental reactors that have ceased to operate. Additional information on pollution prevention practices is in Volume 2, section 2.2.7.

01.02.01.02 (011) Siting Alternatives

COMMENT

Commentors express the opinion that spent nuclear fuel management activities should not be located in areas of high population density.

RESPONSE

Although SNF management activities can safely coincide with high-population or otherwise sensitive areas, it is prudent to strive to avoid such areas where feasible in siting new activities or missions that could present some risk to the public, however slight. However, public perceptions of risk from DOE and/or Navy activities tend to significantly exceed the actual risks. Some individuals oppose one or more of the alternatives identified by DOE and the Navy for transporting, receiving, processing, and storing spent nuclear fuel. Nevertheless, some alternative must be selected, because DOE has a considerable amount SNF. To select an alternative, the Navy is cooperating with DOE in this comprehensive EIS on SNF management, including Naval SNF. This EIS evaluates alternatives for managing SNF pending ultimate disposition. The December 22, 1993, Court Order requires the EIS to be completed and issued by April 30, 1995, and a ROD to be issued by June 1, 1995.

01.02.01.02 (012) Siting Alternatives

COMMENT

The commentor prefers alternatives that do not result in additional nuclear waste being managed at the site in their state. The commentor questions how DOE originally chose the Idaho National Engineering Laboratory, the Hanford Reservation, and the Savannah River Site for its activities 40 years ago. The commentor further points out that the National Environmental Policy Act process did not exist then. The commentor states that no scientific process was used years ago in choosing Idaho National Engineering Laboratory for waste storage, and the EIS fails to analyze different storage types or the need for, and impact of, processing.

RESPONSE

The commentor is correct that the National Environmental Policy Act of 1969 did not exist when DOE's predecessors began activities at the three sites mentioned by the commentor. The basis for decisions by the Federal Government to select these locations for siting various activities is beyond the scope of this EIS. The commentor is referred to the public information officer at each of these and other sites of interest for historical information pertaining to the sites.

Volume 1, section 1.1.3 and Appendix J discuss wet and dry storage. Within alternatives, estimated impacts of the particular storage type were included as input to modeling used to determine the alternative's impact; therefore, the consequences related to a particular storage type are included. DOE believes that assuming a potential need for processing is justified because it represents a bounding condition for potential impacts from SNF management, and because some processing may be required to prepare some SNF for interim storage. The repository criteria, while not specifically defined, can be expected to contain certain criteria that, for some fuels, can be met only by some form of processing.

Processing and reprocessing are addressed as an option under the Volume 2 Maximum Treatment, Storage, and Disposal alternative at INEL. Refer to Project Summary SNF6 in Volume 2, Appendix C. Additionally, information on historic emissions from reprocessing was used as input for the emissions modeling because it considered bounding for any potential future processing, including processing using existing or new facilities or processes. The models are considered bounding because DOE will design facilities and control operations to ensure that emissions are within the regulatory limits and that historic emissions are not exceeded. In 1992, DOE instituted a policy that phased out reprocessing for weapons production. That policy remains in effect.

01.02.01.02 (013) Siting Alternatives**COMMENT**

The commentor opposes a nuclear repository in Idaho.

RESPONSE

Volume 1, section 3 describes the alternatives for managing SNF considered in this programmatic EIS. None of the alternatives considered in this EIS would create a nuclear waste dump or repository in Idaho or at any of the other sites considered during the period of this EIS.

01.02.01.02 (014) Siting Alternatives

COMMENT

One commentor cites a quotation that states it is unrealistic to dump fuel into Savannah River Site facilities that were never designed to store nuclear waste. Another commentor expresses the opinion that storing spent nuclear fuel at the Savannah River Site is an inappropriate mission for that site.

RESPONSE

Volume I, Appendix C, sections 2.3 and 2.5 describe the SNF management program at the Savannah River Site (SRS) and identify facilities that could be used to manage SNF² under the alternatives considered in this programmatic EIS. Analyses of the alternatives and facilities in this EIS show that the impacts for all of the alternatives considered would be small.

01.02.01.02 (016) Siting Alternatives

COMMENT

The commentor expresses the opinion that DOE is continuing to bring SNF into the state for storage and should consider other areas for storing spent nuclear fuel, instead of further affecting this area.

RESPONSE

Several DOE sites do manage a significant percentage of DOE SNF and waste. This is due to each site's established capability to safely manage such materials (for example, safeguards and security, a skilled work force, facilities, and historic mission) and associated support infrastructure (for example, waste management, emergency response, and stakeholder involvement programs). Decisions about where to site and conduct such programs also are influenced by a system of checks and balances designed to be beyond DOE's control, such as Congressional funding allocations, state and local permitting requirements, and potential judicial scrutiny.

Additionally, NEPA provides opportunities to involve the public in and promote informed decisionmaking regarding major Federal decisions. Accordingly, this EIS objectively evaluates 10 sites as reasonable siting alternatives for some level of SNF management. The EIS analyses include environmental considerations, socioeconomic impacts, and potential risks to the public from both operations and reasonably foreseeable accidents for a number of options for managing SNF. The EIS concludes that there would be no significant risks to the public or to the environment due to SNF management activities at any of the 10 sites considered.

Public comments were considered in the preparation of this EIS, upon which a decision will be based. Although the EIS provides decisionmakers with an informed basis for making a decision from the perspective of environmental impacts and public comments, decisions also will be based on such

considerations as cost, programmatic needs of DOE and the Navy, and implementability. DOE intends to develop and implement a national SNF management strategy that best serves the nation's overall needs. See also the response to comment 04.04 (008).

01.02.01.02 (017) Siting Alternatives

COMMENT

Commentors express fear about Idaho or Tennessee becoming a dumping ground for nuclear waste.

RESPONSE

The above concern is not appropriate for consideration in the NEPA process. The U.S. Supreme Court held, in *Metropolitan Edison v. People Against Nuclear Energy*, 103 S. Ct. 1556 (1983), that psychological effects caused by risk are not within the scope of the NEPA process. Therefore, analyses of moral, emotional, and psychological (including fear, dread, mental anguish, hatred, etc.) issues are not included in the EIS. However, public perceptions of risk from DOE and/or Navy activities tend to significantly exceed the actual risks.

01.02.01.02 (020) Siting Alternatives

COMMENT

The commentor expresses an opinion about delays in determining the manner of ultimate disposition and takes a position against long-term storage of spent nuclear fuel at the Puget Sound Naval Shipyard, favoring the Hanford Site or the Idaho National Engineering Laboratory.

RESPONSE

Volume 1, section 3.1 identifies the preferred alternative for programmatic SNF management and the actions that DOE would take to the extent required by this alternative. Research and development activities would be included.

1.2.2 INEL ER&WM Programs

01.02.02 (001) INEL ER&WM Programs

COMMENT

Commentors state that converting high-level liquid waste to more stable calcine, followed by preparation for final disposal, must be an integral part of any alternative selected for managing high-level liquid waste.

RESPONSE

Volume 2, section 3.1 discusses DOE's plans for handling high-level waste at INEL. Volume 2, Appendix C identifies specific projects for managing high-level waste and calcine. All alternatives for managing liquid high-level waste include activities to convert it to calcine.

01.02.02 (002) INEL ER&WM Programs**COMMENT**

The commentor prefers a nonnuclear role for Idaho National Engineering Laboratory.

RESPONSE

A change in the current mission of INEL is not considered as an alternative because this EIS will not decide the future mission of INEL. The purposes of this EIS are to determine the manner in which DOE and the Navy will manage SNF during the next 40 years pending ultimate disposition, and to assess the environmental impacts to INEL from environmental restoration and waste management activities. The EIS was prepared consistent with those purposes.

01.02.02 (004) INEL ER&WM Programs**COMMENT**

The commentor supports cleaning up the Idaho National Engineering Laboratory and opposes expansion of waste disposal.

RESPONSE

The purposes of this EIS are to determine the manner in which DOE and the Navy will manage SNF during the next 40 years pending ultimate disposition, and to assess the environmental impacts to INEL from environmental restoration and waste management activities. The EIS was prepared consistent with those purposes.

01.02.02 (005) INEL ER&WM Programs**COMMENT**

The commentor proposes a number of actions for waste management and environmental restoration at the Idaho National Engineering Laboratory.

RESPONSE

Some of the actions suggested by the commentor fall within the various alternatives currently evaluated in Volume 2 of the EIS, and constitute a hybrid alternative covered by the existing analysis of the environmental impacts. Other suggested actions are outside the scope of the proposed action in this EIS, either because they are outside the subject or are the proposed action or are outside the 10-year period

(1995 to 2005) for the INEL site-specific portion covered in Volume 2 of the EIS. See also the response to comment 07.02.01 (003).

01.02.02 (006) INEL ER&WM Programs

COMMENT

The commentor opposes the construction of the Mixed/Low Level Waste Disposal Facility above Idaho's sole-source aquifer in a floodplain.

RESPONSE

This project is a part of the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives. The INEL accident assessment summarized in Volume 2, section 4.15 considers flooding and other natural phenomena as potential initiators of facility accidents. Some potential accident initiators were selected for detailed analysis because they were comparatively likely, and some initiators were selected for detailed analysis because of their potentially large consequences. The consequence of a seismic failure of the high-level waste tanks was selected for detailed analysis over a flooding scenario because the large radioactive inventory in the high-level waste tanks has a greater potential for consequences to water resources than a flood. The analyses showed that the risks to the aquifer and all other risks would be small.

The Mixed/Low Level Waste Disposal Facility would be designed, constructed, and operated in accordance with all applicable regulations. DOE recently constructed new flood and erosion control features at the RWMC. This new construction will reduce the possibility of flooding at the RWMC, as well as minimize any impacts that could occur should the area receive a large volume of water later from runoff or snow melt.

1.2.3 Others

01.02.03 (001) Others

COMMENT

Commentors suggest that nuclear waste be managed on one of the Marshall Islands.

RESPONSE

The NEPA process requires that a full range of reasonable alternatives, including alternative sites, be considered and evaluated in an EIS. Potential sites were selected based in part on land ownership and whether current or former SNF management activities were conducted. The potential sites then were evaluated by using statutory and regulatory restrictions, environmental factors, socioeconomic and

transportation issues, and implementation considerations. The Marshall Islands were not considered a reasonable siting alternative and, therefore, were not included in this EIS.

01.02.03 (002) Others

COMMENT

Commentors favor managing spent nuclear fuel at a specific DOE site or sites.

RESPONSE

Volume 1, section 3.1 of the EIS describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL. See the responses to comments 04.04 (008) and 04.04 (011).

01.02.03 (003) Others

COMMENT

The commentor states that a reasonable alternative is to leave Fort St. Vrain fuel in Colorado.

RESPONSE

The EIS does analyze alternatives that leave Fort St. Vrain fuel in Colorado. Volume 1, section 3.1 of the EIS describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL. See the responses to comments 04.04 (008) and 04.04 (011).

1.3 Miscellaneous

01.03 (001) Miscellaneous

COMMENT

The commentor states that DOE is emphasizing transportation of spent nuclear fuel without considering the goals and consequences of doing so. The commentor respectfully asks what DOE will do with the additional inventory at the Idaho National Engineering Laboratory. The commentor states that the EIS does not adequately address correction of problems at existing sites and at receiving locations.

RESPONSE

DOE is committed not only to developing Federal geologic repositories for permanent isolation of SNF but to providing safe interim storage pending availability of permanent disposal facilities. Transporting SNF is necessary to varying degrees under the alternatives DOE is analyzing for providing safe SNF interim storage and management. The alternatives have definite purposes for relocating SNF such as storing similar fuel types within a single secure facility. Thus, the alternatives attempt to balance

transportation concerns with other worthy considerations, including nonproliferation, worker safety, and cost effectiveness. DOE recognizes that some alternatives increase the inventory at some locations, but believes that such consolidation may improve SNF management. The environmental impacts of such management alternatives are the subject of this EIS.

The potential impacts of storing radioactive materials associated with SNF are discussed in Volume 1, Chapter 5 of the EIS. The environmental consequences of managing SNF are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in Volume 1, section 5.7. DOE has a program to safely manage and store SNF and other radioactive materials at each of the sites considered in the EIS. DOE's policy is to design, construct, and operate its facilities in a way that provides a level of safety and safety assurance that complies with applicable Federal, state, and local requirements and regulations and DOE Orders. DOE will manage SNF to ensure protection of the environment and the health and safety of the public and site employees. See also the response to comment 01.01.01.01 (022).

01.03 (003) Miscellaneous

COMMENT

The commentor states that the Waste Experimental Reduction Facility and the Process Experimental Pilot Plant operated without an EIS to incinerate waste and were in violation of the Resource Conservation and Recovery Act.

RESPONSE

Environmental assessments were prepared for both WERF and the Process Experimental Pilot Plant. The Process Experimental Pilot Plant operated only in a trial burn mode, and DOE discontinued the project. Volume 2 of this EIS analyzes the cumulative impacts of operating the WERF incinerator for treatment of mixed low-level waste. Incineration is a best demonstrated available technology for many of the hazardous wastes that could be treated at WERF.

Mixed low-level waste has been incinerated at WERF only for trial burns. WERF is an interim-status facility under RCRA. The permit status of WERF is discussed in Volume 2, Chapter 7.

2. NEPA-RELATED COMMENTS

02 (001) NEPA-Related Comments

COMMENT

Commentors state that decisions have already been made; that the [EIS] process is an attempt to openly and officially make the Idaho National Engineering Laboratory a de facto atomic dump; and that the EIS was designed to support this previously arrived-at official decision.

RESPONSE

Council on Environmental Quality (CEQ) regulations at 40 CFR 1506.1(a) state that until an agency issues a Record of Decision, no action shall be taken that would either have an adverse impact on the environment, or limit the choice of reasonable alternatives.

No final decisions within the scope of this EIS have been made or will be made until a Record of Decision (ROD) for the EIS is issued.

2.1 EIS Presentation and Distribution

02.01 (002) EIS Presentation and Distribution

COMMENT

Commentors express opinions about the writing and organization of the EIS Summary, stating that the summary is confusing, seems to obscure rather than clarify information, and contains internal contradictions. Commentors recommend a different format for the Summary.

RESPONSE

The EIS follows the format specified by CEQ regulations at 40 CFR 1502.10. The Summary highlights the most significant aspects of the EIS and is written and organized in a manner and format consistent with the EIS for the purpose of providing a relatively brief overview.

Because summaries must be short, they cannot provide all supporting information. Volume 1, Chapter 3 and Volume 2, Chapter 3 provide substantially more information on the alternatives. For example, the more extensive description of the alternatives explains why all high-level waste cannot be transferred to the Idaho National Engineering Laboratory (INEL).

The statements identified as contradictory by the commentors are that the document does not support choices of technologies for ultimate disposition of spent nuclear fuel (SNF) but will support the transition between current management practices and ultimate disposition. These statements are not

contradictory. As pointed out in Volume I, Chapter I, technologies and facilities will depend to some extent on waste acceptance criteria for the ultimate disposition site. Thus, the final technologies cannot be determined until some uncertainties are resolved.

02.01 (003) EIS Presentation and Distribution

COMMENT

Commentors state that the *Spent Fuel Working Group Report* is not referenced in the EIS and ask how the report was taken into account in the EIS.

RESPONSE

The *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities* and its corresponding action plans are referenced in Volume 1, Chapter 9 and Volume 2, Chapter 9. The report, also called the spent nuclear fuel vulnerability assessment, and its relationship to this EIS are discussed in Volume 1, Chapter 1 and Volume 2 section 2.2.5.

Volumes 1 and 2, Chapter 3 have been modified to describe how the information in the spent nuclear fuel vulnerability assessment was used in the preferred alternative decision process.

02.01 (004) EIS Presentation and Distribution

COMMENT

The commentor suggests that a statement regarding fuel for Naval and DOE reactors should be changed to "highly" enriched uranium.

RESPONSE

The statement in Volume I, section 3.2.1 has been revised to read "... the fuel for Naval and some DOE reactors utilizes highly enriched uranium..."

02.01 (005) EIS Presentation and Distribution

COMMENT

The commentor states that Volume 1, Table 1-4 should list the EIS on a *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Spent Nuclear Fuel*.

RESPONSE

Volume 1, Table 1-4 does list that EIS. It is the fourth entry under the DOE Headquarters classification.

02.01 (006) EIS Presentation and Distribution

COMMENT

The commentor requests that the EIS use suitable names instead of letters to designate alternatives, which would make it easier to read and understand the comparisons of alternatives.

RESPONSE

DOE uses names in addition to letters when appropriate to describe or discuss alternatives, particularly in the Summary and main volumes of the document. Regarding readability, appendices provide more detailed data to support the main volumes and contain more detailed technical information. The comparisons of alternatives are also provided in Volume 1 and the Summary. The Summary provides graphics for easy comparison of alternatives.

02.01 (007) EIS Presentation and Distribution

COMMENT

The commentor states that the EIS inappropriately uses cubic meters instead of metric tons of heavy metal as a measure of spent nuclear fuel and requests a conversion table between metric tons of heavy metal and cubic meters.

RESPONSE

The commentor is incorrect that cubic meters is the measurement scale the EIS uses for SNF. To be consistent with Nuclear Regulatory Commission and commercial-sector conventions, the EIS presents all measurements of SNF in terms of metric tons of heavy metal.

02.01 (008) EIS Presentation and Distribution

COMMENT

The commentor asks that the EIS include a clear explanation of the weightings applied to various impacts to make a conclusion.

RESPONSE

The EIS identifies all impacts, as required by the National Environmental Policy Act (NEPA). The decisionmakers must consider the environmental impacts in making their final decision.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between the alternatives. Therefore, the final decision will include consideration of other relevant factors, including economic and technical considerations and

agency statutory mission. The ROD will identify and discuss all such factors, which will be balanced by DOE in making its decision, and will state how those considerations entered into its decision.

02.01 (009) EIS Presentation and Distribution

COMMENT

The commentor states that the EIS does not address specific scientific questions; therefore, the commentor cannot really comment.

RESPONSE

The EIS addresses environmental and scientific issues that are relevant to the proposed actions or alternatives. DOE believes that it has provided accurate scientific analyses and has fulfilled its obligations and responsibilities in accordance with NEPA.

02.01 (010) EIS Presentation and Distribution

COMMENT

The commentor states that the Department of Transportation and the Nuclear Regulatory Commission transportation regulations are not discussed.

RESPONSE

The commentor is referred to Volume 1, section 7.2.4 for a discussion of hazardous and radioactive materials transportation regulations. This section discusses both Department of Transportation (DOT) and Nuclear Regulatory Commission (NRC) regulations. In Volume 2, DOT and NRC transportation regulations are discussed in section 7.2.5. Volume 1, Appendix I contains additional information about transportation regulations.

02.01 (011) EIS Presentation and Distribution

COMMENT

The commentor states that the notification dates for Oak Ridge Reservation and Nevada Test Site inclusion in the EIS should be added to the EIS, if those dates differ from the dates the two sites were added to the spent nuclear fuel management EIS.

RESPONSE

The Oak Ridge Reservation and the Nevada Test Site were added to the *Implementation Plan for the Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory EIS* on May 9, 1994. This information is provided in Volume 1, section 1.3.1.

02.01 (012) EIS Presentation and Distribution

COMMENT

The commentor asks that a glossary be included in the EIS.

RESPONSE

In Volume 1, the glossary is in Appendix H, and in Volume 2, the glossary is in Appendix E.

02.01 (013) EIS Presentation and Distribution

COMMENT

The commentor is unclear what the term "rolled up" means.

RESPONSE

The term describes the process of taking data or text from one or more areas of the EIS and combining the information into a summary section.

02.01 (014) EIS Presentation and Distribution

COMMENT

The commentor states that different formats for tables, figures, and charts and different computer codes were used for each site, which makes comparing the alternatives difficult.

RESPONSE

The site-specific appendices to Volume 1 were prepared by contributors at the individual DOE sites. Computational methods were defined by a set of technical guidelines that provided common guidance to all site contributors. Volume 1, Chapter 5 compares the alternatives by using figures and tables that summarize all the data for each alternative. These charts use the same format and units. Thus, the commentor should be able to compare one alternative with another by comparing the respective summary pages.

02.01 (015) EIS Presentation and Distribution

COMMENT

The commentor states that the EIS numbering system used is confusing and suggests a sequential numbering system that distinguishes between volumes.

RESPONSE

The EIS is divided into two separate volumes, one dealing with programmatic proposed action (Volume 1), and one dealing with an INEL site-specific proposed action (Volume 2). Each page is labeled with either Volume 1 or Volume 2 and, if appropriate, an appendix designation. The front of each volume contains a reader's guide that describes the organization of this complex document. Additionally, DOE prepared a user's guide as a road map for reviewing the documents.

02.01 (016) EIS Presentation and Distribution

COMMENT

The commentor states that the results of the *Waste Management Programmatic EIS* and the Reconfiguration EIS have not been included in this EIS, thereby precluding accurate characterization of environmental impacts.

RESPONSE

Volume 2, section 2.1.3 discusses DOE EISs that are related to this EIS; the two identified by the commentor are included in the discussion. Writers and analysts coordinated with those developing the other EISs to ensure consistency. This EIS bounds the potential impacts of nationwide SNF management and SNF management, environmental restoration, and waste management programs at INEL. DOE considered the environmental impacts of past, present, and reasonably foreseeable future activities in the EIS's cumulative impact analysis.

02.01 (017) EIS Presentation and Distribution

COMMENT

The commentor notes that the Idaho National Engineering Laboratory has an entire volume, which seems to give it special status, and that a better balance should be achieved.

RESPONSE

This EIS is comprised of two separate evaluations: one programmatic and one site-specific.

Volume 1 covers the proposed action for DOE complex-wide programmatic SNF management. Volume 2 is site-specific and covers INEL environmental restoration and waste management programs (including a proposed action involving site-specific spent nuclear fuel management). Although additional decisions are pending at INEL, as reflected in Volume 2, this does not give INEL special status.

02.01 (018) EIS Presentation and Distribution

COMMENT

The commentor states that in Volume 1, Appendix C, there are detailed inventory tables of anticipated chemicals, but none for radionuclides, and that the radionuclide inventories should be provided.

RESPONSE

The necessary information concerning radionuclides related to SNF management is available in Appendix C, Tables 4-9, 5-7, and 5-9. DOE reviewed the tables in Appendix C, and decided that no format change was warranted. The information comes from annual environmental monitoring reports and technical reports. The information should remain consistent with previously published reports.

02.01 (019) EIS Presentation and Distribution**COMMENT**

The commentor requests a full accounting of all the spent nuclear fuel in America that must be stored.

The commentor also requests a graphic showing a football field of fuel.

RESPONSE

As noted in Volume 1, management of commercial SNF is outside the scope of this EIS, so that category of fuel is not tabulated. A full inventory of DOE SNF is in Volume 1, section 1.1 (Tables 1-1 and 1-2). DOE believes that it is more appropriate in the EIS to show the locations of SNF and the amounts stored at each site, rather than to display the total amount graphically, as was done in a fact sheet distributed to the general public.

02.01 (020) EIS Presentation and Distribution**COMMENT**

The commentor states that a paragraph in Appendix F describing the Y-12 Plant mission is confusing and that a replacement should be found.

RESPONSE

Additional discussion of the Y-12 Plant mission is provided in Volume I, Appendix F, Part Three, throughout Chapter 2.

02.01 (021) EIS Presentation and Distribution**COMMENT**

The commentor states that the EIS could be improved by providing additional specific information, including comparative cost analyses, tribal and treaty issues, site hydrology, and strategic land-use planning.

RESPONSE

NEPA does not require the preparation of a comparative cost analysis. However, for long-term planning purposes, some of which are beyond the scope of this EIS, DOE prepared a cost evaluation report, which is summarized in Volume I, Chapter 3.

Tribal and treaty issues, site hydrology, and strategic land-use planning are all important and are addressed in Volume 2, sections 4.4.2, 4.8, and 4.2.1, respectively. Potential impacts from proposed and alternative actions can be found in sections 5.4, 5.8, and 5.2, respectively.

Assumptions for future land uses at INEL will be made to determine the appropriate level of cleanup under the Federal Facility Agreement/Consent Order (FFA/CO), and the Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA) process. In August 1994, the DOE Idaho Operations Office issued for public comment the *Idaho National Engineering Laboratory Long-Term Land Use Future Scenarios* (Draft). This document set forth various land-use scenarios that could be assumed for short-term and long-term activities at INEL. Public comments on the document were received and are currently being reviewed and incorporated as appropriate. A final *Long-Term Land Use Future Scenarios* document will be issued by DOE after the INEL Site-Specific Advisory Board reviews the document and submits comments. The Board expects to provide comments in the spring of 1995.

02.01 (022) EIS Presentation and Distribution

COMMENT

The commentor states that the EIS should present the effectiveness of mitigation measures, clarify the distinction between alternatives in terms of groundwater impacts, and describe monitoring plans, including staffing requirements, to ensure measures will be carried out.

RESPONSE

DOE revised the EIS to better describe the types of measures that could be implemented to possibly minimize any impacts from proposed actions, although under all of the alternatives considered the environmental impacts would be small. The proposed measures and a qualitative discussion of their effectiveness in protecting water resources are described in Volume 2, section 5.19.5. These measures apply to all alternatives. The potential impacts of each proposed alternative on groundwater resources are quantified in Volume 2, section 5.8 and Appendix F-2. Groundwater monitoring and the limitations on monitoring data are described in Volume 2, Appendix F, section 2.2.2. If necessary, a mitigation action plan will be prepared that will address issues raised by the comment.

02.01 (023) EIS Presentation and Distribution

COMMENT

The commentor states that the word "negligible" does not accurately describe the environmental impacts discussed in the EIS.

RESPONSE

Based on the best information available, this EIS concludes that environmental impacts would be small under all the alternatives. Analyses in this EIS were prepared and reviewed by technical experts in each discipline. Analyses and conclusions are supported by studies, reports and literature, for which references are provided. DOE revised the EIS to eliminate the use of the word "negligible."

02.01 (024) EIS Presentation and Distribution**COMMENT**

Commentors request that detailed discussions of the various sites' Federal Facility Agreements and Consent Orders and the effects of the EIS alternatives on the agreements and orders be provided in the EIS.

RESPONSE

DOE's policy is to comply with all applicable Federal and state laws and regulations, Presidential Executive Orders, and DOE Orders, as stated in Volume I, section 2.2. This policy also applies to Federal Facility Agreements and Consent Orders. The No Action alternative in this EIS, which provides a baseline for comparing of the environmental impacts of the other alternatives, would not meet all regulatory requirements. DOE considered regulatory compliance, and compliance with existing agreements and consent orders in its process to identify the preferred alternatives. Detailed discussions of site-specific regulatory frameworks, sufficient to aid the EIS decision-making process, are provided in Volume I, Appendices A through F, sections 2.2.

02.01 (025) EIS Presentation and Distribution**COMMENT**

The commentor states that the spent nuclear fuel EIS does not explicitly indicate how stakeholder concerns or values are accounted for as alternatives are compared. The commentor suggests that numerical information condensed in tables and charts would be more helpful if immediately preceded by an explicit discussion of the values underlying the comparisons.

RESPONSE

Public concerns, among other considerations, are important to the decision-making process for this EIS. Volume 1, section 1.4 and Volume 2, section 2.1 both describe how public involvement was used and will continue to be used in making these decisions.

Tables and charts are included to make this document more informative. Where necessary, the tables and charts are discussed to provide additional information.

02.01 (026) EIS Presentation and Distribution**COMMENT**

Commentors express the opinion that the EIS is too long, too bulky, and too hard to read or understand. They consider length and wordiness to detract from the document's message or to make it difficult for people to comment meaningfully. Some commentors suggest that the EIS cost too much to prepare.

RESPONSE

While the EIS contains a large amount of technical information, an effort was made to prepare a document that the public could easily read and understand.

The EIS was prepared in a layered fashion with respect to the technical depth of the information. The Summary is intended to summarize the information, in a concise format that would be generally understandable by nontechnical persons. The first three chapters of each volume present expanded information with more technical detail, but are still in summary form. The remaining chapters in each volume summarize the technical information needed to support a decision. The appendices are technically detailed and provide sufficient information for a thorough technical review.

The size and cost of preparing this EIS were caused by a number of factors. The EIS covers a broad range of proposed actions and alternatives. Volume 1 considers reasonable programmatic DOE complex-wide alternative approaches to safely, efficiently, and responsibly manage existing and projected quantities of SNF until 2035, as well as the No Action alternative. Volume 2 addresses reasonable alternative approaches for managing DOE's environmental restoration, waste management, and SNF management activities over the next 10 years at INEL, as well as the No Action alternative. To adequately address all the environmental factors potentially impacting the wide range of related decisions necessarily results in a large document.

02.01 (027) EIS Presentation and Distribution**COMMENT**

The commentator states that the Draft EIS fails to identify a proposed action and to provide a detailed analysis of the environmental impacts of that action.

RESPONSE

The proposed action for Volume 1 of this EIS is the safe management of SNF pending final disposition. The proposed action for Volume 2 of this EIS is to develop appropriate facilities and technologies for waste and SNF management at INEL and to effectively manage wastes resulting from environmental restoration, SNF management, and other activities at INEL.

In response to public comments, Volume 1, Chapter 2 and Volume 2, Chapter 1 were revised to more clearly identify the proposed action.

02.01 (028) EIS Presentation and Distribution**COMMENT**

The commentor recommends a different format for the EIS, including supplementing it with additional information.

RESPONSE

The EIS follows the format established by CEQ at 40 CFR 1502.10 which state that an EIS must describe the purpose and need for agency actions; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

In response to comments from the public, the EIS was modified to provide information important to the decisionmaker or to make necessary editorial changes.

02.01 (029) EIS Presentation and Distribution**COMMENT**

The commentor states that the EIS Summary does not explain why the scope of the EIS was expanded.

RESPONSE

The commentor is correct. However, an explanation of the evolution of the EIS is in Volume 2, section 2.1.4.

02.01 (030) EIS Presentation and Distribution**COMMENT**

The commentor states that, with respect to spent nuclear fuel management, the EIS provides only a cursory, disjointed presentation that undermines the rational, informed decision-making process envisioned by the National Environmental Policy Act.

RESPONSE

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for agency action; alternatives, including no action; the affected environment; and environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

CEQ regulations at 40 CFR 1500.1(b) state that environmental information presented to the public in NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail. To achieve this, 40 CFR 1502.21 states that the agency shall incorporate materials into an EIS by reference when the effect will be to cut down on the bulk of the document. One mechanism for incorporation by reference is discussed in the regulation on "tiering" at 40 CFR 1520.20, which encourages agencies to eliminate repetitive discussion of the same issues and to focus on the actual issues ready for discussion at each level of environmental review.

In consideration of the volume of information presented in the Draft EIS, DOE extended the public comment period to 90 days, which is twice that required under NEPA, and conducted 33 public hearings at 20 locations across the nation, 8 of which were held in Idaho. In addition, DOE accepted public comments in writing, via hearing exhibit, and via a toll-free telephone line well published throughout the comment period. DOE is confident that it has considered all public comments received on the Draft EIS, responded in Volume 3, Response to Public Comments, and issued a Final EIS that incorporates all meaningful comments, as appropriate.

02.01 (031) EIS Presentation and Distribution

COMMENT

The commentor suggests that DOE include a "reference guide" in the EIS, including descriptions of all past accidents as well as complete historical monitoring records, to depict the totality of the Idaho National Engineering Laboratory's past and current impact on the environment.

RESPONSE

Documents relating to past accidents and reports of monitoring at INEL and in neighboring communities are available to the public by request and in reading rooms. In many cases they are listed as references in this EIS.

Because the purpose of this EIS is to examine the environmental impacts of various proposed future activities, a baseline of present-day activities and their impacts was established for comparison among and between alternatives. Documentation used to arrive at the baseline is listed as reference material.

02.01 (032) EIS Presentation and Distribution

COMMENT

The commentor suggests the EIS requires wider distribution.

RESPONSE

The Draft and Final EISs were distributed to more than 100 libraries and DOE reading rooms and Navy information locations. All members of the public who commented on the Implementation Plan and Draft EIS were contacted to ask if they wanted a copy of the Final EIS.

02.01 (033) EIS Presentation and Distribution

COMMENT

The commentor indicates that Attachments A through F were not included in Volume I, Appendix D to the EIS, thus precluding proper review.

RESPONSE

Attachments A through F were included in Appendix D, Part B of the Draft EIS. Appendix D consists of two volumes (Part A and Part B) due to its length. Part B was sent on request, and was available in the public reading rooms and information locations.

2.2 Segmentation

02.02 (001) Segmentation

COMMENT

The commentor states that the spent nuclear fuel EIS does not consider connected actions, as defined in 40 CFR 1508.25(a), with regard to this and other construction projects slated to begin at the Oak Ridge Reservation in calendar year 1994-1995.

RESPONSE

The actions mentioned by the commentor do not qualify as "connected actions," as defined in 40 CFR 1508.25(a), because they are not connected to the programmatic decision on SNF and they were scheduled to proceed before the time period addressed in the EIS. The projects mentioned are, however, potential cumulative actions. Foreseeable construction projects were considered in the assessment of cumulative impacts for the Oak Ridge Reservation (ORR) in Appendix F, Part Three, section 5.16. Discussion of cumulative impacts in this EIS is sufficient to satisfy the requirements at 40 CFR 1508.25. For example, specific references to construction projects slated to begin at ORR in 1994-1995 are considered to be in the baseline characterization. Reasonably foreseeable future construction projects were identified to qualitatively assess potential programmatic cumulative environmental consequences. Specific reference to and quantification of individual construction projects would be analyzed in a site-specific EIS if ORR is considered as a candidate site for SNF management.

02.02 (002) Segmentation

COMMENT

The commentor states that DOE has segmented the environmental evaluations of several major activities, including receipt of foreign research reactor fuel, in a manner that will cause significant environmental impacts to not be evident. The commentor notes that the National Environmental Policy Act regulations state that "connected actions" and cumulative actions must be analyzed, and that similar actions should be addressed in one EIS when it is the best way to adequately address the impacts.

RESPONSE

This EIS is designed to provide information for a decision or decisions on where to manage all of DOE's existing and reasonably foreseeable SNF inventory. As such, the programmatic document is substantially independent of the proposal analyzed in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft)* (FRR EIS). DOE can decide on a contingency basis where to manage its SNF inventory without deciding whether and how to manage foreign research reactor fuel. However, while a decision on whether and how to manage foreign research reactor fuel containing uranium of United States origin has not been and will not be made until the completion of the FRR EIS, the potential impacts of the proposal are included in this programmatic document to ensure that the potential impacts of implementing the proposed policy are considered in any programmatic SNF management decision.

The purpose of the FRR EIS is to analyze the impacts of a proposed United States policy to accept foreign research reactor (FRR) SNF containing uranium of United States origin. Analyzing the proposed policy in a separate EIS allows members of the public to focus their attention on the threshold question of whether to accept FRR SNF as part of the DOE inventory. Analyzing the policy imperatives underlying the proposed policy as part of this programmatic EIS would add significantly to the length of the programmatic document, which is already very lengthy and complex. The SNF analyzed in the FRR EIS is less than 1 percent of the SNF covered in this EIS. If under the FRR EIS the decision is made to accept all FRR SNF containing uranium of United States origin, the effect would not be significant to decisions made under the this EIS.

The DOE *Waste Management Programmatic Environmental Impact Statement* will evaluate the proposed action of formulating and implementing waste management alternatives. The principal focus of that EIS is to evaluate potential configurations for waste management capabilities. Although DOE had proposed to consider the storage of SNF in the *Waste Management Programmatic Environmental Impact Statement*, on June 28, 1993, the United States District Court for the District of Idaho ordered DOE to prepare a comprehensive, site-wide EIS on the environmental effects of all major Federal actions

involving SNF at INEL. The scope of the EIS Court Order included evaluating alternatives of transporting, receiving, processing, and storing SNF at sites other than INEL. In view of the breadth of the Court Order, DOE proposed on September 3, 1993, to expand the scope of the Idaho National Engineering Laboratory Environmental Restoration and Waste Management Environmental Impact Statement to include analysis of SNF management that was being prepared for the *Waste Management Programmatic Environmental Impact Statement*.

02.02 (003) Segmentation

COMMENT

Commentors question how this EIS fits in with and is connected to the other DOE site-specific EISs being prepared.

RESPONSE

DOE is or will be preparing a number of programmatic and site-specific EISs. The linkage between these programmatic and site-specific EISs is discussed in Volume 1, section 1.2 and Volume 2, section 2.1.3 of this EIS. Other DOE EISs being prepared, including the DOE *Waste Management Programmatic EIS*, use this EIS as a basis for assessing cumulative impacts.

02.02 (005) Segmentation

COMMENT

The commentor opposes Idaho becoming a nuclear waste dump and states that the Idaho National Engineering Laboratory is not the place for a repository. The commentor adds that this is not the proposal made in the Draft EIS.

RESPONSE

DOE agrees that the possibility of Idaho becoming a nuclear waste "dump" or INEL becoming a repository is not the proposed action being considered in this EIS. See the response to comment 01.01.01.02 (025).

2.3 Scope

02.03 (001) Scope

COMMENT

Commentors want cost evaluation to be part of this EIS.

RESPONSE

DOE prepared a spent nuclear fuel cost evaluation report for long-term planning purposes, some of which are beyond the scope of this EIS. Volume 1, section 3.3 summarizes the costs for implementing actions under each alternative considered in this EIS.

02.03 (002) Scope**COMMENT**

Several commentors suggest that spent nuclear fuel from the Navy program and from foreign research reactors needs to be addressed in separate EISs.

RESPONSE

As DOE is responsible for managing SNF from research and Naval reactors, it is appropriate to evaluate potential environmental impacts in this programmatic EIS. DOE is preparing a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft). See also the response to comment 02.02 (002).

02.03 (004) Scope**COMMENT**

Commentors are of the opinion that the EIS is not comprehensive enough.

RESPONSE

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input on the scope of the EIS was solicited from the public during the scoping periods held for the *Waste Management Programmatic EIS* and the *Idaho National Engineering Laboratory Environmental Restoration and Waste Management EIS*. Input was also solicited from the public during a 90-day public comment period, which allowed commentors to send written comments, give oral comments and send facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in this EIS are on file and are available to the public.

02.03 (005) Scope

COMMENT

The commentor states that discussions of spent nuclear fuel should not have the confounding effect of being combined with discussions of environmental restoration and waste management at the Idaho National Engineering Laboratory.

RESPONSE

As discussed in Volume 2, section 2.1, DOE did not originally intend to include the decision regarding continued receipt of SNF in its *Idaho National Engineering Laboratory Environmental Restoration and Waste Management EIS*. However, on June 28, 1993, as an outgrowth of civil lawsuits involving DOE, the State of Idaho, and other parties, the U.S. District Court for the District of Idaho ordered DOE to prepare an EIS that examines alternatives to transporting, receiving, processing and storing SNF at INEL. See *Andrus vs. Public Service Co.*, 824 F. Supp. 1483 (D. Idaho 1993). Because of the quantities and types of fuel currently at INEL, a thorough analysis of these activities required assessing similar activities throughout the DOE complex. Thus, DOE decided to expand its site-specific EIS for INEL to incorporate the programmatic decision regarding the management of SNF within the DOE complex, previously part of DOE's *Waste Management Programmatic EIS*. The expanded document is this EIS.

02.03 (006) Scope

COMMENT

The commentor cites a DOE statement that cost and public opinion will be two key factors helping DOE make its spent nuclear fuel management decisions, and states that a programmatic EIS "is not a particularly good vehicle for analyzing or developing these determinants."

RESPONSE

The analysis in the EIS show that, for all environmental factors considered, the impacts of all alternatives would be small. CEQ regulations allow an agency to make decisions based not only on environmental factors, but also on technical or practical considerations and agency mission, as well as public comments. This is true whether the EIS is a programmatic study, or is more specific to a local site. DOE prepared a spent nuclear fuel cost evaluation report for long-term planning purposes, some of which are beyond the scope of this EIS. Volume 1, section 3.3 summarizes the cost of implementing actions under each alternative.

02.03 (007) Scope

COMMENT

The commentor states that the EIS fails to be conducted within the context of DOE's reconfiguration programmatic EIS, *Environmental Restoration and Waste Management Programmatic EIS*, and implementation plan for compliance with the Federal Facilities Compliance Act.

RESPONSE

The relationship between this EIS and other DOE NEPA documents is addressed in Volume 1, section 1.2 of this EIS, which was updated and enhanced to better describe the interrelationships among these NEPA documents. DOE is coordinating the preparation of the *Waste Management Programmatic Environmental Impact Statement* with the development of individual site treatment plans under the Federal Facilities Compliance Act.

02.03 (008) Scope

COMMENT

The commentor states that the failure to deal with generation of spent nuclear fuel as creation of a waste that is not being safely stored, temporarily or permanently, is not adequate under the National Environmental Policy Act, because the planning component is left out of the EIS.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. Most SNF to be managed over the next 40 years exists today, and ceasing activities that generate SNF would not significantly alter the actions considered in this document. The EIS and analyses determined that the environmental consequences of interim storage of SNF would be small.

02.03 (009) Scope

COMMENT

The commentor states that DOE has targeted Idaho National Engineering Laboratory as its complex for storing spent nuclear fuel because only it has been analyzed in detail, and that no decision on spent nuclear fuel can be made until each potential site has completed a site-specific National Environmental Policy Act review.

RESPONSE

To ensure that DOE took a thorough look at alternatives for managing SNF at sites other than INEL, Volume 1 of this EIS assesses, at a programmatic level, the environmental impacts of conducting SNF management activities at five DOE sites and at five Naval sites for Navy SNF. The analyses, as summarized in Volume 1, Chapter 5, indicate that conducting SNF management activities at any of the candidate sites would result in small environmental impacts over 40 years. The level and depth of these

analyses are sufficient to provide the necessary information to allow an informed programmatic decision, in conjunction with other decision factors such as mission impact, cost, and schedule. Volume 2 provides a detailed site-specific analysis for all existing and potential waste management activities at INEL, including SNF management. Volume 1, section 3.1 describes the preferred alternative for programmatic management of SNF.

02.03 (010) Scope

COMMENT

The commentor raises issues about the impact of storing long half-life materials and of potential accidents on quality of life.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. See also the response to comment 01.02.01.02 (017).

Volume 1, Chapter 4 addresses discrete resource categories that incorporate aspects of quality-of-life issues, such as air and water quality, noise, socioeconomic, and transportation. To the extent that quality of life is related to environmental impacts, these concerns are discussed in the EIS.

02.03 (011) Scope

COMMENT

The commentor states that because waste processing is not considered in this EIS, it seems irrational to discuss waste management and spent nuclear fuel management within the same document, which is also true for the environmental restoration of past activities.

RESPONSE

CEQ requires that the cumulative impacts of all connected and related activities be assessed in an EIS. To segregate environmental restoration from other waste management activities would preclude this required analysis. Volume 1 analyzes the programmatic management of SNF nationwide, whereas Volume 2 analyzes site-wide environmental and restoration, waste management (including waste treatment), and SNF management programs at INEL for the next 10 years. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5, summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the environmental impacts of all alternatives considered would be small.

02.03 (012) Scope

COMMENT

The commentor expresses the opinion that the scope of the EIS, with regard to the spent nuclear fuel processing project [Volume 2, Appendix C, section SNF6], fails to fully bound impacts to Idaho National Engineering Laboratory waste management operations and the environment because DOE does not estimate the amount of high-level liquid waste generated by the project.

RESPONSE

The volume of high-level liquid waste cited by the commentor from the *Idaho National Engineering Laboratory Conceptual Site Treatment Plan* results from operations (such as cleanout) other than fuel processing at the Idaho Chemical Processing Plant. The waste generated from such operations is included in the estimates of high-level liquid waste at INEL under the various alternatives (see Volume 2, section 3.1, Figure 3.1-11).

As the commentor states, the EIS does not provide throughput characterization of the Waste Immobilization Facility. Rather, the EIS presents the Waste Immobilization Facility project summary as a bounding analysis of the potential range of technologies that have been identified for treatment of liquid and calcine high-level waste. The specific technology to be further developed is scheduled to be selected in conjunction with the ROD for this EIS. Following further development and analysis of the technologies, a facility-specific NEPA review would be required for facility construction. That facility-specific document would provide more precise information on throughput and emissions characterizations.

02.03 (014) Scope

COMMENT

The commentor states that the EIS scope is so broad that it fails to focus on Idaho's concern in the lawsuit and on the intent of the Court Order; i.e., whether the Idaho National Engineering Laboratory is a suitable site for continued receipt of Navy and Fort St. Vrain spent nuclear fuel.

RESPONSE

Because of the wide-ranging types and significant quantity of SNF managed by DOE at INEL, DOE determined that the court-ordered examination of alternatives for SNF at INEL requires the review of capabilities across the entire DOE complex. Therefore, on September 3, 1993, DOE issued a Notice of Opportunity in the *Federal Register* announcing its intent to expand the scope of the ongoing INEL EIS to include a DOE complex-wide review of the alternatives for managing SNF, including Naval SNF. The notice also announced the public's opportunity to comment on the expanded scope. Public comments received in response to the Notice of Opportunity, as well as public comments provided in the

original scoping processes for both the SNF and INEL EIS and on the *DOE Environmental Restoration and Waste Management Programmatic EIS*, were considered in developing the Implementation Plan for this EIS.

The EIS supports two sets of decisions: Volume 1, programmatic actions for SNF management during a 40-year planning horizon; and Volume 2, specific decisions about SNF management and environmental restoration, waste management activities at INEL. This structure satisfies the requirements of the Court Order.

02.03 (015) Scope

COMMENT

The commentor states that both foreign research reactor and commercial spent nuclear fuel should be included in the scope of this EIS.

RESPONSE

Foreign research reactor spent nuclear fuel (FRR SNF) is included in the analyses in this EIS to ensure that the potential environmental impacts of implementing the proposed policy regarding FRR that would be based on the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft) (FRR EIS)* are considered in any programmatic SNF management decision. A discussion of the relationship between this EIS and the FRR EIS is in Volume I, section 1.2.4. See also the response to comment 02.02 (002).

Regarding commercial SNF, DOE manages only a small quantity of special-case commercial SNF, which is addressed in this EIS. It is inappropriate to consider commercial SNF, in general, in this EIS because this material is not managed by DOE. Under the Nuclear Waste Policy Act, as amended, DOE is responsible for managing the program for development of geologic repositories for permanent disposal of SNF and high-level radioactive waste. A separate EIS is required under Nuclear Waste Policy Act, as amended, to accompany the recommendation of a repository site to the President.

02.03 (017) Scope

COMMENT

The commentor states that the EIS has no discussion of how DOE will manage environmental restoration, waste management, and spent nuclear fuel beyond 10 years.

RESPONSE

The EIS supports two sets of decisions: Volume 1, programmatic actions for SNF management during a 40-year planning horizon; and Volume 2, specific decisions for environmental restoration, waste

management, and spent nuclear fuel management activities at INEL. Volume 2 evaluates only the projects that are reasonably foreseeable and may fall within a 10-year period. DOE expects that over the course of the next 40 years, additional projects for managing waste and spent nuclear fuel will be necessary. The need for appropriate NEPA reviews will be evaluated as the projects are defined. Both volumes of this EIS will be evaluated and updated when new projects are planned or as additional information becomes available.

02.03 (018) Scope

COMMENT

The commentor states that the EIS should evaluate all of DOE's special materials, such as reactor control rods, in a similar manner to spent nuclear fuel.

RESPONSE

Managing wastes, such as radioactive or contaminated components from SNF management activities, is considered in Volume 1 and its site-specific Appendices A through F. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the environmental impacts of all alternatives considered would be small.

For example, the ends of the fuel modules removed from Naval SNF modules at the Expanded Core Facility in Idaho are structural materials that support and direct the flow of cooling water during operation. This structural material is removed by cutting through portions of the fuel modules that contain no fuel. The material removed from the ends of the fuel modules does not contain any fuel or fission products from fuel, and therefore, cannot be considered SNF. They do not contain transuranic elements of fission products; thus, they cannot be considered high-level waste or transuranic waste. The amounts of radioactivity in the end boxes cause them to be classified as low-level waste or transuranic waste. Consequently the material removed from the ends of the modules at the Expanded Core Facility is categorized as low-level waste due to the amount of radioactivity present in it. The disposal of this structural material at the Radioactive Waste Management Complex at INEL is accomplished in accordance with all applicable regulations.

Management of DOE radioactive materials and waste such as those cited by the commentor is covered under the *Waste Management Programmatic EIS*, that is currently being developed.

02.03 (019) Scope

COMMENT

The commentor states that a permanent repository for spent nuclear fuel is not likely to exist in 40 years and recommends that the maximum storage interval and the time span covered by the EIS be extended to 60 to 80 years.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes that decisions on ultimate disposition will be made and implemented within 40 years; however, DOE is committed to safely managing DOE SNF for whatever time interval is necessary. DOE will review this EIS periodically and update it as appropriate during this period.

02.03 (020) Scope

COMMENT

The commentor references the problems identified in the *Spent Fuel Working Group Report* and states that DOE has an obligation to address non-Navy spent nuclear fuel types and associated environmental impacts. The results should be considered in the EIS and the Record of Decision.

RESPONSE

This EIS deals with non-Navy fuel, such as production reactor fuel at the Hanford Site and the Savannah River Site, and university research reactor fuel. In response to the report referred to by the commentor, DOE issued action plans to correct vulnerabilities. The relationship of this EIS to the spent nuclear fuel vulnerability assessment and its action plans is discussed in the appropriate site appendices of Volume 1. Discussions for the Oak Ridge Reservation, the Savannah River Site, and the Hanford Site were expanded in the Final EIS based on public comments.

02.03 (022) Scope

COMMENT

The commentor states that the focus of the EIS is on shipping, instead of the impacts of spent nuclear fuel on the environment.

RESPONSE

As stated in Volume 1, Chapter 2, the evaluations in Volume 1 focus on strategies for where to conduct SNF management activities. These activities may, of necessity, involve moving SNF from generation sites to management locations. Shipping is described in the Summary to highlight a major concern for the public and the decisionmakers. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the environmental impacts of all proposed alternatives would be small.

02.03 (024) Scope

COMMENT

Some commentors state that the EIS does not provide details for foreign research reactor spent nuclear fuel and some request additional detail be included in Volume I, Appendix E.

RESPONSE

This EIS provides information for a decision or decisions on where to manage all of DOE's existing and reasonably foreseeable SNF inventory. Therefore, this programmatic document is substantially independent from the proposal analyzed in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft) (FRR EIS)*. DOE can decide on a contingency basis where to manage its SNF inventory without deciding whether to accept foreign research reactor (FRR) SNF. However, while a decision on acceptance of FRR SNF containing uranium of United States origin has not and will not be made until the completion of the FRR EIS, the potential impacts of the proposal are included in this programmatic document to ensure that the potential impacts of implementing the proposed policy are considered in any programmatic SNF management decision.

The purpose of the FRR EIS is to analyze the various alternatives and impacts of a proposed policy of the United States to manage FRR SNF containing uranium of United States origin. Analyzing the proposed policy in a separate EIS allows members of the public to focus on the specific question of how FRR SNF should be managed, including the alternative of transporting it to the United States for management by DOE.

Volume I, section 1.2 and Appendix E were expanded to provide additional information on the potential FRR inventory; however, much of the characterization detail requested is in the FRR EIS.

02.03 (025) Scope

COMMENT

Commentors express the opinion that all current and planned non-Idaho National Engineering Laboratory activities on which the Idaho National Engineering Laboratory depends, i.e., Waste Isolation Pilot Plant, Yucca Mountain, and high-level waste repositories, have to be fully characterized.

RESPONSE

DOE believes the EIS is complete and accurately reflects the potential environmental impacts of a reasonable range of alternatives. Sufficient information is included (e.g., methods used, source terms, etc.) to allow an independent review of results.

The purpose of this EIS is to evaluate alternatives for managing DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

02.03 (028) Scope

COMMENT

The commentor indicates the need for public education to offset negative media coverage and antinuclear activists, and that spent nuclear fuel and nuclear wastes are a reality that must be faced without fear.

RESPONSE

It is DOE's policy to promote public and stakeholder awareness of its proposed activities, including the purpose and need for the proposed actions and potential environmental impacts. DOE is actively engaged in public outreach programs and related activities above and beyond public involvement processes associated with NEPA to increase awareness of its activities and related issues. See also the response to comment 03.03 (008).

2.3.1 Scoping Process and Hearings

02.03.01 (001) Scoping Process and Hearings

COMMENT

The commentor states that preparing the EIS in a hurry does not allow time to do careful work, examine all the sources or do site-specific work, which results in a product that is not useful as a decision-making tool and that lacks public confidence.

RESPONSE

DOE believes the EIS is complete and accurately reflects the potential environmental impacts of a reasonable range of alternatives. DOE had adequate time to fully evaluate the alternatives. The history and development of this EIS is in Volume 1, section 1.3.

This EIS was prepared using existing information that is available to the public and referenced in the EIS. This information and the methodologies used to analyze environmental impacts in the EIS have been thoroughly reviewed, and commented on by numerous well-informed citizens, state and Federal agencies, local and Tribal officials, and public interest organizations. A great effort was made on this project to collect comments from the public nationwide and to use these comments to prepare this EIS, as appropriate.

02.03.01 (002) Scoping Process and Hearings

COMMENT

The commentor states that during the scoping hearings for this EIS, a number of technical questions were asked that the EIS does not answer. The commentor also raises questions about complete reliance on high-efficiency particulate air filters for preventing emissions of radioactive particulates.

RESPONSE

A total of 970 comments raising 4,321 issues were received during four comment periods in the public scoping phase of this EIS. Of these, 464 were technical issues. Because the primary purpose of scoping is to identify the issues to be addressed in the EIS, DOE did not intend, nor would it have been appropriate, to respond to each technical question raised. The comments in each issue category were summarized and responses were prepared for each category, to explain how the concerns would be addressed in the EIS. In the air quality category, for example, the following topics discussed in the Implementation Plan address concerns raised by the commentor: airborne pollution and contamination; effectiveness of high-efficiency particulate air filters; and impacts and dispersion of airborne pollution and contamination.

A specific commitment was made in the Implementation Plan to consider "filter efficiency, stack emissions, emission control systems, and other air pollution contamination and monitoring equipment." These commitments were kept in Volume 1, section 5.2.5 and in Volume 2, section 5.7. For DOE to respond further to specific technical issues, the commentor would have had to identify what, if any, deficiencies remain.

To minimize airborne releases, projects involving radioactive particulates at INEL would take place within a double-confinement structure. Conservative assumptions normally are used to estimate releases to the atmosphere, such as modeling only two filters in series when at least three are planned for actual operations. Also, although high-efficiency particulate air (HEPA) filters have established particulate removal efficiencies of 99.97 percent (down to diameters of 0.3 micrometers), a conservative efficiency factor of only 99 percent typically is used for operational safety and accident analyses. These filters are capable of removing particles as small as 0.001 micrometers from an airstream, but the manufacturer performs the rating calibration at 0.3 micrometers using a standard aerosol-generating device. The filters are tested annually and inspected daily to ensure that their efficiency is maintained.

Safety analyses for forthcoming INEL facility operations will not presume perfect HEPA filter operation. Additional precautions will be taken to minimize airborne releases. The pressure differential across each filter is measured continuously to detect formation of any holes or insecure filter installation. Filter

temperature will be measured to promptly detect a filter fire. Finally, radiation sensors will be installed downstream of the filters to continuously monitor atmospheric releases. Detection of radioactive particulates above the natural background levels would result in a prompt shutdown of facility operations.

See also the response to comment 05.11.03 (009).

02.03.01 (003) Scoping Process and Hearings

COMMENT

The commentor states that only two sites out of an extensive list were added during the scoping process.

RESPONSE

Volume 1, section 1.3.1 summarizes the considerations of the suitability of the sites selected. Additional details on these considerations are provided in *Alternative Site Selection Decision Process Report*, which is provided as a reference in this EIS. This reference describes selection of agency preferences among a large number of possible alternative sites based on relevant factors, including economic and technical considerations and agency statutory missions.

02.03.01 (004) Scoping Process and Hearings

COMMENT

The commentor expresses the opinion that the scoping for Oak Ridge Reservation was not adequate.

RESPONSE

On October 22, 1990, DOE published a Notice of Intent in the *Federal Register* announcing its intent to prepare a programmatic EIS addressing environmental restoration and waste management, including SNF management activities across the entire DOE complex. DOE invited the public to submit written comments on the scope of that EIS and held 23 scoping meetings across the country, including one at Oak Ridge, Tennessee, on December 11, 1990. Two-hundred thirty-seven comments were received at the Oak Ridge meeting. DOE issued a draft Implementation Plan in January 1992, reflecting the comments provided. DOE held six regional public workshops on the draft Implementation Plan and recorded public comments given at these workshops. The *Implementation Plan for the SNF and Idaho National Engineering Laboratory EIS*, issued in October, 1993, addressed the comments received from scoping meetings and regional workshops. DOE conducted four public scoping periods during the evolution of this EIS. In response to public comments raised during the scoping process, DOE initiated a process for identifying possible additional alternative sites. The result of the selection process was the inclusion and evaluation of two additional sites, including Oak Ridge Reservation. The process of including Oak Ridge Reservation as an additional, reasonable alternative site is summarized in the May

9, 1994, amendment to the EIS Implementation Plan. DOE believes it conscientiously and thoroughly fulfilled its responsibilities to use available avenues for public awareness and for solicitation of public input during all stages of the EIS process and that it has fulfilled its obligations and responsibilities in accordance with NEPA.

2.4 Adequacy of the DRAFT EIS

02.04 (001) Adequacy of the Draft EIS

COMMENT

Commentors state that the process followed for the preparation of the EIS does not meet the requirements of the National Environmental Policy Act and Council on Environmental Quality regulations. Therefore, the EIS is flawed and inadequate, and the process should be terminated.

RESPONSE

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for the proposed action; list alternatives, including no action; and describe the affected environment and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period on the Draft EIS, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS has also considered issues of concern raised during public meetings and hearings.

02.04 (002) Adequacy of the Draft EIS

COMMENT

Commentors state that the EIS contains inaccurate and outdated data; that available studies and information were not included; that statistical evaluations may not have been properly performed; and that the only documents declassified and used were those that supported the outcome that DOE favors.

RESPONSE

The analyses in this EIS were performed using unclassified information contained in references cited in the EIS, which are available in public reading rooms and information locations around the country. To permit an independent reviewer to corroborate the results, the EIS contains a full description of the methodologies, assumptions, and data used. While classified information relevant to some aspects of the EIS exists, it is consistent with the unclassified information used for the analyses and does not alter the results.

02.04 (003) Adequacy of the Draft EIS**COMMENT**

The commentor suggests that none of the options offered with regard to spent nuclear fuel fulfill National Environmental Policy Act requirements.

RESPONSE

CEQ regulations at 1502.14(a) state that agencies shall "Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives, which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." DOE believes it has evaluated a reasonable range of alternatives. Alternatives eliminated from detailed study and the reasons for they were eliminated are discussed in Volumes 1 and 2, section 3.2.

02.04 (004) Adequacy of the Draft EIS**COMMENT**

The commentor expresses the opinion that the EIS fails to assess an inclusive range of alternatives and dismisses some of the alternatives without a rigorous exploration, as required by Council on Environmental Quality regulations.

RESPONSE

DOE believes the range of alternatives analyzed in this EIS is inclusive and in accordance with the philosophy of considering a range of reasonable alternatives as required by the provisions of NEPA and CEQ regulations. Alternatives range from the No Action alternative to an alternative calling for consolidating of all SNF at a single site. Alternatives dismissed are discussed in Volume 1, section 3.2 and Volume 2, section 3.2. DOE believes the discussion of the basis for dismissing other possible alternatives is adequate.

02.04 (005) Adequacy of the Draft EIS

COMMENT

Commentors state that the Nevada Test Site and the Oak Ridge Reservation were not evaluated to the same extent as the other sites, question why the Savannah River Site documentation was developed in Idaho, and suggest that the EIS effort stop until preparers get more training on how to manage spent nuclear fuel.

RESPONSE

In response to public comments raised during the scoping process, DOE undertook a process for identifying possible additional alternative sites. [See also the response to comment 04.03.01 (002).] As a result of the selection process, the Nevada Test Site (NTS) and the Oak Ridge Reservation (ORR) were selected, and the analyses for these two sites are given in Volume 1, Appendix F. Volume 1, Appendix C, which evaluates the impacts for the Savannah River Site (SRS) was written in South Carolina. Each site appendix was reviewed and approved by DOE site managers. DOE believes the depth of analysis is appropriate for a programmatic EIS and is commensurate with the analyses of the other alternative sites in Volume 1. DOE considers the expertise and training of the preparers to be adequate, and they are listed in Volumes 1 and 2, Chapter 6.

02.04 (006) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS inadequately compares alternative sites.

RESPONSE

DOE believes that it has adequately compared the alternative sites. Volumes 1 and 2, Chapter 5 examine the potential environmental consequences of the proposed alternatives at each site. These chapters explain what evaluations were conducted and their results. The potential consequences of the proposed alternatives are then summarized and compared in section 3.3 of each volume. Supporting appendices and reference material provide increasing levels of detail on the scientific investigations.

DOE prepared this EIS to (1) provide a programmatic look forward for the next 40 years for SNF management, and (2) provide site-specific NEPA evaluations for reasonably foreseeable SNF management, environmental restoration, and waste management activities at INEL. Other site-specific NEPA reviews may be completed as additional specific proposals emerge. Those reviews can tier from this EIS.

02.04 (007) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS does not focus on solving the problems; there are only two technology development projects and no environmental restoration projects, and the EIS does not cover research and development activities to render spent nuclear fuel to an environmentally benign form.

RESPONSE

Numerous technologies are already available for managing radioactive materials, and others are being actively developed for this purpose. Technological options for managing SNF are described in Volume 1, section 1.1.3 and Appendix J.

As stated in Volume 2, section 2.1.2, potential impacts at INEL for environmental restoration activities are addressed at the site-wide level. In those instances where project-specific impacts of activities cannot be specifically quantified at this time, conservative "bounding" estimates of their environmental impacts were made. Project-specific impacts of these activities at INEL may be quantified and evaluated in the future, as appropriate, as part of the CERCLA process. Volume 2, Appendix C describes environmental restoration and waste management projects planned or currently being implemented at INEL.

Technology development activities are often done at a bench-scale level, and DOE has determined that these activities, individually or cumulatively, do not have the potential to have a significant effect on the human environment. Environmental restoration/waste management technology development is a major program that is managed through the DOE-Headquarters (HQ) Office of Technology Development (EM-50). Integrated demonstrations and integrated programs are conducted to develop new technologies. Industry and academic partners are used to find solutions to environmental challenges. Technologies related to SNF management are evolving as the final form of the SNF is defined. See also the response to comment 07.02.01 (001).

02.04 (009) Adequacy of the Draft EIS

COMMENT

The commentor states that it is unacceptable to leave all technical decisions to future EISs, and that the analysis should be adequate to support a Record of Decision.

RESPONSE

The purpose of this EIS is to consider management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

General solutions for managing SNF are discussed in Volume I, section 1.1.3 and Appendix J. Technologies for final disposition of SNF cannot be selected in advance of repository acceptance requirements. These requirements are several years from completion and approval, but a combination of the technologies described in Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the alternatives analyzed in the EIS to providing or maintaining processing flexibility that may prove necessary to meeting the acceptance requirements. The implementation of safe interim storage and transition to ultimate disposition, coupled with the ability to meet disposal criteria (waste forms) represents the solution that DOE seeks to define with this EIS. Consequently, although the ultimate disposition of SNF is a high priority for DOE, the details of disposition activities have not been finalized and are beyond the scope of this EIS.

Other major NEPA reviews related to Volume I of this EIS as of March 1995 are shown in Volume I, Table 1-4.

02.04 (010) Adequacy of the Draft EIS

COMMENT

Commentors state that the EIS does not focus on solving the problem of spent nuclear fuel management or that the best solution to the problem needs to be determined.

RESPONSE

Volume 1, section 3.1 describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes DOE's preferred alternative for SNF management, environmental restoration, and waste management at INEL. See also the responses to comments 04.04 (008) and 04.04 (011).

The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives. For example, a hybrid alternative could be developed that would incorporate actions from one or more of the five alternatives analyzed. Moreover, the programmatic decisions will not identify all site-specific SNF management options. If appropriate, specific proposals will be subjected to additional site-specific NEPA evaluation.

Ultimate disposition of SNF managed by DOE is a high priority. For planning purposes, DOE determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment

of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

02.04 (011) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS does not discuss the release of radioactivity and what is going on at the Idaho National Engineering Laboratory.

RESPONSE

Volume 2, Chapter 4 describes the existing environment at INEL, including the release of radioactivity. Volume 2, Chapter 2 discusses the current activities, facilities, and missions at INEL.

02.04 (014) Adequacy of the Draft EIS

COMMENT

The commentor states that the focus and depth of analysis contained in the EIS are not adequate to make decisions.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

02.04 (017) Adequacy of the Draft EIS

COMMENT

The commentor is of the opinion that, despite the size of the EIS, the document is inadequate.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period for the Draft EIS, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

02.04 (019) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is not adequate.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives.

Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period for the Draft EIS, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

02.04 (020) Adequacy of the Draft EIS

COMMENT

The commentor states that the information provided is insufficient to evaluate the private-sector waste stream initiatives. The commentor refers to the statement in Volume 2, section TRU 1-2, which states that the analysis in the EIS would cover all private-sector waste treatment initiatives.

RESPONSE

The analysis in this EIS is not intended to cover all private-sector waste treatment initiatives. That statement was deleted from the EIS.

02.04 (021) Adequacy of the Draft EIS

COMMENT

The commentor states that land use, air and water quality, and geologic and ecological resources were not adequately considered in the EIS.

RESPONSE

Volume 1, Chapters 4 and 5, and Volume 2, Chapters 4 and 5, as well as the site-specific and project specific appendices, consider environmental impacts, including those mentioned by the commentor. Volume 1, Chapter 5 discusses impacts in a number of scientific disciplines. Section 5.2 briefly mentions several disciplines which, although important, are not likely to affect the decision process because of similar impacts for all alternatives. This approach is deemed sufficient for a programmatic NEPA decision. Volume 1, Appendix F provides specific information on the disciplines questioned by the commentor. The analyses show that under all of the disciplines analyzed, for all of the alternative actions considered, the environmental impacts of the proposed actions would be small.

02.04 (022) Adequacy of the Draft EIS

COMMENT

The commentor observes that the EIS states that "the level of analysis in this EIS is insufficient to allow selection of a particular option." The commentor also asks how the selection will be made and what other information will be considered.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject. Some site-specific actions to implement programmatic decisions may require additional site-specific NEPA documentation.

In addition to public comments, DOE will consider environmental impacts, which would be small for all of the alternatives analyzed, as well as technical and practical considerations, economic factors, and agency missions and cost.

02.04 (023) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is very expensive and has failed to address its primary goal of evaluating environmental impacts of the proposed actions.

RESPONSE

DOE believes that environmental impacts have been analyzed for all alternatives considered in this EIS, and would be small. NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Section 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

02.04 (024) Adequacy of the Draft EIS

COMMENT

The commentor states that the comparisons of alternatives is inadequate and cost is not discussed.

RESPONSE

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Section 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives.

Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period on the Draft EIS, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

DOE prepared a spent nuclear fuel cost evaluation report for long-term planning purposes, some of which are beyond the scope of this EIS. Volume 1, section 3.3 summarizes the costs for implementing actions under each alternative.

02.04 (025) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is flawed because it ignores many of the fundamental issues regarding the storage of spent nuclear fuel at the Idaho National Engineering Laboratory.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

NEPA, 42 USC Section 4321 et seq., and CEQ regulations at 40 CFR Section 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives.

Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose

and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period, which allowed commentors to send written comments, give oral comments and facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

02.04 (026) Adequacy of the Draft EIS

COMMENT

The commentor states that the focus and depth of analysis is not adequate to make a decision for restoring the environment at the Idaho National Engineering Laboratory. The commentor also states that the document focuses on shipping spent nuclear fuel without comprehensively treating alternatives for environmental restoration and waste management at the Idaho National Engineering Laboratory.

RESPONSE

Volume 2 concentrates on the alternatives affecting INEL. Chapter 3 explains the alternatives, and the chapter is subdivided to emphasize what the alternatives are for both environmental restoration and waste management. The impacts of these alternatives are discussed in Chapter 5 and summarized in section 3.3. DOE believes it has prepared a document with the appropriate focus and depth of analysis. The content of the document follows recommendations for EISs in CEQ regulations implementing NEPA. The document also factors in topics of concern raised during public scoping meetings. The analyses and data in the EIS and the supporting conclusions have been prepared and reviewed by qualified professionals. The EIS presents and compares, for the decisionmakers, the environmental consequences that could result from implementing the various alternatives. The site-specific details of environmental restoration will be handled, and the public informed, through processes under CERCLA and the FFA/CO for INEL.

02.04 (027) Adequacy of the Draft EIS

COMMENT

The commentor states that a more complete analysis of the impacts of past releases is required. This includes assessing the adequacy of each facility's "emission system" generating the waste stream.

RESPONSE

The adequacy of each existing facility's emission system is not assessed in this EIS, but rather the impacts of emissions are considered in the analysis of environmental impacts. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

02.04 (028) Adequacy of the Draft EIS**COMMENT**

The commentor states that the EIS fails to address any spent nuclear fuel management activity beyond transportation.

RESPONSE

The EIS evaluates potential environmental impacts of transporting, receiving, processing, and storing DOE SNF. SNF risks to site workers and the general public from site operations, transportation, and facility accidents are discussed in Volume 1, section 5.1 for all alternatives analyzed. Estimated risk values are graphically contrasted among these alternatives in Volume 1, section 3.3. Cumulative impacts to the work force from all of these sources are provided in Volume 1, section 5.3. On-site transportation impacts are described in Volume 1, site-specific Appendices A through F. Shipping casks and off-site transportation impacts are described in Volume 1, Appendices D and I.

02.04 (029) Adequacy of the Draft EIS**COMMENT**

The commentor states that an EIS should be properly prepared rather than hurried after a 2-year delay.

RESPONSE

DOE believes this EIS is complete and accurately reflects the potential environmental impacts of a reasonable range of alternatives. DOE had adequate time to fully evaluate the alternatives. The history and development of this EIS is in Volume 1, section 1.3.

This EIS was prepared using existing information that is available to the public and referenced in the EIS. This information and the methodologies used to analyze environmental impacts in the EIS have been thoroughly reviewed, and commented on by numerous well-informed citizens, state and Federal agencies, local and Tribal officials, and public interest organizations. A great effort was made on this project to collect comments from the public nationwide and to use these comments in the EIS, as appropriate.

02.04 (030) Adequacy of the Draft EIS

COMMENT

The commentor states that DOE failed to consider truly decentralized management of spent nuclear fuel at sites closest to its point of origin despite the identification of numerous suitable Federally owned sites across the country, thus decreasing transportation cost and radiological risk. The commentor is of the opinion that the EIS fails to fully evaluate a No Action alternative and cites some cost and transportation benefits of this alternative.

RESPONSE

Based on consideration of the *Alternative Site Selection Decision Process Report*, the Secretary of Energy added the Nevada Test Site (NTS) and the Oak Ridge Reservation (ORR) to the eight sites being considered for SNF management. Department of Defense sites are not considered reasonable due to potential conflicts in missions as per consultation with the Department of Defense.

NEPA requires the alternatives analysis in an EIS to "include the alternative of no action." There are two distinct interpretations of no action that must be considered, depending on the nature of the proposal being evaluated. The first situation might involve an action such as SNF management where ongoing programs initiated under existing legislation and regulations will continue, even as new plans are developed. In these cases "no action" is "no change" from current management direction or level of management intensity. To construct an alternative that is based on no management at all would be a useless exercise. Therefore, the No Action alternative may be thought of in terms of continuing with the present course of action until that action is changed. Consequently, projected impacts of alternative management schemes would be compared in the EIS to impacts projected for the existing plans. In this case, alternatives would include management plans of both greater and lesser intensity, especially greater and lesser levels of SNF management activities.

The second interpretation of no action is illustrated in instances involving Federal decisions on proposals for projects. No action in such cases would mean the proposed activity would not take place, and the resulting environmental effects from no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward.

Where a choice of no action by the agency would result in predictable actions by others, this consequence of the No Action alternative should be included in the analysis. For example, if denial of permission to ship fuel to a facility would lead to construction of additional on-site storage and increased on-site inventories, the EIS should analyze this consequence of the No Action alternative.

Thus, the No Action alternative essentially conforms to decentralized management that the commentor feels should be analyzed in the EIS. As stated in the EIS, DOE may not be able to ensure full compliance with environmental laws and regulations under the No Action alternative due to the state of a number of these management facilities, as described in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and their Environmental, Safety, and Health Vulnerabilities* (the spent nuclear fuel vulnerability assessment). No change to the EIS is necessary to analyze the equivalent of the commentor's opinion as to what is a "truly decentralized" alternative.

The EIS fully analyzes the No Action alternative, per the provisions of NEPA and CEQ regulations. Transportation and costs are addressed comparably under all alternatives evaluated in the EIS, and will be considered by decisionmakers along with environmental impacts and all other pertinent factors, including public comments, to arrive at a ROD.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in the EIS, including decentralization and no action. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among alternatives, these differences by themselves are not sufficient to clearly identify one alternative as environmentally preferable.

02.04 (031) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS evaluation of the Idaho National Engineering Laboratory is inadequate because specific analyses of the impacts of proposed actions are deferred, even though the EIS was to define, disclose, and evaluate the environmental effects of sitewide activities over the next decade and beyond.

RESPONSE

DOE prepared this EIS and evaluated the proposed actions in accordance with NEPA. The content of the document follows recommendations for the content of EISs in CEQ and DOE regulations implementing NEPA, including factoring in topics of concern raised during the public scoping meetings. The analyses and data in the EIS and the supporting conclusions have been extensively reviewed. The EIS addresses the potential environmental consequences of implementing alternative actions for the programmatic management of SNF and INEL sitewide environmental restoration and waste management programs.

The EIS does not address environmental issues or concerns that are not relevant to the proposed action or alternatives. DOE believes that it has fulfilled its obligations and responsibilities in accordance with NEPA.

02.04 (032) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is flawed because it does not include all Idaho National Engineering Laboratory operations, including reactor operations such as the Integral Fast Reactor.

RESPONSE

Volume 2, Chapter 1 explains that DOE needs to make site-specific decisions that would accomplish three major goals: support research and development missions at INEL; comply with legal requirements governing SNF, waste management, and environmental restoration; and treat, store and dispose of waste, manage SNF, and conduct environmental restoration activities at INEL in an environmentally sound manner. Reactor operations are beyond the scope of this EIS. However, impacts of waste streams and SNF from reactors at INEL are assessed in Volume 2, Chapter 5.

02.04 (033) Adequacy of the Draft EIS

COMMENT

The commentor indicates that one and one-half pages of Volume I, Appendix I-7 on the subject of selecting ports of entry for foreign shipments is inadequate. The commentor also states that this EIS does not study or document the addition of new ports of entry for foreign shipments.

RESPONSE

The issue of selecting ports of entry for foreign shipments is not within the scope of this EIS. The commentor's concern is directed to the issue of FRR SNF of United States origin, which is being analyzed in a separate EIS. DOE will not make a final decision on the acceptance of that fuel until the EIS for the *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft) and this EIS are completed. Potential port sites of concern are addressed in this EIS to bound the analysis of transportation within the United States should a decision be made to return such material to this country for management.

02.04 (034) Adequacy of the Draft EIS

COMMENT

Commentors state that the document is general and suggest changes to the Summary to summarize how big the impacts are of transportation, cost, schedule, safety and health, waste, etc., and an evaluation of the advantages and disadvantages of all the alternatives.

RESPONSE

The Environmental Consequences section of the Summary presents, in summary form, the impacts, including shipments, public and worker health effects, employment, generation of radioactive waste, and impact on agency missions and cost. NEPA allows other information such as cost to be evaluated by the decisionmaker. DOE prepared a cost evaluation of proposed alternatives that is available in public reading rooms. This cost evaluation is summarized in Volume 1, section 3.3.

02.04 (036) Adequacy of the Draft EIS**COMMENT**

The commentor states that the EIS violates the National Environmental Policy Act in that insufficient information is provided on projects or facilities that are in preliminary planning stages, specifically the Idaho Waste Processing Facility.

RESPONSE

A stand-alone Idaho Waste Processing Facility located near the Radioactive Waste Management Complex is postulated for planning purposes and analysis of environmental impacts. The project description in Volume 2, Appendix C is used for analysis of potential consequences, as discussed in Volume 2, Chapter 5. Even though construction of the Idaho Waste Processing Facility is beyond the time period analyzed in Volume 2, proposed projects are included in the EIS to give readers as comprehensive a range of forthcoming projects as is currently possible. These projects or facilities may require additional analysis under NEPA. At such time, additional information on secondary waste generation will be available. The NEPA status of all environmental restoration and waste management projects contemplated for INEL is discussed in the EIS Summary and in Volume 2, Table 3.1-1.

02.04 (037) Adequacy of the Draft EIS**COMMENT**

The commentor is of the opinion that the EIS provides an inadequate review of future spent nuclear fuel management, both programmatically and at the Idaho National Engineering Laboratory.

RESPONSE

This EIS considers the management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

The problems at existing storage facilities are identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and their Environmental, Safety, and Health Vulnerabilities*. This report, commonly called the spent nuclear fuel vulnerability assessment, and associated action plans to resolve identified

vulnerabilities, are acknowledged in Volume 1, section 1.1.2 and Appendix J-2. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, DOE is committed to complying with applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees.

Decisions as to the ultimate disposition of SNF and high-level nuclear wastes have not been made, and are outside the scope of this EIS. However, ultimate disposition of SNF managed by DOE is a high priority. For planning purposes, DOE determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

General solutions proposed for managing nuclear waste are discussed in Volume 2, Chapters 1 and 2, respectively. More specific descriptions of how SNF and specific wastes would be managed under the alternative actions are in Volume 2, section 3.1.

DOE believes that the range of alternatives analyzed in this EIS is reasonable and in accordance with the requirements of NEPA and CEQ regulations. Analysis and discussion of all alternatives that can be postulated is an impossibly large task and is not required by existing regulations. Volume 1 provides the public and the decisionmakers with a programmatic view of the proposed action and a reasonable range of alternatives. The proposed action is to develop a path forward for the safe and effective management of DOE SNF. The alternatives are discussed at a level appropriate for a programmatic EIS. Once an alternative has been selected, actions within the selected alternative may require additional documentation at the site-specific level to satisfy NEPA requirements. Volume 2 is a site-specific

assessment of SNF management, environmental restoration, and waste management alternatives at INEL, which includes project-specific analyses for implementing these programs. Therefore, the alternatives discussed in Volume 2 are more specific than those in Volume 1.

02.04 (038) Adequacy of the Draft EIS

COMMENT

The commentor asserts that the EIS is deficient because it contains no analysis of the environmental impacts, including cumulative impacts from the future management of spent nuclear fuel once it arrives at Idaho National Engineering Laboratory.

RESPONSE

DOE believes the EIS is complete and accurately reflects the potential environmental impacts of a reasonable range of alternatives.

The site-specific impacts, including cumulative impacts, of managing SNF at INEL are discussed in Volume 2, Chapter 5 and Appendix F. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. Volume 2, Appendix B is specific to SNF management at INEL. The analyses show that the environmental impacts of all proposed alternatives would be small.

02.04 (040) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS does not provide documentation on exposure, dose, and risk models sufficient to support the results presented.

RESPONSE

The level of supporting documentation provided for various impact assessment models and methods reflects the tiered structure of the EIS. Every effort was made in the preparation of this EIS to make it readable and understandable by members of the public. The EIS was prepared in a layered fashion with respect to the depth of technical information. The summary is intended to present the information in a manner that would be generally understandable by nontechnical persons. The appendices are technically detailed and provide sufficient information for a thorough technical review by specialists. The appendices also contain references that provide more information on the methods and the technical analyses. This reference material is available in reading rooms and information locations, which are listed in the EIS, for anyone who wishes further technical detail. Volume 2, Appendix F provides detailed information on methodologies, key data, and assumptions used and additional information

necessary to substantiate the content and conclusions provided in Volume 2, Chapter 5. Volume 2, Appendix F includes the exposure/dose and risk models and attendant assumptions.

The environmental impact analyses, including risk analysis, are designed to produce a reasonable projection of the upper bound of potential environmental consequences. This requires appropriately conservative assumptions and analytical approaches. In this context "conservative" means that an assumption or analysis would tend to overpredict, rather than underpredict, any adverse impacts. However, overly conservative analyses do not provide a useful basis for comparing alternatives. Each alternative has been analyzed using identical methods and levels of conservatism so that the relative impacts of alternatives can be accurately assessed.

The nature of the input data for each analysis is slightly different. Socioeconomic analyses are based on projected budgets, for example, where as air resources analyses are based on estimated releases of pollutants. The analytical models are also fundamentally different for similar reasons. For all analyses where conservative assumptions were required, generally accepted engineering and scientific approaches were used to ensure that these assumptions are not outside the range of uncertainty usually associated with the data.

Detailed uncertainty analyses can sometimes be useful in evaluating environmental impacts. They are particularly valuable when projected impacts are large and it is important to know how reliable the projections are. However, quantitative estimates of uncertainty in impacts for hypothetical future activities are difficult to determine. When appropriately conservative estimates of impacts are shown to be small, the exact degree of uncertainty diminishes in importance. The estimated impacts in the EIS are small enough that detailed quantitative uncertainty analyses are not appropriate to meet the objectives of an EIS.

02.04 (041) Adequacy of the Draft EIS

COMMENT

The commentor contends that the EIS is cumbersome as a result of the dual purpose and inadequate in the examination of issues pertaining to proposed Oak Ridge Reservation sites.

RESPONSE

The EIS Summary and Volume 1, Chapter I clearly state the options being evaluated by DOE. Both state that DOE is evaluating programmatic (DOE complex-wide) approaches to managing DOE SNF and site-specific approaches for SNF management, environmental restoration, and waste management activities at INEL.

In response to public comments raised during the scoping process, DOE undertook a process for identifying additional alternative sites. As a result, NTS and ORR were selected for analysis as alternative sites. DOE believes that the depth of analysis for ORR and NTS is appropriate for a programmatic EIS and is commensurate with the analyses of the other alternative sites in Volume 1.

02.04 (042) Adequacy of the Draft EIS

COMMENT

The commentor questions the adequacy of the technical analysis and the associated quantification of the environmental impacts of the various alternatives.

RESPONSE

The environmental impact analyses are designed to produce a reasonable projection of the upper bound of potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context "conservative" means that an assumption or analysis would tend to overestimate, rather than underestimate, any adverse impacts. However, unnecessarily conservative analyses may make it more difficult to compare alternatives. Therefore, where available, the environmental impact analyses are based on realistic, site-specific information. Each alternative was analyzed using consistent methodology and levels of conservatism so that the relative impacts of alternatives could be accurately assessed and compared.

The analyses of the impacts of operations and reasonably foreseeable accident conditions are based on calculations that require two elements: 1) input data, and 2) a model or analytical method for projecting potential impacts. The nature of the input data for each analysis is slightly different. Socioeconomic analyses are based on projected budgets, for example, while air resources analyses are based on estimated releases of pollutants. The analytical models are also fundamentally different for similar reasons. For all analyses where conservative assumptions were required, generally accepted engineering and scientific approaches were used to ensure that these assumptions are not outside the range of uncertainty usually associated with the data.

Detailed uncertainty analyses can sometimes be useful in evaluating environmental impacts. They are particularly valuable when projected impacts are large and it is important to know how reliable the projections are. However, quantitative estimates of uncertainty in impacts for hypothetical future activities are difficult to determine. When appropriately conservative estimates of impacts are shown to

be small, the exact degree of uncertainty diminishes in importance. The estimated impacts in the EIS are small enough that detailed quantitative uncertainty analyses are not appropriate to meet the objectives of an EIS.

02.04 (043) Adequacy of the Draft EIS

COMMENT

Commentor express the opinion that the Draft EIS requires substantive revision to meet the requirements of the National Environmental Policy Act and the Court Order. Commentor consider the document a hurried compilation of existing data that will jeopardize the decision-making process for the Idaho National Engineering Laboratory-specific actions if not revised. Commentors further indicate that the EIS compromises adherence to Federal and state laws, although it dismisses alternatives that would violate DOE Orders or contractual agreements.

RESPONSE

In accordance with the requirements of NEPA (42 USC Section 4321 et seq.), this EIS was issued as a draft for public and agency review on June 30, 1994. Great effort was required to produce and make available an adequate Draft EIS for public review on or before June 30, 1994, to meet the deadline agreed to between the State of Idaho, DOE, and the Navy, and adopted by the Court. Though difficult to achieve, the integration of significant resources with a disciplined project management approach ensured success without sacrificing quality. Because of the volume of information presented in the Draft EIS, DOE extended the public comment period to 90 days, which is twice that required under NEPA, and conducted 33 public hearings at 20 locations across the nation, 8 of which were held in Idaho. In addition, DOE accepted public comments in writing, via hearing exhibits, and via a toll-free telephone line well published throughout the comment period. DOE is confident that it has considered all public comments received on the Draft EIS, responded to the comments, and issued a Final EIS that incorporates all meaningful comments, as appropriate.

This EIS was prepared using existing information that is available to the public and referenced in the EIS. This information and the methodologies used to analyze environmental impacts in the EIS have been thoroughly reviewed and commented on by numerous well-informed citizens, state and Federal agencies, local and Tribal officials, and public interest organizations. A great effort was made on this project to collect comments from the public nationwide and to use these comments in the EIS, as appropriate.

See also the responses to comments 04.04 (008) and 04.04 (011), as well as Volume 1, section 3.1, and Volume 2, section 3.4 for DOE's preferred alternatives.

DOE and the Navy consulted with the U.S. Environmental Protection Agency (EPA) to fully understand and be responsive to EPA comments on the Draft EIS, and to ensure that areas of insufficient information were clarified and/or enhanced in the Final EIS. In addition, DOE contacted other states and agencies providing comments on the draft to fully understand and consider their comments, with the exception of the State of Idaho, which declined DOE's requests to schedule a meeting.

The U.S. Department of the Interior (DOI) submitted comments on the Draft EIS several months after the close of the extended comment period. DOE is responding to DOI's concerns in separate correspondence.

While commentors raised a number of specific issues and concerns on the Draft EIS, none of the issues or concerns identified new reasonable alternatives requiring assessment or resulted in a significant change in the analysis of the potential environmental consequences. DOE believes that it has fulfilled its obligations commensurate with the requirements of NEPA for the preparation of an EIS.

02.04 (044) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS does not constitute an adequate, comprehensive, sitewide EIS for the Idaho National Engineering Laboratory.

RESPONSE

Volume 2, Chapters 1 and 5 discuss current and planned activities and cumulative impacts of activities at INEL. Environmental restoration and waste management activities and impacts, as discussed in Volume 2, cover a 10-year period. SNF management activities at INEL, as discussed in Volume 1, Appendix B Chapters 2 and 5, cover a 40-year period. These time periods are appropriate for analyzing near-term actions required for safe conduct of these activities. Some of the alternatives analyzed in Volumes 1 and 2 assume that waste and SNF remain at INEL.

The scope of the EIS is in accordance with the needs of DOE and the requirements of the Court Order. The EIS was reviewed during an extended public comment period. While a number of specific issues and concerns were raised on the EIS, none of the issues or concerns identified new reasonable alternatives requiring assessment or resulted in a significant change in the analysis of or the potential environmental consequences of the alternatives considered. DOE believes that it has fulfilled its obligations commensurate with the requirements of the National Environmental Policy Act for the preparation of EIS. See also response to comment 03.04.01 (007).

02.04 (045) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS discusses alternatives at the Idaho National Engineering Laboratory contingent on national spent nuclear fuel and waste management decisions. The commentor further states that this disjointed approach led to an undue influence toward Idaho National Engineering Laboratory spent nuclear fuel management, and that comments on the Implementation Plan did not result in a change in this approach.

RESPONSE

CEQ regulations regarding the preparation of NEPA documents require that when major actions are similar to other reasonably foreseeable agency actions, the environmental consequences must be evaluated in one EIS. DOE's analysis of proposed SNF activities at INEL complies with NEPA and the implementing regulations.

Accordingly, this EIS integrates national programmatic SNF management alternatives with alternatives for INEL sitewide environmental restoration and waste management alternatives, including management of SNF. The SNF management connection between the Volume 1 programmatic evaluation and the Volume 2 INEL alternatives for the management of SNF is Appendix B to Volume 1, which addresses SNF management alternatives as they would impact INEL. Recognizing the complexity and size of the EIS, DOE prepared an easy to read, volume-specific Summary to the EIS. DOE also made available a User's Guide, which leads the reviewers to EIS sections of particular interest.

Volume 1, Appendix B, Chapter 5 considers the impacts on INEL environment of the implementation of various DOE complex-wide SNF management alternatives. Volume 1, Appendix B, Chapter 2 describes INEL's SNF facility, the regulatory framework for SNF management at INEL, and the INEL SNF management program. Chapter 3 describes the DOE complex-wide SNF management alternatives as INEL proposes to implement them, including potential environmental consequences for each alternative. Chapter 4 describes the potentially affected environment, and Chapter 5 considers the environmental consequences. Transportation impacts are considered in sections 4.11, 5.11 and 5.20.3; impacts from receiving, processing and storing SNF at INEL are included in Chapters 4 and 5. Similar levels of analysis were performed for other sites being considered for SNF management, including the Savannah River Site, the Hanford Site, the Oak Ridge Reservation, and the Nevada Test Site.

02.04 (046) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS does not properly define the proposed action, but that DOE presents a

"kaleidoscope" of potential spent nuclear fuel storage and waste management facilities at the Idaho National Engineering Laboratory. The commentor is also of the opinion that the programmatic scope of the EIS does not provide the site-specific details required by the Court, thereby violating the Court Order.

RESPONSE

Volume 2, Chapter 1 describes the proposed action (see the response to comment 02.04 (047)). This involves making a number of decisions within the range of reasonable alternatives analyzed in the EIS. DOE did not have a preferred alternative at the time of the Draft EIS, and has considered public comments along with other factors such as program needs, in defining its preferred alternative in the Final EIS. See the response to comment 04.04 (011) for information on DOE's preferred alternative for INEL environmental restoration and waste management programs for 1995 to 2005. See also the response to comment 04.02 (001).

The Court Order addresses five types of SNF: Fort St. Vrain fuel, Navy SNF, university and research reactor fuel, fuel from other DOE facilities, and fuel from foreign research reactors. All of these types of SNF are discussed relative to the proposed management alternatives and the related waste management activities associated with these fuels. These discussions can be found in a number of places in the EIS including Volume 1, Chapters 4 and 5; Volume 1, Appendix B (INEL specific), Chapter 3, section 4.14; and Volume 2, section 2.2.7. DOE factored the INEL site-specific SNF impacts of Volume 1, Appendix B into the environmental restoration and waste management program alternative actions evaluated in Volume 2. DOE is confident that the analysis of the proposed action and alternatives for SNF management, environmental restoration, and waste management at INEL is in full compliance with both the requirements and intent of NEPA and the Court Order. See also the response to comment 04.02 (001).

02.04 (047) Adequacy of the Draft EIS

COMMENT

The commentor states that the Draft EIS fails to identify the proposed action for environmental restoration and waste management at the Idaho National Engineering Laboratory, and proposed environmental restoration activities are limited to decontamination and decommissioning projects. The commentor adds that only 2 of the 47 proposed activities are related to technology development, and none is for environmental restoration.

RESPONSE

The proposed action for environmental restoration and waste management programs at INEL over the 10-year period 1995 to 2005 is discussed in Volume 2, Chapter 1. The proposed action is to develop

appropriate facilities and technologies to manage waste and SNFs expected during the 10-year period; to more fully integrate all environmental restoration and waste management activities at INEL to achieve cost and operational efficiencies; and to minimize environmental impacts from environmental and waste management activities. In response to public comments, this proposed action will be achieved through five key decisions listed at the end of Volume 2, Chapter 1, including emphasis on waste minimization activities. The EIS has been revised to more clearly identify that portion of Volume 1, Chapter 2 that constitutes the proposed action.

The environmental restoration program at INEL is specifically discussed in Volume 2, sections 2.2.6 and 3.1.2. Volume 2, Appendix C addresses environmental restoration activities that have been initiated through agreement with the State of Idaho and EPA. Volume 2, Table 3.1-3 lists the general environmental restoration projects that would be completed under each alternative. Details regarding many of these projects are not available at this time. However, summaries of some projects are included in Volume 2, Appendix C.

The evaluation in Volume 2 of this EIS bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. For purposes of this EIS, environmental restoration activities are addressed to the extent that they generate wastes which must be managed by DOE waste management programs. However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991. This agreement, distinct from the EIS, is the FFA/CO. The FFA/CO establishes a comprehensive process that integrates the remediation requirements of CERCLA, and the corrective action requirements of RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

Environmental restoration efforts at INEL have progressed substantially since the FFA/CO was signed. As of November 1994, 10 of the 25 scheduled RODs have been successfully negotiated and signed by DOE, EPA, and the State of Idaho. These RODs resulted in the implementation and/or completion of several interim and final actions designed to reduce or eliminate hazards to human health and the environment. To date, all enforceable milestones set in accordance with the FFA/CO have been met, either on or ahead of schedule. Additional work will continue over the next several years, as detailed in the EIS and the FFA/CO Action Plan. For instance, the draft ROD for the Waste Area Group 10 Comprehensive Snake River Plain Aquifer Remedial Investigation feasibility Study, scheduled for May

2001, will announce decisions regarding the cleanup of the Snake River Plain aquifer. This EIS cannot anticipate the detail of those decisions. Therefore, analyses performed in support of this EIS must address the nature of the anticipated cleanup in general terms.

02.04 (048) Adequacy of the Draft EIS

COMMENT

The commentor states that DOE still does not understand its national responsibilities to protect health and safety and should consider all impacts of its proposed actions. The commentor is of the opinion that the Draft EIS has the same failings as DOE's environmental assessment, which was ruled inadequate by the Court. The commentor considers the presentation of information in the EIS to be cursory, and disjointed so as to undermine rational decisionmaking. The commentor considers the treatment of 12 current Idaho National Engineering Laboratory projects to be "superficial."

RESPONSE

DOE takes its national obligation to make informed decisions that protect the health and safety of workers, the public, and the environment seriously. This is evidenced by the coupling of the analysis of programmatic SNF management alternatives with the corresponding INEL site-specific SNF fuel management alternatives for implementation.

CEQ regulations at 40 CFR 1500.1(b) state that an EIS must concentrate on the issues that are truly significant to the action in question, instead of amassing needless detail. 40 CFR 1502.21 requires that the agency incorporate materials into an EIS by reference when the effect will be to reduce the bulk of the document. One specific mechanism for incorporation by reference is discussed in the regulation on "tiering" at 40 CFR 1502.20, which encourages agencies to eliminate repetitive discussion of the same issues and to focus on the actual issues ready for a decision at each level of environmental review.

The 12 project descriptions referred to by the commentor are interim actions at INEL being undertaken pursuant to 40 CFR 1506.1(c). The cumulative impacts of these interim actions are included within the No Action alternative in Volume 2 to provide a baseline from which the impacts of the proposed action could be assessed. In addition, although the proposed projects are summarized in Volume 2, Appendix C, the impacts of each of the proposed actions are fully assessed in the main volume (Volume 2, Chapter 5) of the INEL-specific portion of the EIS, to the extent that such proposed actions are ready for a decision.

See also the responses to comments 02.04 (043) and 02.04 (045).

02.04 (049) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is inadequate because it fails to completely address the specific proposal that was the subject of the lawsuit: the shipment and storage of spent nuclear fuel from the Fort St. Vrain reactor. The commentor suggests several reasons why the project summary on the Fort St. Vrain fuel is inadequate, including the fact that it fails to address specifics related to transportation, such as whether safe and certified shipping casks exist and analysis of rail versus truck transport by specific fuel type and location.

RESPONSE

The EIS has a summary description of the shipment and storage of the SNF from Fort St. Vrain. This summary is in Volume 2, Appendix C, section C-4.1.5. For instance, this summary specifies that Fort St. Vrain SNF would be shipped in the TN-FSV cask designed by GA Technologies and certified by the Nuclear Regulatory Commission for truck transport (certificate of Compliance No. 9253, Rev. 0), with each cask holding six SNF blocks.

Volume 2, Appendix C, section C-4.1.5 summarizes information found elsewhere in the EIS on the impacts of shipping and storing Fort St. Vrain fuel. All of the environmental impacts of SNF shipment and storage are described in Volume 1, Chapter 5 and Appendix B. Fort St. Vrain fuel is just one of several types of SNF analyzed in the EIS under the various programmatic alternatives. For example, Volume 1, Appendices D and I present transportation impacts under all alternatives evaluated for SNF management, including methodologies and route-specific data. With respect to Fort St. Vrain SNF, a licensed rail cask is not currently available, although one is being designed by Pacific Nuclear Corporation. The incident-free and accident risk transportation analyses are presented for specific fuel types and pairs of originating and final destination sites.

The EIS presents a complete and comprehensive description of the impacts associated with SNF management, including the fuel from the Fort St. Vrain reactor. See also the response to comment 02.04 (046).

02.04 (050) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is inadequate in its analysis of the impacts of long-term management of spent nuclear fuel because it fails to analyze where and how the fuel will be stored, how processing and reprocessing might occur, impacts of waste management activities, and what steps and technologies will be taken to prepare the fuel for ultimate disposition.

RESPONSE

The EIS analyzes the impacts of SNF management until 2035, by which time DOE expects to make and implement decisions regarding the ultimate disposition of SNF. Evaluating the potential environmental consequences of SNF management over the full 40-year interim period is anticipated to conservatively estimate any impacts that are reasonably foreseeable, including impacts from processing. Thus, the affected environments and environmental impacts that are reasonably foreseeable during this 40-year period are studied in detail in the EIS for a range of reasonable action and siting alternatives for SNF management. This information is in Volume 1, Chapters 4 and 5 and each of the site-specific Appendices A through F. Appendix J describes storage, processing, and steps and technologies available to either stabilize the SNF for storage and/or prepare it for ultimate disposition. The discussion in the EIS conservatively estimates all of the impacts, yet it remains flexible on the discussion of technologies due to the evolving waste acceptance criteria for potential geologic disposal, as well as development of potential new technologies not yet available. Decisions on ultimate disposition of SNF are beyond the scope of this EIS. See also the response to comment 05.09 (03).

02.04 (051) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is inadequate because it fails to fully analyze the environmental impacts of waste disposal and waste treatment technologies at the Idaho National Engineering Laboratory.

RESPONSE

The EIS considers waste treatment impacts, either onsite or offsite, under a range of reasonable alternatives in Volume 2. These alternatives range from no action to maximum treatment, storage, and disposal activities. Under the Maximum Treatment, Storage and Disposal alternative, activities are analyzed as the upper limit of the reasonably foreseeable environmental impacts, including development and implementation of necessary technologies. Volume 2, section 3.1 describes these activities; each waste stream is analyzed in detail, which includes a description of maximum treatment for high-level waste (Table 3.1-5), transuranic waste (Table 3.1-6), low-level waste (Table 3.1-7), mixed low-level waste (Table 3.1-8), and hazardous waste (Table 3.1-9). For reasonably foreseeable technologies and facilities, environmental impacts are presented in Volume 2, section 3.3, and consequences of maximum treatment, storage and disposal are analyzed in Volume 2, Chapter 5. These impacts then are summarized in Volume 2, sections 5.1 through 5.20. The analysis in the EIS is adequate for evaluating waste disposal and waste treatment impacts, and considers a range of alternatives with respect to sitewide

waste stream management activities. Additional NEPA reviews for those projects that become ready for a decision may be conducted as necessary as the waste treatment technologies are further developed. See also the response to comment 07.02.02 (001).

02.04 (052) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is inadequate because it fails to provide sufficient data to support its conclusions, including risk models and assumptions that must be available for public scrutiny, as well as information on waste management projects. The commentor indicates local information should be used, such as transportation statistics from Idaho, with regard to potential impacts. The commentor indicates that DOE is obligated to ensure that the scientific basis and uncertainty of its environmental analysis is available.

RESPONSE

The EIS complies with CEQ regulations at 40 CFR 1502.24, which require that DOE ensure the professional and scientific integrity of the discussions and analyses in the document. Wherever scientific and other sources were relied on for conclusions made in the EIS, references are cited. Reference lists appear at the end of each chapter and each appendix. All references cited in the EIS are available for public review in information locations and DOE reading rooms throughout the United States, as listed in the Summary. For example, transportation accident risks and the underlying models and assumptions are described in Volume 1, Appendix I. The reference list for these discussions is found in Appendix I-10. Similarly, the methodology and models used to calculate impacts from facility accidents are in identified Volumes 1 and 2, Chapter 5 with appropriate references. See the response to comment 07.04 (006) with respect to information on waste management projects.

Regarding impacts from transportation, Volume 1, Appendices D and I present transportation impacts for all alternatives evaluated for SNF management, including methodologies, route-specific data, etc. The analyses for both incident-free transportation and accident risk transportation are presented for an entire generic route, which includes types of routes that may exist in Idaho for those shipments that may travel through, originate, or terminate in Idaho. These evaluations include state-specific accident rates. To find the consequences of a transportation accident in a suburban area such as Pocatello, Idaho, for example, the reviewer would look up the consequences calculated for a suburban area.

In response to public comments, DOE has provided a discussion on uncertainty and conservatism in Volumes 1 and 2, section 5.1.

02.04 (053) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is inadequate because it does not incorporate impacts that might arise after 2035 if a permanent geologic repository does not become available as planned. The commentor cites cumulative impacts of waste management activities as another example of cursory analysis; that is, being defined only in waste volumes rather than in terms of past, present, and reasonably foreseeable storage and disposal actions and repository proposals.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes that decisions on ultimate disposition will be made and implemented within 40 years; however, DOE is committed to safely managing SNF for the necessary time interval. DOE will review this EIS periodically and update it as appropriate during this period.

Regarding cumulative waste management impacts in the EIS, past actions are factored into the baseline. For instance, impacts to the aquifer due to past activities are reflected in results of current monitoring and modeling. Current waste inventories reflect the accumulation of waste from past activities. Volume 2, section 5.15 presents cumulative impacts by waste stream under each of the alternatives, including transportation, over the reasonably foreseeable period of the proposed action. As with the programmatic portion of the EIS, the INEL sitewide environmental restoration and waste management portion of the EIS is subject to review and updating at least every 5 years. In that time period, DOE determines whether to prepare a new programmatic or sitewide EIS or to supplement the existing EIS, as appropriate. See also the responses to comments 05.09 (006) and 05.09 (011).

02.04 (054) Adequacy of the Draft EIS

COMMENT

The commentor expresses the opinion that the Draft EIS fails to meet the requirements of the Court Order and the National Environmental Policy Act because alternatives are assessed programmatically rather than site-specifically in the EIS. As examples, the commentor specifically references DOE's "summary dismissal" of leaving Fort St. Vrain fuel at the existing Fort St. Vrain facility, and failure to assess storing Fort St. Vrain fuel at a new facility at the Idaho National Engineering Laboratory.

RESPONSE

The EIS includes an alternative of leaving fuel at Fort St. Vrain, Colorado. The identification of alternatives when considering proposed actions is subject to the rule of reason. Although an agency must consider a reasonable range of alternatives, what constitutes a reasonable range depends on the nature of the proposed action and the facts in each case. The rule of reason is important because without it, an

infinite variety of alternatives might be considered possible. As the courts have said, "so long as there are unexplored and undiscussed alternatives that inventive minds might suggest, without the rule of reason, it would be technically impossible to prepare a literally correct EIS" [*Fayetteville Area Chamber of Commerce vs. Volpe*, 515 F.2d 1021 (4th Cir. 1975)]. As an example, this EIS addresses transportation by truck or by rail, or not transporting at all, which constitutes a reasonable range of alternatives by the rule of reason. This EIS addresses a reasonable range of alternatives in both Volumes 1 and Volume 2, and such alternatives have been adequately integrated to address a reasonable range of SNF activities at INEL.

Regarding the commentor's examples, the option of leaving Fort St. Vrain SNF at the existing Fort St. Vrain storage facility was considered under the No Action alternative. The statement in the EIS that leaving the fuel at the facility would violate the existing contract did not lessen such analysis; rather, it was a statement to advise the public of the consequences of such an alternative. DOE modified the project summary in this EIS to provide more information on the Fort St. Vrain fuel. With respect to the alternative of storing Fort St. Vrain fuel at a new facility at INEL, this is considered within the scope of the Dry Fuel Storage Facility Project Summary. See Volume 2, Appendix C, SNF-4.

02.04 (055) Adequacy of the Draft EIS

COMMENT

Commentors state that the EIS was prepared without significant consultation with the Shoshone-Bannock Tribes.

RESPONSE

DOE and the Navy consulted regularly with the Shoshone-Bannock Tribes, both with regard to this EIS and in other contexts. Specifically with respect to this EIS, DOE and the Navy reviewed the Shoshone-Bannock Tribes' comments, and to fully understand, evaluate, and consider these comments, there have been consultations between Tribal officials and appropriate INEL and Navy officials. In addition to addressing specific comments on the EIS, these ongoing consultations are designed to promote a mutual understanding of INEL-related issues important to the Tribes, both within and beyond the scope of this EIS. To date, these consultations have resulted in an increased awareness of Tribal values as they relate to nature, ties to the land, religious beliefs, and other areas of special interest to the Tribes. See also the response to comment 03.07 (008).

02.04 (056) Adequacy of the Draft EIS

COMMENT

The commentor states that regardless of which part of entry is considered, there are inadequacies in the environmental review which need to be addressed.

RESPONSE

DOE believes the analytical approaches and technical information used in the EIS to be accurate and scientifically valid. The document was prepared using all appropriate and publicly available information. DOE placed much technical detail in the appendices and references. The references cited for Volumes 1 and 2 include current information on the existing environment and applicable environmental consequences for all sites evaluated. These original studies are referenced in Chapter 9 of both volumes and are available in public reading rooms for review.

DOE made every effort to verify and check all data and statistics. All information derived from statistical evaluations in the EIS was subjected to technical and interdisciplinary reviews to reduce the possibility of error.

DOE did not omit critical information, and believes that the public review process ensures access to information by critics as well as proponents.

02.04 (057) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS neither describes ongoing activities nor analyzes their impacts in association with past and future activities, and is therefore not comprehensive.

RESPONSE

Volume 2, Chapter 4 describes the existing environment at INEL. Volume 2, Chapter 2 discusses the current activities, facilities, and missions at INEL. Site-specific impacts, including cumulative impacts, are presented in Volume 2, Chapter 5 and Appendix F. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize all of the alternatives considered in this EIS. The analysis shows that the environmental impacts of all proposed alternatives would be small.

02.04 (058) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS process is flawed because the focus is flawed, the alternatives are flawed, and the review of environmental consequences is inadequate.

RESPONSE

For each of the alternatives considered, environmental impacts were analyzed and presented to allow comparisons between the alternatives. DOE believes the technical analyses provided in this EIS, its appendices, and references accurately and adequately scope potential environmental impacts due to the proposed action.

02.04 (059) Adequacy of the Draft EIS**COMMENT**

The commentor asserts that the facility-specific environmental impacts of spent nuclear fuel management activities must be performed prior to selecting a location for that activity.

RESPONSE

Specific information is not available on facilities that have not been fully designed and constructed. Such data are also not available for future activities, such as decontamination projects that have not occurred and treatment of waste streams, the treatment plans for which have not been finalized. Generic projects are included in the EIS to present readers with as comprehensive a range of forthcoming projects as is currently possible. These projects or facilities may require additional analysis under NEPA. By analyzing generic projects at the various alternative sites, DOE can reasonably compare the impacts of these activities at a programmatic level.

02.04 (060) Adequacy of the Draft EIS**COMMENT**

Commentors state that the EIS treatment is too broad, and details about specific facilities or actions are too sketchy to serve as adequate National Environmental Policy Act documentation. One commentor asks what information other than public comments will be considered in EIS decisionmaking. Other commentors indicate that the EIS is not specific enough for adequate assessment of facilities, safety, and impacts to the environment. One commentor states that the EIS does not discuss processing.

RESPONSE

This EIS was prepared as a programmatic document dealing with the nationwide management of SNF in Volume 1, and sitewide environmental restoration and waste management and SNF management programs at INEL in Volume 2.

Because of the wide-ranging types and quantity of DOE SNF, DOE determined it prudent to examine alternatives for SNF management across the entire DOE complex; thus, a programmatic EIS. This determination was based, in part, on avoiding possible "improper segmentation," as discussed in NEPA implementing regulations at 40 CFR 1508.25 (a).

Each proposed action contemplated in this EIS is analyzed using the most current environmental analyses and other relevant information, as necessary, to assess all impacts, including cumulative impacts. Decisions for this EIS will be based on the environmental analyses, public comments, the *Spent Nuclear Fuel Management Cost Evaluation Report (Draft)*, and any other information deemed necessary by decisionmakers, including technical and practical considerations.

Volume 2, Appendix C discusses 49 potential projects to implement INEL SNF management and environmental restoration programs. Volume 2, Appendix F, and Volume 1, Appendices B and J discuss impacts from processing SNF at INEL.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the environmental impacts of all proposed alternatives would be small.

02.04 (061) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS inadequately addresses alternatives by dismissing criteria such as aquifer locations and seismicity as "Issues Not Discussed in Detail."

RESPONSE

The commentor refers to Volume 1, section 5.2, which is a high-level summation of the site-specific analyses in the associated appendices. The section presents environmental consequences of the alternatives, focusing on the disciplines that may differentiate among sites, have the potential for a more significant impact, or are of general interest to the public. The disciplines not discussed in detail in Volume 1 are considered to be issues that are small and do not distinguish among alternatives.

Nevertheless, these issues are discussed in detail in the appendices and reference documents. See also the responses to comments 02.04 (014) and 02.04 (021) regarding the adequacy of analysis in the EIS.

02.04 (062) Adequacy of the Draft EIS

COMMENT

The commentor states that the EIS is inadequate and unsatisfactory because it ignores past accidents and existing deficiencies at the Savannah River Site.

RESPONSE

Environmental impacts associated with past accidents or releases and existing deficiencies at the Savannah River Site are not within the scope of this EIS except to provide baseline data for the analysis of possible cumulative impacts. However, DOE acknowledges that environmental releases have

occurred as a result of past activities. DOE's Environmental Management Program is responsible for appropriately addressing past releases in accordance with applicable regulations and standards.

2.5 Record of Decision

02.05 (001) Record of Decision

COMMENT

The commentor states that the burial of radioactive waste, including Navy waste, and the use of radioactive waste percolation ponds must be suspended until the Record of Decision for this EIS is issued.

RESPONSE

The EIS process established by NEPA is directed at appropriately considering the environmental consequences of proposals for new activities or for alterations of existing activities or facilities. Although current operations may have a bearing on the environmental impacts of proposed new actions, NEPA does not require that current operations be shut down until decisions on proposed new actions are reached and published in a ROD.

At present, only low-level radioactive wastes are being buried (disposed of below ground) at INEL. These low-level wastes must satisfy waste acceptance criteria specific to the Radioactive Waste Management Complex. In addition, the burial of low-level radioactive wastes is an ongoing activity.

Liquid effluent discharges from INEL site activities are monitored for the presence of radioactive chemical constituents and determined suitable for release pursuant to applicable Federal and state regulations.

As discussed in Volume 2, section 5.8, radiological discharges are no longer made to infiltration ponds. Past discharges of radioactivity did not result in exceedance of EPA Primary Drinking Water Standards offsite. Also, owing to radioactive decay, the low concentrations of such radionuclides in the aquifer from past discharges continue to diminish with time.

2.6 Out-of-Scope Issues

02.06 (001) Out-of-Scope Issues

COMMENT

A number of commentors provided input at public hearings, in writing, via exhibits, and/or via the toll-free telephone line that were not related to either the programmatic management of DOE spent nuclear fuel or environmental restoration and waste management activities at the Idaho National Engineering Laboratory, or issues considered in this EIS. Some of the comments dealt with such topics as:

- Siting of a bombing range in Idaho or elsewhere
- Movement of "nuclear specialist" trucks to a facility in Hartsville, Tennessee
- An unspecified General Electric contract related to uses of nuclear power
- George Orwell's novel "1984" as it relates to safety and ethics
- Right to Work law impacts on trade unions
- United States arms exports to foreign countries
- Rights to peace and worldwide peace
- Maintaining a strong industrial base in Hawaii
- Operations of specific commercial nuclear waste facilities
- The 1948 Declaration of Human Rights

RESPONSE

It is beyond the scope of this EIS to address issues that are not related to either the programmatic management of DOE SNF or environmental restoration and waste management activities at INEL, including those listed above.

02.06 (002) Out-of-Scope Issues

COMMENT

The commentor states that the EIS fails to review alternatives and environmental consequences on the production side of the spent nuclear fuel issue, such as the continued use of nuclear ships, thereby violating the National Environmental Policy Act .

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

02.06 (003) Out-of-Scope Issues

COMMENT

The commentor objects to "spent fuel" not being called "high-level nuclear waste" in a fact sheet provided at scoping hearings for the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Reactor Spent Nuclear Fuel*.

RESPONSE

Congress established the definitions of various categories of radioactive material in the Nuclear Waste Policy Act of 1982, as amended. Section 2 of the Act defines SNF as fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing. The definitions in the Act place SNF in its own category and distinguish it from high-level and low-level waste.

02.06 (004) Out-of-Scope Issues

COMMENT

The commentor asks DOE to delegate authority to some competent people who can come up with a way to deal with nuclear waste in a safe, reliable manner.

RESPONSE

DOE is committed to comply with all applicable Federal and state laws and regulations, DOE Orders, and interagency agreements governing SNF and radioactive and hazardous wastes and is responsible for safely managing these materials. The delegation of authority or appointment of independent commissions is beyond the scope of this EIS.

02.06 (005) Out-of-Scope Issues

COMMENT

The commentor asks how or whether the full range of impacts was considered when DOE originally chose the Idaho National Engineering Laboratory, the Hanford Site, and the Savannah River Site for its activities 40 years ago. The commentor points out that the National Environmental Policy Act process did not exist then.

RESPONSE

The National Environmental Policy Act of 1969 did not exist when activities were initiated by DOE's predecessors at the three sites mentioned. The basis for previous and remote-in-time decisions by the Federal Government to select these locations for siting existing activities is beyond the scope of this EIS.

02.06 (006) Out-of-Scope Issues**COMMENT**

The commentor expresses the opinion that the costs of commercial nuclear power plant operations go beyond financial to include the environmental risks posed by reactor operations and potential accidents. The commentor cites as examples the accidents at Chernobyl and Three Mile Island.

RESPONSE

This EIS is limited in scope to DOE SNF. Neither operation and environmental risks nor costs of commercial nuclear power plants are evaluated in the EIS.

02.06 (007) Out-of-Scope Issues**COMMENT**

The commentor contends that cladding on nuclear fuel rods used in U.S. nuclear power plants is failing and that the Nuclear Regulatory Commission has done little to prevent potentially flawed fuel rod casings from being used in the United States and abroad.

RESPONSE

This EIS is limited in scope to DOE SNF. The condition of fuels in use in nuclear power plants and research reactors is not evaluated in the EIS.

02.06 (008) Out-of-Scope Issues**COMMENT**

The commentor suggests that a cost evaluation report of nuclear ships be performed and that nuclear waste cleanup be included in the EIS cost evaluation.

RESPONSE

Decisions on whether to operate nuclear-powered Naval vessels and the number of such vessels are made by Congress and the President and are beyond the scope of this EIS. DOE prepared a cost evaluation report that describes costs associated with the alternatives for SNF management. A summary of the cost evaluation report is in Volume 1, section 3.3.6. See also the responses to comments 08.03.01 (001) and 08.04 (002).

02.06 (009) Out-of-Scope Issues**COMMENT**

The commentor requests that the EIS include an inventory of hazardous and radioactive materials used, generated, and leaked to the environment over the years at the Idaho National Engineering Laboratory.

RESPONSE

A total inventory of INEL hazardous and radioactive materials used or generated, and details about environmental releases are not within the scope of this EIS, except as they may relate to the discussion of the existing site conditions, cumulative impacts, and current or proposed waste management activities. For example, Volume 2, section 4.8 includes a discussion of existing water-quality conditions in the Snake River Plain aquifer. Cleanup of contamination from past releases is addressed at INEL under the FFA/CO.

02.06 (010) Out-of-Scope Issues**COMMENT**

The commentor indicates that DOE budgets lack life-cycle costs such as those that would be required in Federal domestic budgets under proposed House Bill HR3870.

RESPONSE

The sources, appropriations, and accounting for fiscal and other resources to support the activities of the Federal Government are determined by Congress and are beyond the scope of this EIS.

02.06 (016) Out-of-Scope Issues**COMMENT**

The commentor provides a fact sheet that addresses topics and issues that are only related to the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel*.

RESPONSE

While this EIS includes potential future management of foreign research reactor spent nuclear fuel in cumulative impact analyses, the topic of DOE policy for managing this fuel is outside the scope of this EIS.

02.06 (021) Out-of-Scope Issues**COMMENT**

The commentor raises issues related to the Centers for Disease Control and Prevention dose reconstruction study currently under way at the Idaho National Engineering Laboratory.

RESPONSE

Issues related to the Centers for Disease Control and Prevention (CDC) dose reconstruction study are beyond the scope of this EIS. However, DOE and the Navy are cooperating with the CDC in its conduct of the study.

02.06 (023) Out-of-Scope Issues

COMMENT

The commentor is of the opinion that DOE made a political decision to characterize only the Yucca Mountain Site for geologic disposal, rather than all three original sites.

RESPONSE

The decision to characterize only the Yucca Mountain site was made by Congress as part of amending the Nuclear Waste Policy Act, and is beyond the scope of this EIS.

02.06 (024) Out-of-Scope Issues

COMMENT

The commentor contends that some facilities have been closed due to noncompliance with environmental regulations.

RESPONSE

The facility closures mentioned by the commentor resulted from a change in DOE's mission and program needs relative to these sites, not environmental noncompliance. Facility closures are beyond the scope of this EIS. See also the response to comment 03.08 (011).

02.06 (025) Out-of-Scope Issues

COMMENT

The commentor raises the issue that the EIS does not address the potential impacts of ocean transport of foreign research reactor spent nuclear fuel to the United States.

RESPONSE

The ocean-going portion of FRR SNF shipments and a detailed evaluation of port activities are not addressed in this EIS. Alternatives for managing FRR SNF, including shipping across the global commons, are being analyzed in a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor SNF* (Draft). This EIS addresses domestic transportation and management of FRR SNF if it is returned to the United States. DOE will not make a final decision on the policy regarding FRR SNF until that EIS and this EIS are both completed.

02.06 (027) Out-of-Scope Issues

COMMENT

The commentor expresses the opinion that the benefits derived from nuclear technology do not justify the waste and "destruction," and that nuclear reactors and weapons have not improved our image or our lives.

RESPONSE

The net benefit of nuclear technology, reactors, and weapons is not within the scope of this EIS. This EIS does, however, address alternatives for safely managing DOE SNF over the next 40 years.

02.06 (028) Out-of-Scope Issues**COMMENT**

The commentor states that this EIS does not address commercial spent nuclear fuel, and that this will lead to less than optimum decisions and no national policy.

RESPONSE

FRR SNF is included in the EIS in the event that DOE decides to accept such fuel after completion of the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor SNF* (Draft) (FRR EIS). A discussion of the relationship between this EIS and the FRR EIS is provided in Volume 1, section 1.2.4. See also the response to comment 02.02 (002).

Regarding commercial SNF, DOE manages only a very limited quantity of special case commercial SNF, which is addressed in this EIS. It is inappropriate to consider commercial SNF, in general, in this EIS because this material is not managed by DOE. Under the Nuclear Waste Policy Act, as amended, DOE is responsible for managing the program for development of geologic repositories for permanent disposal of SNF and high-level radioactive waste. A separate EIS is required under this Act to accompany the repository site recommendation to the President.

02.06 (030) Out-of-Scope Issues**COMMENT**

The commentor requests that best fuel cladding and fuel design be added to the EIS.

RESPONSE

Although the details of the design and fabrication of fuel elements and assemblies, as well as the requirements for specific cladding materials, are outside the scope of this EIS, the type of fuel cladding is a consideration in the management of SNF. A discussion of the various types of fuel claddings and management issues associated with them is in Volume 1, Appendix J.

02.06 (031) Out-of-Scope Issues**COMMENT**

The commentor recommends that DOE prepare an overall programmatic EIS to evaluate the issues associated with all EISs evaluating radioactive waste, weapons dismantlement, and the cumulative effects of all this transportation.

RESPONSE

Evaluating all nuclear waste issues at a programmatic level is beyond the scope of this EIS. However, DOE currently has a range of NEPA reviews planned or under way. Volume 1, section 1.2 was revised to more fully explain the interrelationships of these reviews. Further, in the transportation cumulative impact analysis in this EIS, DOE considered the impacts of past, present, and reasonably foreseeable actions, including other DOE and non-DOE radiological shipments.

02.06 (032) Out-of-Scope Issues**COMMENT**

The commentor is of the opinion that radioactive wastes should remain under guard at their current locations, and that the U.S. should assist Russia with waste management.

RESPONSE

The disposition of special nuclear material, such as plutonium, and assistance to Russia are outside the scope of this EIS.

02.06 (033) Out-of-Scope Issues**COMMENT**

The commentor raises issues about activities and/or mishaps unrelated to the proposed actions of this EIS.

RESPONSE

Although these issues are out of the scope, it is a matter of DOE policy to monitor such activities/events and implement precautions as necessary to preclude like occurrences in the DOE's programs.

02.06 (034) Out-of-Scope Issues**COMMENT**

The commentor favors keeping foreign spent nuclear fuel out of the United States.

RESPONSE

Alternatives related to the DOE policy on management of SNF of United States origin from foreign research reactors are being analyzed in a separate EIS and are outside the scope of this EIS. This EIS does analyze the impacts of transporting and managing FRR SNF (less than 1 percent of all the SNF addressed in this EIS) if there is a decision to accept such fuel. This effectively bounds the analysis for reasonably foreseeable management of the SNF under consideration. DOE will not make a final decision on the policy regarding FRR SNF until the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* and this EIS are completed.

02.06 (035) Out-of-Scope Issues

COMMENT

The commentor recommends zero discharge of persistent toxic chemicals and radionuclides as apparently recommended by an international joint convention in a report on Great Lakes water quality.

RESPONSE

DOE waste management policies and practices embrace numerous laws and regulations governing hazardous and radioactive wastes. A comprehensive list of these requirements is provided in Volume 2, Chapter 7; associated environmental permits are also discussed there. Current management practices for radioactive waste are described in Volume 2, section 2.2.7 (which is specific to INEL but also generally applies to wastes at other DOE sites). DOE is committed to comply with all applicable Federal, state, and local regulations and DOE Orders. All radioactive materials will be managed to protect the environment and the health and safety of the public and site employees. As discussed in Volume 1, section 5.2, the proposed alternatives would have minor impacts on water resources, but the differences in impacts do not distinguish among the alternatives. DOE also has adopted a policy emphasizing waste minimization and avoidance, as discussed in Volume 2, Chapters 1 and 2. Most new radioactive waste will be created during cleanup activities and decommissioning of contaminated facilities that no longer serve essential national missions.

02.06 (036) Out-of-Scope Issues

COMMENT

The commentor provides suggestions for additional options for transporting and storing low-level and high-level wastes.

RESPONSE

DOE complex-wide decisions on handling low-level and high-level wastes are being addressed the *Waste Management Programmatic EIS* and are outside the scope of this EIS.

02.06 (037) Out-of-Scope Issues

COMMENT

A commentor asks DOE to support legislation before Congress that would stop the export of fissionable materials. The commentor states that we in this country could bring back fuels from these research reactors as a final shipment as part of decommissioning all the research reactors. A commentor asked whether the U.S. plans to continue sending fuel to foreign countries, and whether the spent nuclear fuel would be taken back.

RESPONSE

Proposals regarding the exportation of fissile materials, reactor fuels, or other nuclear materials are beyond the scope of this EIS. Alternatives for managing FRR SNF are being analyzed in a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft).

02.06 (039) Out-of-Scope Issues**COMMENT**

The commentor states that low-level radioactivity disposal sites for nongovernment waste must be established and suggests that DOE headquarters has not done enough to expedite transfer of the Ward Valley site to the State of California, which shows lack of concern.

RESPONSE

The establishment of low-level waste disposal sites for nongovernment waste is not within the scope of this EIS.

02.06 (040) Out-of-Scope Issues**COMMENT**

The commentor states that DOE does not give the No Action alternative the detailed consideration it deserves concerning receipt of foreign research reactor fuel.

RESPONSE

Volume 1 analyzes the transportation impacts for a reasonable range of alternatives for management of DOE SNF in the continental United States, including the No Action alternative. Decisions regarding the policy on management of FRR SNF are beyond the scope of this EIS. A DOE EIS in preparation, *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel*, (Draft) analyzes the potential for return of FRR SNF to the continental United States.

2.7 Hearings**02.07 (001) Hearings****COMMENT**

Commentors state that DOE did not adequately seek public involvement in the process. Examples given include inadequate availability and comment time for the EIS and too few and insufficient notifications for meetings.

RESPONSE

In accordance with CEQ regulations, a Notice of Opportunity to comment on the preparation of an EIS on DOE *Programmatic SNF Management and Environmental Restoration and Waste Management at INEL* was published in the Federal Register on September 3, 1993. Numerous individuals and organizations sent letters, either asking questions or raising issues related to the EIS. Each of these letters was answered by DOE, with information provided as requested.

An Implementation Plan was prepared and released to the public on October 29, 1993; the amended final version was available on May 9, 1994. DOE published a Notice of Availability in the Federal Register on June 24, 1994, to announce the availability of the Draft EIS. The Draft EIS was offered upon request, was available at 64 public libraries and information locations, was delivered to all who requested it, and was sent to all state and Federal agencies, organizations, and individuals who were believed likely to be interested in the subject. Public comments were solicited and written comments were received from June through September 1994, well in excess of the NEPA requirement. Thirty-three public hearings were held in 20 locations throughout the country, including 4 locations in Idaho, and comments were received at these hearings, through the mail, and through a toll-free telephone line, which accepted comments both orally and by facsimile. Notices of the dates, times, and locations of the public hearings were published in the Federal Register on June 24, 1994. In addition, advertisements were placed in local newspapers prior to the meetings. Numerous additional information briefings were also provided to organizations and individuals. In a special effort to involve communities not previously involved, DOE placed advertisements for the hearings in alternative newspapers, in Spanish-language newspapers and on Spanish-language radio programs, and also had available Spanish-language translators for the meetings in Idaho. DOE conscientiously and thoroughly fulfilled its responsibilities to use available avenues for public awareness and for solicitation of public input during all stages of the EIS. Nevertheless, DOE continues to seek ways to improve public involvement and will use the comments in developing improved public involvement for future EISs.

02.07 (002) Hearings

COMMENT

Commentors requested public hearings in Seattle as a potentially affected site.

RESPONSE

Public hearings were held in Seattle and Bremerton, Washington, on July 26, 1994.

02.07 (004) Hearings

COMMENT

Several commentors described difficulties with registering to make formal comments at the Twin Falls public meeting, and suggest that DOE manipulated the system to limit the number of public comments.

RESPONSE

Standard practice for operating the toll-free telephone lines was to close them at noon the day before a meeting. Prior to the Twin Falls meeting, however, a power outage caused the telephone lines to close the day before the meeting and backup systems failed to bring them back on line. When those maintaining the lines discovered the problem, they decided to keep the lines open until 5:00 p.m., notifying DOE's outreach office and several major stakeholder offices in the Twin Falls area of this time extension. Apparently, several people tried to register during the afternoon and were frustrated when another power outage temporarily disrupted service. This disruption was brief.

Public hearings around the country were scheduled to fall within the 90-day comment period. Four locations in Idaho were used for public hearings. This allowed some people to attend the hearings and provide written or oral comments later in the comment period, either using the toll-free telephone line or by mailing comments. Using this approach, all persons who wanted to comment were given an opportunity to do so, even if they did not do so at public hearings.

02.07 (005) Hearings

COMMENT

The Town of Hilton Head, South Carolina, notes and congratulates DOE on the large effort and expense employed by DOE on its "most thorough" public involvement program.

RESPONSE

The comment is noted.

02.07 (006) Hearings

COMMENT

The commentor questions whether the number of meetings and "plethora" of written information being presented to the public at DOE sites could be consolidated.

RESPONSE

DOE attempts to coordinate and consolidate information presented and meetings scheduled with the public, at both the national and individual site levels. DOE recognizes the need for a balance between underinvolving and overburdening its stakeholders in soliciting input from the public on important

decisions, and must balance that against its legal obligations under the NEPA and other environmental statutes.

02.07 (007) Hearings

COMMENT

Commentors state that the process of adding the Oak Ridge Reservation as a potential spent nuclear fuel management location was flawed.

RESPONSE

On October 22, 1990, DOE published a Notice of Intent in the Federal Register announcing its intent to prepare an EIS addressing environmental restoration and waste management, including spent nuclear fuel management activities, across the entire DOE complex. DOE invited the public to submit written comments on the scope of the EIS, and held 23 scoping meetings across the country, including one at Oak Ridge, Tennessee, on December 11, 1990. Two hundred and thirty-seven comments were received at the Oak Ridge meeting. DOE issued a Draft Implementation Plan in January 1992, reflecting the comments provided. DOE held six regional public workshops on the Draft Implementation Plan and recorded public comments given at these workshops. The Implementation Plan for this EIS, issued in October 1993, addressed the comments received from scoping meetings and regional workshops. DOE conducted four public scoping periods during the evolution of the EIS. In response to public comments raised during the scoping process, DOE undertook a process for identifying possible additional alternative sites. The selection process included and evaluated two additional sites, including the Oak Ridge Reservation. The selection process is summarized in the May 9, 1994, amendment to the EIS Implementation Plan for the *Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Restoration and Waste Management Programs*. DOE believes it conscientiously and thoroughly fulfilled its responsibilities to use available avenues for public awareness and for solicitation of public input during all stages of the EIS process, and that it has fulfilled its obligations and responsibilities in accordance with the NEPA.

02.07 (008) Hearings

COMMENT

The commentor states that insufficient notification was given for the public to become involved in the activities associated with the EIS.

RESPONSE

DOE has an active stakeholder involvement process, which strives to include representatives of all members of the public.

In accordance with CEQ regulations, a Notice of Opportunity was published in the *Federal Register* on September 3, 1993, to comment on preparation of an EIS on DOE programmatic SNF management and SNF management, environmental restoration, waste management at INEL. DOE received numerous letters from individuals and organizations, either asking questions or raising issues related to the EIS. Each of these letters was answered by DOE, with information provided as requested. An Implementation Plan was prepared and released to the public on October 29, 1993; the final version was available on May 4, 1994. A Notice of Availability was published in the *Federal Register* on June 24, 1994, to announce the availability of the Draft EIS. The Draft EIS was offered on request and was available at 64 public libraries and information locations. The Draft EIS was delivered to all who requested it, and was sent to all state and Federal agencies, organizations, and individuals who were believed likely to be interested in the subject. Public comments were solicited and written comments were received from June through September, 1994, well in excess of the NEPA requirement. Thirty-three public hearings were held in 20 locations throughout the country, including 4 locations in Idaho, and comments were received at these hearings, through the mail, and through a toll-free telephone line, which accepted comments both orally and by facsimile. Notice of the dates, times, and locations of the public hearings were published in the *Federal Register* on June 24, 1994. In addition, advertisements were placed in local newspapers prior to the meetings. Numerous additional information briefings were provided to organizations and individuals. In a special effort to involve communities not previously involved, DOE advertised the hearings in alternative newspapers, in Spanish-language newspapers; and on Spanish-language radio shows, and also had available Spanish-language translators for the meetings in Idaho. DOE conscientiously and thoroughly fulfilled its responsibilities to use available avenues for public awareness and for solicitation of public input during all stages of the EIS process. Nevertheless, DOE continues to seek ways to improve the public involvement process and will use the comments in developing improved public involvement plans for future EISs.

02.07 (012) Hearings

COMMENT

A number of commentors state that the public meetings, particularly in Seattle, were held during a weekday when most people were at work, and that the meetings were over controlled and too limited in time.

RESPONSE

DOE held 33 separate meetings in 20 different locations during the 90-day comment period. By logistical necessity, some meetings were in the afternoon some were in the evening. The length of the question and answer sessions varied depending on the level of interest by the local meeting attendees. While some sessions were rather long, provisions were in place, and frequently announced during the

course of the meetings, to take oral comments from any interested citizen at any time the meetings were in session. With this arrangement for oral comment, plus the opportunity to provide comments over a toll-free telephone line and mail in comments, DOE believes all persons who wished to comment were accommodated during the public comment period.

02.07 (013) Hearings

COMMENT

The commentor, who lives in Georgia, wishes to work with DOE in a positive way that is more effective than the public meetings.

RESPONSE

The commentor is referred to the Office External Affairs at (803) 725-2889 at the Savannah River Site.

02.07 (014) Hearings

COMMENT

The commentor hopes that DOE will remember the comments made by elected officials at the Augusta, Georgia, public hearing.

RESPONSE

All written and oral comments received during the public comment process, regardless of origin, were carefully reviewed and considered by DOE in its preparation of the EIS and in its decisionmaking process for identification of a preferred alternative for SNF management.

2.8 Miscellaneous

02.08 (001) Miscellaneous

COMMENT

Commentors note the opinions of or opinions regarding others, the media, various elected officials, or various articles not of DOE or Navy authorship.

RESPONSE

It is inappropriate for DOE to address comments regarding the opinions of non-DOE or non-Navy officials or articles not of DOE or Navy authorship.

02.08 (002) Miscellaneous

COMMENT

Commentors state that some comments were not considered, some comments were ignored, and other comments were given more weight than others in the analysis. Other commentors note that the public

wants direct input into the decisionmaking process and hope that DOE addresses all of the comments.

RESPONSE

All written and oral comments received during the public comment process, regardless of origin, were carefully reviewed and considered by DOE in its preparation of the EIS and in its decisionmaking process for identification of a preferred alternative for SNF management.

02.08 (005) Miscellaneous

COMMENT

The commentor is of the opinion that additional EISs should be prepared for every point-to-point shipment of nuclear waste because of the uniqueness of potential environmental consequences for each shipment.

RESPONSE

Volume I, Appendices D and I analyze in detail the environmental consequences of off-site transportation and cover the impacts of any particular shipment or combination of shipments for any of the alternatives. Therefore, separate EISs for individual shipments covered by the proposed action of this EIS are considered unnecessary. Ongoing activities that are an integral part of the proposed action are included in the overall action, as allowed by NEPA. The cumulative risks predicted from all transportation modes during the 10-year period for shipments of radioactive wastes and the 40-year period for shipments of SNF are analyzed in Volumes 1 and 2, Chapter 5, respectively. Under all proposed alternatives, the risks would be small.

02.08 (006) Miscellaneous

COMMENT

The commentor requests that a separate written comment period be provided after the preferred alternative is selected.

RESPONSE

Under NEPA and its implementing regulations and guidelines, it is permissible to defer the identification of a preferred alternative to the Final EIS. DOE elected to do this after it had an opportunity to consider all public input as a part of its process for identifying a preferred alternative. An additional public comment period would be very time consuming and is not permitted under DOE's very rigorous schedule that arose from an agreement between DOE, the Navy, and the State of Idaho. In addition, NEPA does not require any additional public comment period when a Final EIS is released, unless new alternatives have been proposed that were not previously considered in the Draft EIS. DOE's preferred alternatives are within the range of the alternatives addressed in the Draft EIS. Nevertheless, the ROD will not be issued until after a 30-day waiting period following the issuance of the Final EIS.

02.08 (007) Miscellaneous

COMMENT

The commentor states that the Navy's identification of a preferred alternative for the management of spent nuclear fuel will have more influence on DOE's decision than will public input.

RESPONSE

DOE considered all pertinent information in identifying a preferred alternative.

02.08 (008) Miscellaneous

COMMENT

The commentor suggests that the EIS is based on the assumption that spent fuel must be moved, which then drives the rest of the discussion as to where DOE would like to put its spent fuel.

RESPONSE

Two of the five alternatives described in Volume I, Chapter 3 -- the No Action alternative and the Decentralization alternative -- are based on minimizing the movement of SNF, consistent with the need for safe storage and the existence of adequate storage capacity.

02.08 (009) Miscellaneous

COMMENT

A number of commentors requested that they be placed or kept on the mailing list for subsequent documents to the EIS.

RESPONSE

DOE placed these names on the mailing list.

02.08 (010) Miscellaneous

COMMENT

The commentor suggests that making cost data available after the close of the comment period on the EIS (particularly with regard to the comparison of alternatives) is likely to diminish both the utility of the public comments and the public's confidence in the Record of Decision.

RESPONSE

DOE recognizes that several commentors requested estimated implementation costs for the various alternatives in this EIS. Volume I, section 3.3 was added to this EIS to address this concern. The cost data for this section was extracted from the *SNF Management Cost Evaluation Report (Draft)*, which is not limited to this EIS, but contains information pertinent to other management decisions. The cost evaluation report is available to the public in the EIS reading rooms. The *Assumptions and Methodology*

Document for Spent Nuclear Fuel Cost Evaluation, which was the starting point for developing the cost evaluation report, was released for public review and comments were received.

02.08 (011) Miscellaneous

COMMENT

One commentor asked to meet face to face with DOE officials. When the meeting did not take place, the individual was offended by the DOE "rudeness" and expressed deep concern over DOE's handling of the situation and the apparent lack of concern of DOE officials for the general public.

RESPONSE

DOE regrets that its treatment of this individual was perceived as offensive and rude, given that DOE's intention was to be as responsive as possible. DOE replied with two letters to this individual that explained the details surrounding the situation and expressed regret over the perception that had developed.

All comments, written and oral, received during the public comment period have been carefully reviewed and considered by DOE in its preparation of the EIS and responded to if they were within the scope of the EIS.

02.08 (012) Miscellaneous

COMMENT

The commentor states that all public testimony at Idaho hearings on the reconfiguration EIS and the waste management EIS must be included in the current EIS comments.

RESPONSE

Neither NEPA nor its implementing regulations and guidelines require the inclusion of all public comments in one programmatic EIS from other, even related, programmatic EISs or related activities. Because this EIS considers SNF management, and two other EISs cited by the commentor do not, waiting for, and including those other comments would not only result in a delay that would violate the Court Order, but would take those comments out of context and be confusing.

02.08 (013) Miscellaneous

COMMENT

The commentor states that the failure to identify DOE's proposed action and the alternatives for environmental restoration and waste management at the Idaho National Engineering Laboratory is a fundamental flaw under the National Environmental Policy Act.

RESPONSE

The proposed action is stated in the Volume 1, Chapter 2 and Volume 2, Chapter 1 and are shown in Volume 1, sections 1 and 2 and Volume 2, section 2. Environmental restoration activities will take place under the Federal Facility Agreement and Consent Order for INEL. This document is available to the public.

See also the response to comment 04.02 (001).

02.08 (015) Miscellaneous**COMMENT**

The commentator states that the decision on processing sodium waste might get lost in the spent nuclear fuel issues and not receive adequate public review.

RESPONSE

DOE has already conducted four public scoping periods. Comments from scoping meetings were summarized in DOE's Implementation Plan for this EIS, published October 29, 1993. DOE considered all comments submitted on the Implementation Plan during development of the EIS. DOE solicited comments, of which this is one, from the public on the EIS. DOE has used these comments in the development of the Final EIS. The issues raised by the commentator as issues that might not get adequate public review are described in several places within the EIS. Sodium-bearing waste is discussed in several locations throughout this EIS: (1) Volume 2, section 3.1.3.1 describes the alternatives for managing high-level waste; (2) Table 3.1-5 summarizes the alternatives and illustrates the proposed treatment and disposal of sodium-bearing wastes; and (3) the technology selection for treatment of sodium-bearing and calcine wastes is discussed in Volume 2, Appendix C under "Projects Related to High Level Waste: Waste Immobilization Facility." Reference materials, including extensive technical studies, have been available at the reading rooms and information locations identified in the EIS. While this EIS will be the basis for selecting a technology to be further developed for processing sodium waste and a technology for processing calcine, facilities for implementing the technologies will require additional NEPA documentation as these facilities become more firmly developed. Both the future NEPA actions and the permitting activities allow additional opportunity for public comment. DOE follows NEPA guidelines for public participation and believes that there is sufficient opportunity for the public to comment on issues.

02.08 (016) Miscellaneous**COMMENT**

The commentator challenges DOE to seriously consider the comments and revise the document.

RESPONSE

DOE considered all comments submitted through public hearings or by telephone, facsimile, or mail. DOE examined and responded to each comment, and revised the EIS, as appropriate in response to comments.

02.08 (018) Miscellaneous**COMMENT**

The commentor requests a copy of the responses to comments submitted by the Shoshone-Bannock Tribes and expresses support for their comments.

RESPONSE

Responses to all public comments on the Draft EIS are provided in this Volume of the Final EIS.

02.08 (019) Miscellaneous**COMMENT**

The commentor states that the public is being misled by the National Environmental Policy Act process, in that "things" are going through the private sector unbeknownst to the public.

RESPONSE

This EIS presents the environmental impacts of several reasonable alternatives available for managing of DOE SNF. Implementation of some specific aspects of SNF management may be privatized, such as potential research and development activities; however, there are no discussions under way that in any way prejudice a decision on SNF management or that would be of any interest to the public in commenting on this EIS.

02.08 (020) Miscellaneous**COMMENT**

Commentors suggest that the cost of preparing this EIS was too high.

RESPONSE

Preparation of this EIS is required by the provisions of NEPA. The entire NEPA process, while sometimes costly, is expected to benefit the public because it provides information and the opportunity to be part of DOE's decision-making process. The NEPA process benefits the public and the government by providing the basis for making informed decisions, while minimizing the impact of Federal actions on the environment.

02.08 (021) Miscellaneous

COMMENT

The commentor asserts that DOE failed to consult with the Shoshone-Bannock Tribes' department responsible for air quality during preparation of the EIS, and that DOE must do so prior to completion of the EIS.

RESPONSE

DOE and the Navy consulted on this subject and others with the Tribes during preparation of the Draft and Final EIS. DOE consulted further with the Tribes as part of the process of addressing public comments on the Draft EIS. Discussions included air quality concerns.

02.08 (022) Miscellaneous

COMMENT

The commentor expresses the opinion that DOE halted reprocessing of highly enriched spent nuclear fuel without proper National Environmental Policy Act documentation.

RESPONSE

Historically, DOE produced large numbers of nuclear weapons using material from reprocessed SNF. DOE also used highly enriched uranium recovered from SNF to make new fuel. However, due to a substantial reduction in the need for these recovered materials, DOE, in a memorandum dated April 28, 1992, *Phaseout of Reprocessing*, decided to phase out reprocessing of highly enriched uranium at INEL and SRS. This decision was based on the reduced need for products, and did not require NEPA evaluation. A decision to discontinue an activity because of lack of need did not, by itself, trigger NEPA, because there was no new proposed action. Although a NEPA review was not needed to stop the old mission, a NEPA review would be needed to use the reprocessing facilities for a new purpose (i.e., using recovered uranium for nuclear power production, as suggested by the commentor). DOE has not proposed such a new mission.

02.08 (023) Miscellaneous

COMMENT

The commentor expresses the opinion that the EIS Summary is biased toward the Idaho National Engineering Laboratory, at the expense of other options.

RESPONSE

DOE manages wide-ranging types and a significant quantity of SNF at INEL. Therefore, DOE decided to discuss SNF management across the DOE complex in the same EIS as INEL activities for SNF and waste management and for environmental restoration. The second half of the Summary addresses Volume 2 and is, therefore, devoted to INEL. In the first half, the three DOE sites that have conducted

extensive SNF management activities (INEL, Hanford, and the SRS) plus two additional sites (the ORR and NTS) are evaluated on a common basis. This evaluation is appropriate for a programmatic EIS.

The DOE Operations Office at each of the candidate site participated in preparing a site-specific appendix for the site. The evaluation of SNF alternatives reflects the policy and viewpoint of DOE.

02.08 (024) Miscellaneous

COMMENT

The commentor asks for an explanation of the scientific notation used (e.g., 1.3E-06).

RESPONSE

The notation is computer-based and is a simplified method of writing out the full mathematical notation of a number taken to the appropriate decimal places. In the example above, the actual number is 0.0000013 or 1.3×10 to the minus sixth power (1.3 divided by 1 million). Similarly, 0.13 is 1.3E-01, and 0.013 is 1.3E-02, etc. A brief description of scientific notation was added to the Glossary of both Volumes 1 and 2.

02.08 (025) Miscellaneous

COMMENT

The commentor states that the term "possible unavoidable" adverse impacts, as used in Volume 1, Appendix E, Chapter 6 for the No Action alternative, is a contradiction. The commentor also states that research reactor shutdowns and the resulting losses of jobs are avoidable if sites are required to consider on-site storage of spent nuclear fuel.

RESPONSE

An editorial change was made to the EIS to clarify and change "possible unavoidable" to impacts "that may be unavoidable." Under the No Action alternative, which is a required baseline under the NEPA, additional actions are not considered. For DOE reactors (Volume 1, Appendix E, section 6.1) the Decentralization alternative is the same as the No Action alternative, so such sites would require on-site storage. For non-DOE NRC-licensed domestic research reactors, DOE has title to the SNF and is responsible for interim storage and ultimate disposition of the fuel (Volume 1, Appendix E, section 2.1.2). Except for one minor commercial contributor, facilities with limited existing storage capacity are at universities or government installations (Volume 1, Appendix E, Table 2.1-2).

02.08 (026) Miscellaneous

COMMENT

The commentor states that DOE failed to recognize the special relationship between Indian tribes and the Federal Government during the development of the EIS.

RESPONSE

A number of laws pertain to the treatment of Native American concerns. In particular, the National Historic Preservation Act of 1966 provides for the development of a programmatic agreement among the Federal agencies to comply with the law for large projects. DOE acknowledges in Volumes 1 and 2, Chapter 5 that potential impacts to cultural resources of value to Native Americans, such as sacred or hunting and gathering areas, will be determined in consultation with the affected Native American groups. This is commonly ensured through Memoranda of Agreement involving the groups concerned and other responsible agencies, such as State Historic Preservation Offices. A number of these agreements are being developed or are in place, as described in Volumes 1 and 2, Chapter 5.

Details on the existing resources and the potential impacts associated with the alternatives are in Volume I, Appendices A through F for specific sites. Although the major DOE sites have not been surveyed completely, the locations for the construction of proposed new facilities have generally been evaluated for their cultural importance. No known cultural resources would be affected by construction under any of the alternatives. Potential impacts were assessed by identifying project activities that could affect known or expected resources at each potential site. Because some projects are not yet fully defined, potential impacts cannot be completely characterized. However, for any alternative, DOE would complete detailed preconstruction surveys and would consult with the State Historic Preservation Officer and Native American groups before any undertaking to determine appropriate measures to minimize impacts.

DOE has pursued additional consultation with the affected Native American groups relative to this EIS, and will continue consultations as appropriate.

02.08 (027) Miscellaneous

COMMENT

The commentor notes that the arrows indicating uranium and zircaloy are reversed in the figure on page 5 of the EIS Summary.

RESPONSE

The figure was corrected.

02.08 (029) Miscellaneous

COMMENT

The commentor suggests that Native American concerns are being ignored, and DOE needs to address the concerns of the Shoshone-Bannock Tribes in a separate section because the Shoshone-Bannock Tribes are a sovereign nation with treaty rights to unoccupied lands adjacent to the Idaho National Engineering Laboratory.

RESPONSE

The *Fort Bridger Treaty of 1869* is an agreement between the Eastern Band Shoshone and Bannock Tribes, and the United States. It was signed in 1868 in Utah, and ratified and proclaimed in 1869. Both the United States and the Tribes pledged their honor to keep and maintain a peace. The treaty established fixed boundaries to land that would be considered "set apart for the absolute and undisturbed use and occupation of the Shoshone Indians herein named, and for such other friendly tribes or individual Indians, as from time to time they may be willing...to admit amongst them..." It is undisputed that at one time in the distant past, the Shoshone Indian Tribe was a nomadic nation that roamed over a range of more than 80 million acres that included portions of Wyoming, Colorado, Utah, Idaho, and Nevada. This aboriginal land area may have included land upon which INEL sits, but by signing the *Fort Bridger Treaty of 1869*, the Tribes relinquished rights to all but that area specifically designated in the treaty. As specifically stated in the treaty: "...the territory described in this article for the use of said Indians, and henceforth they will and do hereby relinquish all title, claims, or rights in and to any portion of the territory of the United States, except such as is embraced within the limits aforesaid." This was affirmed by the United States Supreme Court in the case *Northwestern Bands of Shoshone Indians v. United States*, 324 U.S. 333 (1945).

INEL site does not lie within any of the land boundaries established by the *Fort Bridger Treaty of 1869*. Furthermore, the entire INEL site is occupied by DOE, and therefore the provision of the Treaty that allows the Shoshone-Bannock Tribes the right to hunt on the unoccupied lands of the U.S. does not apply to any land upon which INEL sits.

DOE currently manages INEL in a way that does not conflict with any of the provisions of the *Fort Bridger Treaty of 1869*. To the extent that the Tribes' concerns involve consideration of environmental justice, these concerns are addressed in Volume I, Appendix L and Volume 2, section 5.20.

02.08 (030) Miscellaneous

COMMENT

The commentor states that the EIS will be deficient unless DOE carries through with its responsibilities to consult with the Shoshone-Bannock Tribes as it plans future actions, particularly with respect to those actions that could have impacts on the Idaho National Engineering Laboratory, surrounding lands, and the Fort Hall Reservation.

RESPONSE

DOE recognizes the value of consulting with other agencies and with the Tribes when appropriate to understand and address any concerns raised by the agencies or Tribes. DOE recognizes that other agencies and the Tribes possess special expertise in areas related to activities analyzed in this EIS. With respect to the Shoshone-Bannock Tribes, DOE has established a program of meaningful consultation with the Tribes to support future DOE actions and to gain the benefit of special expertise. Meetings are held as necessary with managers or technical experts of both entities to assure that the Tribes' concerns and expertise are used to evaluate proposed activities. DOE continues to work with the Tribes to resolve any associated concerns.

02.08 (032) Miscellaneous

COMMENT

The commentor corrects a reference (typographical error) and requests that another document be referenced.

RESPONSE

The typographical error was corrected. The contract number now reads "AT(04-3)-633." The additional reference is a subtier reference to the *Environmental Assessment for the Retrieval and Restorage of Transuranic Storage Area Waste*, which is referenced in the EIS.

02.08 (033) Miscellaneous

COMMENT

The commentor asserts that sanity and ethics have been left out of this EIS.

RESPONSE

The provisions of NEPA and CEQ regulations require that an EIS consider the effects of the proposed actions on the human environment. This includes an analysis of economic and social effects. Volumes 1 and 2, Chapter 5 both discuss these impacts. In addition, Volume 1, Appendix L, devoted to environmental justice concerns, addresses questions of impacts to the human environment. Public comments were seriously considered in writing the EIS.

02.08 (034) Miscellaneous

COMMENT

The commentor states that the *Waste Management Programmatic EIS* should be available and considered in conjunction with this EIS, and suggests that DOE is sequestering this information.

RESPONSE

Litigation resulted in a very rigorous schedule that required DOE to develop and release this EIS before the *Waste Management Programmatic EIS* is completed. Writers and analysts worked with those developing the *Waste Management Programmatic EIS* to achieve consistency to the extent possible.

02.08 (035) Miscellaneous

COMMENT

The commentor states the EIS was unnecessary because implementation of any alternative would require additional, site-specific EISs. The commentor suggests that a less expensive and simpler cost analysis of alternatives would have been preferable to this EIS.

RESPONSE

NEPA, 42 USC Section 4321 et seq. and the CEQ regulations at 40 CFR 1500 et seq. established standards that DOE followed to prepare a programmatic EIS to identify and evaluate the environmental impacts of the proposed action and reasonable alternatives for SNF management across the entire DOE complex. These regulations require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period, which allowed commentors to send written comments, give oral comments and send facsimile comments over a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States. With regard to analyzing the costs of the alternatives, DOE prepared a cost report, which is available to the public and decisionmakers.

All supporting documents referenced in the EIS are on file and are available to the public. The EIS also considers issues of concern raised during public meetings and hearings.

02.08 (036) Miscellaneous

COMMENT

The commentor states that there was a push to publish this EIS before the cost information was available, and that cost information should be available for the public to review.

RESPONSE

At the time the Draft EIS was published, a cost evaluation had been initiated. In August 1994, DOE issued a report, *Assumptions and Methodology Document for the Spent Nuclear Fuel Management Cost Evaluation*, and requested a 45-day public comment period. Comments were received and incorporated into the cost evaluation report. A summary of the cost report has been added to the EIS in Volume 1, section 3.3.6.

02.08 (037) Miscellaneous

COMMENT

The commentor states that it is difficult to determine impacts of specific actions regarding spent nuclear fuel, particularly those related to shipping Fort St. Vrain fuel.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject. The outline for the document follows guidelines established by the CEQ under NEPA. Because the thrust of a programmatic EIS is different from a site-specific EIS, the information on specific actions does appear in different areas of the document. To adequately summarize the existing environment for all the separate sites included in the EIS without expanding an already large and complex document means descriptions of specific facilities and actions (such as Fort St. Vrain) must be condensed. The EIS is also tiered, with increasing levels of technical detail provided in appendices and supporting references.

A user's guide was provided with the EIS to help readers determine impacts under the various alternatives.

See also the response to comment 02.04 (046).

02.08 (039) Miscellaneous

COMMENT

The commentor states that the EIS is broadly written and that more detailed documentation under the National Environmental Policy Act will be required as the national spent nuclear fuel program is refined.

RESPONSE

DOE acknowledges that additional NEPA reviews may be required to implement decisions based on this EIS.

02.08 (040) Miscellaneous**COMMENT**

The commentor suggests that the activities proposed for the Idaho National Engineering Laboratory are the sort of major Federal actions that require a programmatic EIS.

RESPONSE

SNF management activities that could involve INEL are part of the programmatic analysis in Volume 1. Waste management and environmental restoration projects specific to INEL are described in Volume 2. Cumulative impacts are discussed in Volume 2, section 5.5. Activities analyzed in Volume 2 are not such broad, policy-related decisions that they require programmatic documentation to assist in long-range agency planning.

02.08 (041) Miscellaneous**COMMENT**

The commentor cites a court finding of DOE's reluctance to perform full National Environmental Policy Act analysis in the preparation of an environmental assessment regarding the shipment of Fort St. Vrain nuclear materials to the Idaho National Engineering Laboratory. The commentor additionally questions the independence of DOE's consultant in its finding of no significant impacts because the consultant was directed by DOE to prepare the finding of no significant impact prior to completion of the Environmental Assessment.

RESPONSE

This EIS addresses this and other issues identified by the Court.

02.08 (042) Miscellaneous**COMMENT**

The commentor supports the DOE activities and the hearing process at various locations, supports operations at the Hanford Site, and states the hope that the Idaho National Engineering Laboratory will continue to operate, because its benefit to Idaho, this nation, and the world is invaluable.

RESPONSE

The comments are noted.

02.08 (045) Miscellaneous

COMMENT

The commentor states that DOE and the Department of Defense have a negotiated position with regard to the standards, measures, mission, and funding for which they are responsible.

RESPONSE

The priorities for activities and programs of the Federal Government are determined by Congress and the President, who are the elected representatives of the people. Future funding to support the SNF management program will be established by Congress as part of the annual DOE budget process.

02.08 (046) Miscellaneous

COMMENT

The commentor indicates that whatever it takes in a nonviolent and direct way to "stop the insanity" will be done, as evidenced in the past.

RESPONSE

The comment is noted.

02.08 (047) Miscellaneous

COMMENT

The commentor questions the value of preparing an EIS at considerable cost, versus applying the cost to research and development of alternative energy sources.

RESPONSE

The proposed actions related to research and development of alternative energy sources is outside the scope of this EIS.

02.08 (051) Miscellaneous

COMMENT

The commentor wants more information about the relationships between Volumes 1, 2, and the Idaho National Engineering Laboratory land use plan.

RESPONSE

The Summary, page 39, describes the relationship between Volumes 1 and 2. Volume 2, Table 2.1-1, explains the relationship between this EIS and other applicable National Environmental Policy Act documents. Volume 2, section 5.2 discusses the impacts to and consequences of land uses at INEL. Although there is no single document that describes all of these relationships, Volume 2, section 5.2 was coordinated with and reviewed by those writing *INEL Long-Term Land-Use Future Scenarios* (Draft).

02.08 (052) Miscellaneous

COMMENT

The commentor indicates that the EIS gives a big picture of DOE spent nuclear fuel management operations.

RESPONSE

This EIS is intended to address the national management of DOE SNF.

02.08 (054) Miscellaneous

COMMENT

The commentor expresses the desire that there be interaction with modeling efforts of the *Waste Management Programmatic EIS*.

RESPONSE

Writers and analysts of this EIS worked with those developing the *Waste Management Programmatic EIS* to achieve consistency wherever possible.

02.08 (056) Miscellaneous

COMMENT

The commentor suggests that radioactivity source terms and other input parameters for all sites be pooled in a separate appendix.

RESPONSE

The purpose of Volume I of this EIS is to compare potential environmental impacts for each alternative across the various sites addressed in the volume. The EIS is tiered with respect to the technical depth of information. The Summary is intended to present the information in a manner that would be generally understandable to nontechnical persons. For this reason, the results of each impact analysis are pooled and in the summary to Volume I. The appendices are organized to present more technically detailed information on each site. All of the information requested by the commentor is available in these site appendices or in the references provided therein. Providing additional appendices to summarize detailed technical information on each area of analysis would be duplicative and not in keeping with the purpose and structure of the EIS.

02.08 (057) Miscellaneous

COMMENT

The commentor suggests that DOE could reduce the cost of involving the public in the decision-making process by consolidating meetings and informational materials on several different issues or proposed actions.

RESPONSE

DOE encourages time and cost efficiency by combining meetings of like or related topics whenever possible. However, actions may arise under different environmental laws, and each action has its own set of decisions for public consideration and its own timetable driven by many factors, so that it is frequently not possible to group them together.

NEPA requires public involvement in the process as an essential element in ensuring informed decisionmaking and provides for public involvement at two stages: initial scoping and commenting on the Draft EIS.

When several Federal actions at one site are in progress simultaneously, it is sometimes possible for DOE to combine meetings or to share informational materials to reduce costs. DOE does make resource materials available to all sites to assist in planning more cost effectively for public involvement activities.

02.08 (058) Miscellaneous**COMMENT**

The commentor states that the Final EIS must address the actions required to implement Defense Nuclear Facility Safety Board *Recommendation 94-1*.

RESPONSE

The Defense Nuclear Facilities Safety Board (DNFSB) issued *Recommendation 94-1* on May 26, 1994. DOE accepted this on August 31, 1994, and submitted its Implementation Plan on February 28, 1995. DOE has broadened the original scope of the response to Recommendation 94-1 to include not only the nuclear weapons materials in the manufacturing pipeline, but also bulk liquids and solids containing fissile materials and other radioactive substances from such sources as spent fuel storage pools, reactor basins, reprocessing canyons, processing lines, and various facilities that require modifications to establish safe interim storage conditions.

02.08 (059) Miscellaneous**COMMENT**

The commentor states that the EIS contains extraneous information that goes beyond what is required by the National Environmental Policy Act.

The EIS focuses on alternatives for programmatic SNF management and SNF management, environmental restoration, and waste management at INEL. Although voluminous, DOE believes the EIS presents the public and decisionmakers with the necessary and sufficient information to comment and make informed decisions.

3. POLICY

3.1 Mission

03.01 (001) Mission

COMMENT

Commentors express various opinions related to the costs of DOE programs, funding of such programs, and better uses of the same funding resources and time for the benefit of society as a whole.

Commentors question the nation's ability to afford cleanup of DOE mismanagement. Commentors allude to DOE's inability to keep track of money, or the Federal Government's inability to keep track of unrelated programs, some of which the commentors characterize as secret. One commentor indicates that management of spent nuclear fuel should be a routine task not requiring significant resources.

RESPONSE

DOE recognizes the significant cost of environmental restoration, waste management, and spent nuclear fuel (SNF) management activities, none of which is considered by DOE to be routine or insignificant tasks. Whereas a significant portion of these costs is the result of past management practices that have proven to be unsound, the need for cleanup and the necessary fiscal resources required have been identified. The sources of necessary funds for DOE program elements, the level of appropriation to support such activities, and the associated priorities are essentially determined by Congress and the President through processes that are outside the scope of this EIS. DOE is held accountable for the expenditure of appropriated funds, and undergoes regular oversight by the Office of Management and Budget and the General Accounting Office. This EIS addresses the environmental impacts, and the needs and purpose for national management of DOE SNF, and environmental restoration and waste management activities at the Idaho National Engineering Laboratory (INEL) only. The estimated costs of the programmatic management of SNF under each alternative have been made available to decisionmakers and the public in the *Spent Nuclear Fuel Management Cost Evaluation Report (Draft)*, which was prepared independently of this EIS. This report is available in the reading rooms and information locations listed in the EIS.

03.01 (002) Mission

COMMENT

The commentor asks DOE how it can help Americans achieve a higher quality of life through research and new technology development and what kind of legacy do we want to leave succeeding generations of Americans. The commentor expresses the opinion that it is necessary to support the constructive use of technology to improve the quality of human life.

RESPONSE

Although the general topic of technology development is not within the scope of this EIS, DOE emphasizes ongoing programs for technology development and transfer of these technologies developed at its sites to the private sector for constructive and safe use. Over the period of interim SNF management, technology development will likely occur.

03.01 (003) Mission**COMMENT**

The commentor questions whether DOE and INEL are undergoing an identity crisis as to their collective missions and asks if INEL's mission can be refocused to continue contributing value to the American people. In addition, the commentor asks how this fits with the issues in the EIS.

RESPONSE

Volume 2, section 2.2.3 states that the current mission of INEL is to develop, demonstrate, and deploy advanced engineering technology and systems to improve national competitiveness and security, to make the production and use of energy more efficient, and to improve the quality of life and the environment. Specific activities at INEL have shifted over time to meet changing national needs. These shifts have included changing from the application of nuclear power to commercial uses, SNF reprocessing and waste storage, to the current emphasis on science and technology related to advancing and improving remediation and waste management at INEL and applying the knowledge gained at INEL to other national needs.

The purpose of this EIS is to determine the manner in which DOE will manage its SNF for up to 40 years pending ultimate disposition.

03.01 (004) Mission**COMMENT**

The commentor expresses the opinion that there is more effort to build up the Idaho National Engineering Laboratory and add new technology than there is to fulfill promises of cleanup and restoration.

RESPONSE

The environmental restoration program at INEL is specifically discussed in Volume 2, sections 2.2.6 and 7.2.5. DOE, the Environmental Protection Agency (EPA) Region X, and the State of Idaho signed an agreement, the INEL Federal Facility Agreement/Consent Order (FFA/CO), on December 4, 1991, for cleanup activities at INEL. The INEL FFA/CO established the procedural framework and schedule for developing, prioritizing, implementing, and monitoring appropriate response actions in accordance with

the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and the Idaho Hazardous Waste Management Act.

The current INEL mission is to develop, demonstrate, and deploy advanced engineering technology and systems to improve national competitiveness and security, to make the production and use of energy more efficient, and to improve the quality of life and the environment. Areas of primary emphasis at INEL include waste management and minimization, environmental engineering and restoration, energy efficiency, renewable energy, national security and defense, nuclear technologies, and advanced technology and methods. The Environmental Restoration and Waste Management Program is a top priority at INEL.

03.01 (005) Mission

COMMENT

The commentor states that DOE has a hidden agenda, which is to build new nuclear weapons production facilities under the guise of waste processing.

RESPONSE

The purpose of this EIS is to provide a basis for making decisions on options for programmatic approaches for SNF management and site-specific approaches regarding the future direction of environmental restoration and waste management and SNF programs at INEL. The EIS was prepared consistent with this purpose, and DOE has no hidden agenda associated with the management of SNF.

03.01 (008) Mission

COMMENT

The commentor expresses the opinions that the Idaho National Engineering Laboratory mission statement is not credible, and that the Idaho National Engineering Laboratory mission is for defense-related, rather than peaceful, uses of nuclear energy.

RESPONSE

As discussed in Volume 2, section 2.2.3, the current INEL mission is to develop, demonstrate, and deploy advanced engineering technology and systems to improve national competitiveness and security, to make the production and use of energy more efficient, and to improve the quality of life and the environment. Specific activities at INEL have shifted over time to meet changing national needs. These shifts have included changing from the application of nuclear power to commercial uses, to SNF reprocessing and waste storage, to the current emphasis on science and technology related to advancing and improving remediation and waste management at INEL and applying the knowledge gained at INEL to other national needs. DOE does not agree that this is talking about war energy.

The public's trust in DOE has eroded, and it will take great effort and some amount of time to regain that trust. DOE is addressing many of the problems associated with its loss of public trust. The Secretary of Energy publicly affirmed that current DOE policy and practice emphasizes safety and environmental considerations above other program goals. DOE is formally committed to protecting the safety and health of its workers, the public, and the environment. DOE is working as quickly as possible to rectify and eliminate adverse environmental impacts from past programs. The commentor should also be aware that a DOE complex-wide Environmental Management Site-Specific Advisory Board has been chartered under the Federal Advisory Committee Act. The Environmental Management Site-Specific Advisory Board consists of independent citizens tasked with advising DOE on local and national policy issues. In addition, aggressive public outreach and stakeholder initiatives are being implemented to keep the public well informed of DOE activities.

03.01 (009) Mission

COMMENT

The commentor expresses the opinion that the Department of Defense should manage nuclear work and the DOE should manage the "Energy War." The commentor states that references to Navy nuclear waste are classified and should be removed from the EIS.

RESPONSE

The information contained in this EIS is not classified. The missions of the Department of Defense and DOE are defined by Congress and the President.

03.01 (014) Mission

COMMENT

The commentor states that DOE should take advantage of the scientific and engineering expertise at the Idaho National Engineering Laboratory to generate technological breakthroughs in waste management and cleanup.

RESPONSE

Volume 2, section 2.2.3 states that the current INEL mission is to develop, demonstrate, and deploy advanced engineering technology and systems to improve national competitiveness and security, to make the production and use of energy more efficient, and to improve the quality of life and the environment. Areas of primary emphasis at INEL include waste management and minimization, environmental engineering and restoration, energy efficiency, renewable energy, national security and defense, nuclear technologies, and advanced technology and methods. The Environmental Restoration and Waste Management Program is a top priority at INEL.

3.2 Authority and Responsibility

03.02 (001) Authority and Responsibility

COMMENT

The commentor asserts that the Navy and DOE are playing a bureaucratic game of not being responsible. The commentor further states that while DOE carries out the policies of Congress, it is time to establish a comprehensive national policy that avoids interagency indecision and confusion.

RESPONSE

DOE is responsible for managing U.S. Government-owned SNF. The Naval Nuclear Propulsion Program is a joint Navy and DOE program responsible by law for all matters pertaining to Naval nuclear propulsion; therefore, Naval SNF is also DOE's responsibility. DOE, as directed by Congress in the Nuclear Waste Policy Act of 1982, as amended, is committed to developing Federal geologic repositories for permanent isolation of these materials. Pending availability of such disposal options, DOE must provide safe and environmentally sound storage and management of these materials.

03.02 (002) Authority and Responsibility

COMMENT

The commentor refers to the sale of surplus reprocessing equipment to a scrap-metal dealer.

RESPONSE

This administrative issue is beyond the scope of this EIS. As a result of the event to which the commentor refers, DOE is evaluating its surplus material policies.

03.02 (003) Authority and Responsibility

COMMENT

The commentor discusses the issue of the cooperative effort between DOE and the Navy on preparing this EIS and identifies the need for DOE to take the lead.

RESPONSE

DOE is the lead agency and has the lead role for preparing this EIS. The Navy participated as a cooperating agency for several reasons. First, under the Council on Environmental Quality (CEQ) regulations (40 CFR 1501.6) Cooperating Agencies, the CEQ emphasizes the need for agency cooperation in the National Environmental Policy Act (NEPA) process. Thus, any other Federal agency that has special expertise with respect to any environmental issue, if requested by the lead agency, may be a cooperating agency.

The Navy has gained extensive expertise during nearly 40 years of Naval SNF operations. This expertise is valuable in assessing the impacts of the proposed alternatives. In addition, there is a special relationship between DOE and the Navy, because the Naval Nuclear Propulsion Program is a joint Navy and DOE program responsible by law for the nuclear propulsion plants aboard nuclear-powered warships, as well as for the Naval reactor fuel at INEL.

3.3 Credibility

03.03 (002) Credibility

COMMENT

A number of commentors express a general lack of trust in DOE based on its record of past mistakes, such as at the Waste Experimental Reduction Facility. They recommend that DOE and the Navy take action to establish public trust, and recommend that the EIS be more specific about what will happen and when under each alternative.

RESPONSE

In response to the lack of trust expressed by the public, the Secretary of Energy places great emphasis on openness and public involvement. The Secretary's July 29, 1994, *Guidance on Implementation of the Department's Public Participation Policy* states, "The business of the Department must be open to the full view of those whom it serves, consistent with applicable laws, regulations, and contracts. This policy marks a clear break with past practice by challenging the Department and its contractors to perform to a new standard of openness and service. The Department will incorporate public input into its decisions where appropriate and feasible and will provide feedback to the public on its reasoning." Public involvement for this EIS included numerous public scoping meetings and public hearings in 20 locations. DOE is increasing the number of forums for information exchange in addition to opportunities for public involvement required by NEPA and other laws. Many DOE sites, including INEL, have established citizens advisory boards to review and provide advice on DOE policies and proposals.

DOE accepts responsibility for solving the problems associated with management of waste and spent nuclear fuel. Lessons learned from past waste management practices and the knowledge gained from research and development programs are incorporated into new management programs.

In many cases, it is not possible to be specific about what will happen and when. Volume I of the EIS is intended to provide the public and decisionmakers with a programmatic, rather than project-specific, view of the proposed actions and alternatives. Alternatives in Volume I will be implemented over a period of 20 years, depending on the alternative chosen. Volume 2 is a site-specific assessment of SNF

management, environmental restoration, and waste management alternatives at INEL. In general, alternatives in Volume 2 will be implemented over 10 years. More detail about these specific projects is in the project summaries in Volume 2, Appendix C.

Volume 1, section 5.1.1 summarizes the impacts from waste management activities associated with the action alternatives, and the site-specific details are discussed in Volume 1, Appendices A through F. Waste Experimental Reduction Facility operations were suspended in February 1991 to upgrade safety documentation, operating procedures, and management systems. These upgrades were mandated when DOE adopted a new Order for operation of nonreactor facilities, DOE Order 5480.23, *Nuclear Safety Analysis Reports*. These upgrades have been completed. This facility must pass a DOE operational readiness evaluation before operations will be resumed. Operational readiness evaluations are reviewed by entities such as the State of Idaho and the Defense Nuclear Facility Safety Board. Incineration of combustible radioactive materials would take place under the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives, but not the No Action and Minimum Treatment, Storage, and Disposal alternatives. Stack emissions under the Ten-Year Plan and the Maximum Treatment, Storage, and Disposal alternatives would be monitored continuously by radiation sensors to avoid total reliance on high-efficiency particulate air filters.

03.03 (005) Credibility

COMMENT

The commentor states that DOE should have foreseen the problems with management of nuclear waste long ago, before there were any problems.

RESPONSE

The Secretary of Energy has publicly affirmed that current DOE policy and practice emphasizes safety and environmental considerations above other program goals. DOE is formally committed to protecting the safety and health of its workers, the public, and the environment. Furthermore, DOE intends to design, construct, and operate facilities in a safe manner, relying on lessons learned from the last 40 years of SNF management. DOE is working as quickly as possible to rectify and eliminate adverse environmental impacts from past programs.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

03.03 (008) Credibility

COMMENT

Commentors express a lack of trust in DOE based on past lies, misinformation, secrecy, lack of reliable documentation and recordkeeping, the conduct of nuclear experiments on humans, dishonesty, and a lack of ethics and regard for human health and the environment. Although the openness of the Secretary of Energy is appreciated, one commentor states that today will someday be the past as well. A commentor also expresses the opinion that DOE has not been responsive to public concerns and has usurped the rights of the people.

RESPONSE

DOE is addressing many of the problems associated with public confidence in its operations. The following are a few examples of DOE's corrective actions. The Secretary of Energy has publicly affirmed that current DOE policy and practice emphasizes safety and environmental considerations above other program goals. DOE is committed to protecting the safety and health of its workers, the public, and the environment. DOE is working to rectify and eliminate adverse environmental impacts as a result of past practices. A DOE Environmental Management Advisory Board has been chartered under the Federal Advisory Committee Act. The Environmental Management Advisory Board consists of citizens tasked with advising DOE on local and national policy issues. In addition, aggressive public outreach and stakeholder initiatives are being implemented to keep the public well informed of DOE activities.

Decisions regarding the programmatic management of DOE's SNF over the next 40 years in the United States will be made by the Secretary of Energy based largely on the analysis in this EIS. An integral part of this process is the presentation of the EIS to the public to solicit comments on its contents. DOE has engaged in a substantial effort to obtain information from the public, including 33 public meetings at 20 locations and an extended comment period. All persons and organizations had an open opportunity to request information from DOE and to provide comments during both the scoping process and public comment period. The comments received by DOE were given serious consideration where they were pertinent to the EIS or the related actions under consideration. Public comments were considered along with programmatic factors in arriving at DOE's preferred alternative. DOE is evolving toward greater openness, as demonstrated by the recent releases of information regarding past programs and practices.

See also the response to comment 08.03.01 (005).

03.03 (012) Credibility

COMMENT

The commentor expresses the opinion that DOE has a disregard for human health and safety, as do the Russians.

RESPONSE

No significant environmental impacts have been identified for any of the alternatives identified in the EIS for managing SNF. Additionally, the Secretary of Energy has publicly affirmed that current DOE policy and practice emphasizes safety and environmental considerations above other program goals. DOE is formally committed to protecting the safety and health of its workers, the public, and the environment. DOE is working to remediate and eliminate adverse environmental impacts from past programs. Concerns over alleged mishaps in Russia are beyond the scope of this EIS.

03.03 (013) Credibility

COMMENT

The commentor is apprehensive about spent nuclear fuel storage at the Hanford Site because of past DOE practices.

RESPONSE

Impact analyses associated with managing SNF show that effects on human health or the environment would be small for all of the alternatives considered. The potential impacts due to operations or hypothetical accident conditions for management of SNF present little risk for all of the alternatives considered.

3.4 Legal/Regulatory

03.04 (001) Legal/Regulatory

COMMENT

The commentor requests inclusion of the Washington Model Toxics Control Act in the Volume 1, Appendix A, section 2.2.1 list of significant Federal and state laws.

RESPONSE

The Washington Model Toxics Control Act applies to the Hanford Site mainly as a source of applicable or relevant and appropriate requirements under CERCLA. The Washington Model Toxics Act has been added to the list in Volume 1, Appendix A, section 2.2.1.

03.04 (002) Legal/Regulatory

COMMENT

The commentor asks to have the current radiation safety standards included in the EIS.

RESPONSE

DOE Orders 5480.11 and 5400.5, *Radiation Protection for Occupational Workers and Radiation Protection of the Public and the Environment*, which cover radiation protection of occupational workers and radiation protection of the public and the environment, respectively, provide the standards and requirements for DOE operations. These Orders are listed in Volumes 1 and 2, section 7.2.

03.04 (003) Legal/Regulatory

COMMENT

The commentor suggests that compliance with the Federal Facilities Agreement/Consent Order should not be linked with the continued acceptance of spent nuclear fuel.

RESPONSE

There is no link between compliance with the INEL FFA/CO and the receipt of additional SNF. The No Action alternative, required under NEPA, provides a baseline, minimal activity level for comparison with other alternatives. This baseline does not consider the need to comply with regulations. The No Action alternative analyzed in Volume 2 assumes that the conditions required to remain in compliance with the INEL FFA/CO will not be met because those conditions constitute more than the minimal activity allowed under the alternative. Likewise, SNF will not be received under this alternative because receiving additional SNF would be above the minimal activity allowed by the alternative. The two activities, therefore, are consequences of the alternative, and one is not conditional on the other.

03.04 (004) Legal/Regulatory

COMMENT

The commentor suggests that the EIS does not adequately address applicability of the Resource Conservation and Recovery Act to management of spent nuclear fuel, and that the commentor will review this issue closely when the Final EIS is published.

RESPONSE

DOE discusses RCRA in Volume 1, section 7.1 and Volume 2, section 7.2. In addition, the issue of applicability of RCRA to some DOE SNF is discussed in Volume 1, section 7.2.5. DOE is aware of its responsibilities under RCRA for conducting its waste management activities. Historically, DOE chemically reprocessed SNF to recover valuable products and fissionable materials. The SNF was considered a feed material for this recovery process and was not considered a waste under RCRA. Some of the materials resulting from reprocessing are considered hazardous wastes under RCRA and are

managed as such. However, because of world events, DOE is phasing out reprocessing for the recovery of SNF. Therefore, there is some uncertainty with regard to the regulatory status of some of DOE's SNF relative to RCRA. DOE has initiated discussions with EPA on potential applicability of RCRA to SNF.

03.04 (005) Legal/Regulatory

COMMENT

The commentor requests that reference to the Tri-Party Agreement milestones be added to Volume 1, Appendix A.

RESPONSE

The Tri-Party Agreement is discussed in Volume 1, Appendix A, section 2.2 as well as other appropriate sections. Adding it as a reference would not provide any further clarification or aid the decision-making process, as compliance with the Tri-Party Agreement is independent of the alternative selected.

Additional information has been provided in Volume 1, Appendix A reflecting the fourth amendment (January 1994) of the Tri-Party Agreement. Applicable SNF milestones are provided in Volume 1, Appendix A, section 3.1.1, Table 3.3.

03.04 (006) Legal/Regulatory

COMMENT

The commentor states that in the case of the Hanford Site, the No Action alternative should state "DOE would not be able to fulfill agreements with states or other Federal agencies" rather than "DOE might not... "

RESPONSE

Volume 1, Chapter 3 has been changed to respond to this comment.

03.04 (007) Legal/Regulatory

COMMENT

The commentor expresses the opinion that importing the foreign fuel through U.S. ports of entry, most of which are large cities, violates the National Defense Authorization Act. The commentor states that this act envisions the selection of a port of entry to minimize the risk to the human population.

RESPONSE

Management of foreign research reactor (FRR) SNF is addressed in Volume 1 for consideration in assessments of cumulative SNF management impacts. However, whether the United States decides to accept this SNF and which ports would be used are matters being addressed in a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft) (FRR EIS), as announced in Volume 58 of the *Federal Register*, pages 54336

through 54340. The FRR EIS may select the ports of entry in accordance with all laws and regulations, including the National Defense Authorization Act, as appropriate. Alternatives for DOE's policy on FRR SNF management are being analyzed in the FRR EIS, including alternatives regarding transportation from the ports of entry.

03.04 (008) Legal/Regulatory

COMMENT

Commentors ask which laws and regulations DOE must observe to operate interim spent nuclear fuel storage facilities. Commentors specifically question whether Nuclear Regulatory Commission regulations will apply to the centralized storage facility. Additionally, commentors suggest that the EIS mention that certain DOE Orders are being codified, and that they are applicable.

RESPONSE

The Federal and state laws that DOE believes are potentially applicable to the various proposed activities are identified in Volume 1, section 7.2 and Volume 2, section 7.2. Former DOE Orders that have been codified into regulations are included. More detailed discussions of relevant state and Federal regulations are provided in Volume 1, Appendices A through F.

DOE believes that, although Nuclear Regulatory Commission (NRC) regulations do not at this time apply to storage facilities for noncommercial fuel, such standards should be considered in DOE's interim storage planning to ensure that any needed treatment for interim storage is compatible with ultimate disposition.

03.04 (009) Legal/Regulatory

COMMENT

The commentor wants to know why DOE is exempt from state taxes.

RESPONSE

DOE, like all Federal Government agencies, is exempt from state taxes because of sovereign immunity granted to the Federal Government by the U.S. Constitution. Although DOE is exempt from state taxes, sales and use taxes are paid on all construction materials, supplies, and associated equipment used by contractors.

03.04 (010) Legal/Regulatory

COMMENT

Commentors state that DOE should not be self regulated; rather, there should be independent oversight of DOE, Navy, and Nuclear Regulatory Commission activities pursuant to Executive Order No. 12344,

Naval Nuclear Propulsion Program, with the Occupational Safety and Health Administration and Environmental Protection Agency empowered to penalize or shut down DOE operations that violate public health standards. Additionally, commentors ask that medical information be declassified.

RESPONSE

The Atomic Energy Act gives DOE the authority to regulate SNF, but like other Federal agencies, DOE is subject to regulation by EPA and state agencies that have been granted primacy by EPA. By granting primacy, a Federal agency allows a state agency to enforce state regulations that cover the same area of responsibility as the Federal regulations. The state agency must, in general, demonstrate to the Federal agency that its regulations are at least as restrictive as the Federal regulations and that it has the resources to manage its enforcement program. DOE facilities, therefore, face the same penalties for noncompliance with EPA and equivalent state agency regulations as any private facilities, including the potential for fines and facility shutdowns. DOE sites have Site-Specific Advisory Boards consisting of independent citizens who advise DOE on local and national policy issues and provide recommendations on proposed site-specific activities. Additionally, DOE is overseen by the Defense Nuclear Facilities Safety Board, as prescribed by Section 318 of the Atomic Energy Act.

Executive Order 12344, *Naval Nuclear Propulsion Program*, enacted as Public Law 98-525, prescribes the authority and responsibility of the Naval Nuclear Propulsion Program, including all environmental and occupational safety and health aspects of the program. Such activities are also subject to independent regulatory review as discussed above for DOE.

Although the activities cited by the commentor are exempt from the standards promulgated by the Occupational Safety and Health Act (OSHA), DOE maintains an occupational safety and health program, which the Secretary of Labor has deemed to be comparable to the OSHA program. This program is implemented through a series of DOE Orders and applies to both DOE and contractor operations.

DOE is assessing the potential impacts to the interim SNF management program of NRC jurisdiction over the geologic repository being developed by the Office of Civilian Radioactive Waste Management and the potential impacts of future NRC oversight of its activities, as discussed in Volume 1, section 3.3.7. Additionally, in late 1994, DOE formed a task force to evaluate whether DOE operations should come under the jurisdiction of NRC or OSHA. The evaluation is still in progress.

To the extent that disclosure of medical records does not violate the privacy of individuals, DOE intends to continue its review and disclosure of medical records. The President has launched an initiative to

discover, declassify, and make available to the public information relating to human radiation experiments. DOE is participating fully in this initiative.

03.04 (011) Legal/Regulatory

COMMENT

Commentors question the adequacy of the Nuclear Regulatory Commission and the Environmental Protection Agency regulatory standards and state that these agencies may not be any more trustworthy than DOE.

RESPONSE

Federal agencies, including NRC, EPA, and DOE, have public processes by which they propose and approve regulations, pursuant to the Administration Procedures Act. These processes present the technical and other justifications for proposed regulations and allow the public, including other agencies, an opportunity to comment and to provide evidence to support or refute the agency's justifications.

03.04 (012) Legal/Regulatory

COMMENT

The commentor indicates that DOE Orders can change, thereby changing requirements, etc., for the EIS (e.g., dose restrictions).

RESPONSE

Volume 1, section 7.2 and Volume 2, section 7.2 of the EIS discuss the major Federal statutes that impose environmental protection and compliance requirements on DOE. These sections include a discussion of DOE Orders related to environmental, health, and safety protection. Through the authority of the Atomic Energy Act, DOE is responsible for establishing a comprehensive health, safety, and environmental protection program for its facilities. The regulatory mechanisms through which DOE manages its facilities are the promulgation of regulations and the issuance of DOE Orders. DOE Orders generally set forth policies and the programs and internal responsibilities for implementing those policies. DOE Orders are subject to change as situations, requirements, conditions, and statutes change. DOE Orders are not changed without a thorough evaluation of the issues and impacts associated with the Order.

03.04 (013) Legal/Regulatory

COMMENT

The commentor opposes DOE committing to meet Nuclear Regulatory Commission requirements for interim storage options or the Department of Transportation requirements for interim storage facilities or other activities. In addition, for spent nuclear fuel transportation, the commentor states DOE should not

attempt to impose transportation requirements above and beyond those required by the Department of Transportation or the Nuclear Regulatory Commission.

RESPONSE

In Volume 1, section 3.3.7, DOE discusses the possibility of having interim storage facility designs reviewed for compliance with NRC licensing standards, even though DOE is not regulated by NRC. Also, DOE considers Department of Transportation regulations, even in instances where they do not strictly apply. In these cases, as with all regulations, DOE looks to other agencies for guidance in areas where the other agencies have expertise or experience. DOE believes that this results in reduced costs and impacts for conducting an activity. At times, however, the unique characteristics of DOE activities require different requirements than provided by external regulations and guidance to ensure that the same level of performance and safety is achieved.

03.04 (014) Legal/Regulatory

COMMENT

Commentors state that DOE must identify in the EIS, and obey, all state and Federal laws and regulations. Specifically, the laws and regulations of the States of New York and Washington, the City of Seattle, and those associated with the West Valley Demonstration Project should be identified.

RESPONSE

DOE is committed to operating its SNF management program in compliance with all applicable laws, regulations, Executive Orders, DOE Orders, and permits and compliance agreements with regulatory agencies. This commitment is independent of the regulations and laws identified in the EIS. Volumes 1 and 2, section 7.2 identify the laws and regulations that are appropriate and applicable to the activities proposed in this EIS. The DOE regulations that implement NEPA require consultation with other agencies, when appropriate, to incorporate any relevant requirements.

The alternative selected will be implemented within existing laws and DOE's legal obligation under its November 1986 agreement with the New York State Energy Research and Development Authority (NYSERDA), *Agreement Between NYSERDA and DOE on the U.S. Department of Energy Spent Nuclear Fuel Located at the Western New York Nuclear Service Center*. Negotiations are currently under way between DOE and NYSERDA, per section 8(c) of their November 1986 agreement, regarding extension of the date for removal of the SNF from West Valley. A decision regarding removal of the SNF from West Valley depends on the Record of Decision (ROD) for this EIS.

See also the response to comment 02.01 (024).

03.04 (017) Legal/Regulatory

COMMENT

The commentor states that the fear of liability has so haunted the U.S. nuclear weapons establishment that contractors and the Atomic Energy Commission demanded and got complete immunity from liability, even for gross negligence or violation of contract.

RESPONSE

The commentor confuses immunity with indemnity. The Price Anderson Act provides for indemnification by DOE for liabilities that may arise from a nuclear incident as a result of activities undertaken by DOE's contractors. This means that if a nuclear incident were to occur, such as a release of radioactive materials from a facility, and damages were incurred as a result of the incident, DOE would indemnify its contractors from liability. In other words, DOE would take responsibility for ensuring that such damages were appropriately compensated under the liability scheme of the Price Anderson Act. In addition, the Price Anderson Act Amendments of 1988 subject indemnified contractors to civil and criminal sanctions if they violate any applicable nuclear safety requirements at any facility under the contractor's control.

03.04 (018) Legal/Regulatory

COMMENT

Commentors express the opinion that DOE's past performance in the areas of management and oversight calls into question DOE's claims of regulatory compliance, management oversight, and cost effectiveness. Commentors note that these are the responsibility of DOE, not its contractors.

RESPONSE

It is DOE policy to operate its facilities in compliance with regulatory requirements. DOE faces essentially the same penalties as private industry for violations. DOE has programs for management oversight and is subject to oversight by the Defense Nuclear Facilities Safety Board, which is an independent Federal oversight organization, EPA, and state requirements. DOE operations contractors are required to comply with DOE Orders, and contractor performance is monitored by DOE. The major DOE Orders pertaining to the construction and operation of SNF management facilities within the DOE complex are listed in Volume 1, Table 7-1 of the EIS.

03.04 (019) Legal/Regulatory

COMMENT

The commentor asks for an assessment of proposed regulations on the use and expansion of the Idaho National Engineering Laboratory Radioactive Waste Management Complex. The commentor specifically mentions the Resource Conservation and Recovery Act Reauthorization. The commentor

further alleges that DOE has mismanaged Idaho National Engineering Laboratory radioactive wastes, because current practices do not comply with Resource Conservation and Recovery Act Subtitle D or C requirements.

RESPONSE

DOE has not evaluated potential environmental impacts based on proposed statutory modifications to RCRA. However, when reauthorization is complete, DOE will review and evaluate the consequences of the statutory changes on current operations. DOE is currently disposing of low-level radioactive wastes at the INEL Radioactive Waste Management Complex in accordance with DOE Orders and other applicable requirements. These low-level wastes do not fall within the definition of RCRA solid or hazardous waste, and thus are not subject to regulation under RCRA. All wastes are disposed of in a manner that ensures protection of human health and the environment.

03.04 (021) Legal/Regulatory

COMMENT

The commentor refers to pending legislation to give local communities greater authority in regulating and inspecting nuclear waste shipments.

RESPONSE

This is a matter appropriately addressed by Congress.

03.04 (022) Legal/Regulatory

COMMENT

The commentor notes that in the Volume 1, Chapter 7 discussion of the Safe Drinking Water Act, there is a correct citation for the beta dose limit, but that corresponding citations for gamma emissions and alpha-emitting radionuclide concentrations are lacking and should be added. Additionally, the commentor notes that Chapter 7 discusses the current U.S. Environmental Protection Agency regulations, while in Chapter 4, the text compares levels with proposed regulations. The commentor suggests that the EIS acknowledge the discussion of two different sets of regulations.

RESPONSE

DOE made appropriate changes to Volume I, Chapter 7 to explain the two regulations and add references to limits for gamma- and alpha-emitting radionuclides, as suggested. Proposed rules regulating radioactive materials' maximum contaminant levels were published July 18, 1991. To date, those proposed EPA rules have not become final. For this analysis, however, the more conservative proposed standards were used.

3.4.1 Compliance with the Court Order

03.04.01 (001) Compliance with the Court Order

COMMENT

The commentor questions the motives of DOE and the Navy, suggesting that without a lawsuit by the people of Idaho, these agencies would have acted without public input on the EIS.

RESPONSE

DOE was in the process of preparing a site-wide EIS on the environmental restoration and waste management (ER&WM) programs at INEL and a programmatic EIS on ER&WM, including SNF, prior to the lawsuit. As a result of the lawsuit, the EIS that analyzed SNF activities was redirected.

03.04.01 (002) Compliance with the Court Order

COMMENT

Commentors state that the court decision *Public Service Co. of Colorado v. Andrus*, 825 F. Supp. 1483 (D. Idaho 1993) involving the shipment of spent nuclear fuel from the Fort St. Vain Nuclear Generating Station in Colorado to the Idaho National Engineering Laboratory was right and good for the people of Idaho. Further, commentors state that the EIS does not address everything that DOE was directed by the Court Order to address.

RESPONSE

DOE believes this EIS is complete and accurately reflects the potential environmental impacts of a reasonable range of alternatives.

03.04.01 (004) Compliance with the Court Order

COMMENT

The commentor states that the EIS does not assess the effects of shipping and storing nuclear waste at the Idaho National Engineering Laboratory, as ordered in 1993.

RESPONSE

Volume 2, Chapter 5 assesses the environmental consequences of the various alternatives, which are described in Volume 2, Chapter 3. These alternatives cover a spectrum of the shipping and storing options for SNF management at INEL.

03.04.01 (005) Compliance with the Court Order

COMMENT

The commentor cites a court finding of NEPA violations by DOE and "that DOE has not met its burden of showing that there is no reasonable expectation that National Environmental Policy Act (NEPA) violations will not reoccur . . ."

RESPONSE

As a result of the Court's finding and other programmatic issues, DOE prepared this EIS, which examines the environmental impacts of receiving, transporting, storing, and managing SNF. DOE believes that this EIS meets the requirements of NEPA and the Court Order.

03.04.01 (007) Compliance with the Court Order

COMMENT

The commentor does not consider the EIS as meeting the intent of the Court Order or the National Environmental Policy Act for the preparation of a comprehensive site-wide EIS addressing transporting, receiving, processing, and storing spent nuclear fuel at the Idaho National Engineering Laboratory.

RESPONSE

DOE has met the requirements of the Court Order in Volume 2 of the EIS, which includes the management of SNF at INEL under all alternatives considered, and in Volume 1, which addresses programmatic management of SNF. To comply with the part of the Court Order evaluating the management of SNF at a site other than INEL, DOE coupled the reviews in the EIS. Thereby DOE integrated evaluation of the overall SNF management picture with the site-specific considerations for INEL.

DOE believes that this EIS meets the requirements of NEPA and the Court Order.

3.5 Government Policy

03.05 (002) Government Policy

COMMENT

Some commentors question the wisdom and ethics of storing nuclear wastes and spent nuclear fuel over aquifers, near inhabited areas, near seismically active areas, and near environmentally sensitive areas where there are risks to natural resources and the public.

RESPONSE

Volume 1, Chapters 3 and 5 and site-specific Appendices A through F, and Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment over a range of large to small

accidents. Volumes 1 and 2, Chapter 5, state that the potential environmental impacts of all alternatives would be small.

Relative to the potential impacts on the Snake River Plain aquifer, a maximum reasonably foreseeable accident associated with the high-level waste tanks was performed for the EIS, as reported in Volume 2, section 5.1.4. A more detailed description of the assessment is given in *Accident Assessments for Idaho National Engineering Laboratory Facilities*. The analysis assumed a seismic event of sufficient magnitude to cause one or more tanks to fail and 300,000 gallons of high-level waste to be released to the soils beneath the tank farm. Modeling of migration of contaminants into the aquifer showed that even without any mitigation measures, the maximum concentration of radionuclides at the nearest site boundary would be within the requirements of safe drinking water standards.

03.05 (003) Government Policy

COMMENT

The commentor urges DOE to manage spent nuclear fuel responsibly.

RESPONSE

The EIS will allow DOE to carefully weigh public comments, environmental impacts, and risk of human health effects in making decisions regarding safe and responsible management of SNF.

See also the response to comment 03.08 (010).

03.05 (004) Government Policy

COMMENT

The commentor expresses the opinion that the funds being spent on transporting the waste would be better spent on alternative energy sources and detoxification of waste. The commentor also favors leaving waste where it can be seen, rather than burying it.

RESPONSE

The cost of transporting waste and SNF is a relatively small portion of the management cost. DOE prepared a report that estimates the cost of each alternative, including its associated transportation. See also the response to comment 03.01 (001).

The priorities for funding activities and programs of the Federal Government are determined by Congress and the President. A discussion of Federal spending priorities is beyond the scope of this EIS. Future funding to support interim management of SNF covered in this EIS will be established by Congress and the President as part of the annual DOE budget process.

03.05 (005) Government Policy

COMMENT

The commentor asks if DOE has a plan to take spent nuclear fuel from reactors in the Peachbottom cask to the Atascadero (Mescalero) Apache Indian Tribe per its proposal to store it on their reservation.

RESPONSE

DOE has no such plans. The Mescalero Apaches previously indicated an interest in the possibility of storing nuclear waste on their reservation. Such agreements regarding storage of commercial SNF are beyond the scope of this EIS.

03.05 (006) Government Policy

COMMENT

The commentor advocates a strong environmental restoration program at all DOE sites.

RESPONSE

Environmental restoration and waste management activities at DOE sites other than INEL are not within the scope of this EIS. However, DOE is addressing necessary environmental management activities at all of its sites.

See also the response to comment 03.08 (010).

03.05 (007) Government Policy

COMMENT

Several commentors focus on the economic viability and environmental impacts of various energy-producing technologies, including expressing both support for and opposition to nuclear power generation or technology development. Most of those opposed to nuclear power ask DOE to modify policies favoring nuclear power over alternative, renewable energy sources and energy conservation. Energy alternatives specifically suggested for more research and development include solar, wind, hydroelectric, grid hookups with the Russians, and fossil fuels.

RESPONSE

Comments on DOE's energy-related policies, conservation of energy, and the preference for development of one energy technology over another are outside the scope of this EIS. None of these issues will be affected by decisions made based on this EIS.

03.05 (008) Government Policy

COMMENT

Commentors express general opposition to or question the ethics of continued generation of spent nuclear fuel, operation of existing or new nuclear reactors, modernization of the defense complex, production of nuclear weapons, and further nuclear technology development for defense purposes. Some commentors specifically oppose use of highly enriched uranium in DOE reactors, reprocessing to recycle fissile materials, and transportation of nuclear materials. Others encourage phasing out nuclear reactors and nuclear-powered ships, and ceasing nuclear waste generation. One commentor states that the United States should set the example with the end of the Cold War. Other commentors express a preference for specific reactor technologies or projects such as the Integral Fast Reactor in Idaho or the Multipurpose Reactor in South Carolina, citing a number of benefits.

RESPONSE

Policies regarding the operation of nuclear reactors, nuclear-powered ships, the cessation of nuclear waste generation, production of nuclear weapons and defense technology development, and the need to generate and manage additional SNF in the future are established by Congress and the President. However, decisions regarding the alternatives to manage such SNF are within the scope of and are analyzed in this EIS.

Most of the SNF addressed in this EIS has already been generated and is currently being managed by DOE. Although vulnerabilities exist, DOE is managing SNF with safety as the primary focus. DOE has announced a decision to phase out reprocessing SNF for the purpose of recovering fissionable materials. Transportation of nuclear materials is necessary for DOE to carry out its various missions, and is analyzed in this EIS with respect to the proposed alternatives for managing of DOE SNF. Policies related to the use of highly enriched uranium in DOE reactors are beyond the scope of this EIS. Preference for specific reactor technologies and opinions about the benefits of such technologies have been noted, but selection and implementation of such technologies are outside the scope of this EIS.

03.05 (009) Government Policy

COMMENT

Commentors state that a more rational waste policy needs to be formulated in which materials are categorized according to their actual long-term hazards, waste generation is minimized, disposal costs are paid up front, and shallow burial is banned. One commentor states that the United States should develop a comprehensive nuclear waste policy with full public debate.

RESPONSE

Decisions regarding the programmatic management of DOE SNF over the next 40 years in the United States will be made by the Secretary of Energy based largely on the analysis in this EIS. An integral part of this process is the presentation of the EIS to the public to solicit comments on its contents. This EIS represents a national effort to address the problems associated with DOE SNF (see Volume 1).

Volume 2 addresses alternative approaches for managing DOE ER&WM and SNF activities at INEL. This EIS does not evaluate DOE complex-wide programmatic alternatives or policies for environmental restoration and waste management. Those issues are being evaluated in a separate EIS, which is currently being prepared by DOE.

DOE currently classifies and manages SNF and wastes with consideration of the long-term hazards associated with these materials. A discussion of the waste types managed by DOE is in Volume 2, section 2.2.7. Shallow land burial of low-level wastes is a common practice throughout the nuclear industry and is DOE policy for those wastes that meet strict site-specific waste acceptance criteria. The issue of shallow land burial is being addressed in the DOE *Waste Management Programmatic EIS*. Public comments on that document will be solicited by DOE, including comments on policies and costs related to the disposal of various waste forms. Likewise, disposal costs of high-level wastes and SNF are outside the scope of this EIS.

03.05 (017) Government Policy

COMMENT

The commentor questions continued nuclear energy development or production, except for medical uses.

RESPONSE

This EIS pertains to programmatic SNF management and INEL SNF management and ER&WM programs. Policies regarding nuclear energy development or production are beyond the scope of this EIS.

03.05 (018) Government Policy

COMMENT

The commentor expresses a general objection to generating spent nuclear fuel, to further use of highly enriched uranium in DOE reactors, to reprocessing, and/or to transportation of nuclear materials.

RESPONSE

Most of the SNF addressed in this EIS has already been generated and is currently being managed by DOE. Policies regarding the need to generate and manage additional SNF in the future are beyond the

scope of this EIS; however, decisions regarding the alternative to managing such SNF are within the scope of and are analyzed in this EIS.

Although vulnerabilities exist, DOE is managing SNF with safety as the primary focus. DOE announced a decision in 1992 to phase out reprocessing of SNF for the purpose of recovering fissile materials. Transporting nuclear materials is necessary for DOE to carry out its various missions, and is analyzed in the EIS with respect to the proposed alternatives for managing DOE SNF. Policies related to the use of highly enriched uranium in DOE reactors are beyond the scope of this EIS.

03.05 (022) Government Policy

COMMENT

The commentor expresses the need for a new vision for the United States, in that its 200-year history does not sensibly allow management of long-lived radioactive materials.

RESPONSE

Most of the SNF addressed in this EIS has already been generated and is currently being managed by DOE.

03.05 (023) Government Policy

COMMENT

The commentor suggests that it should be left to the scientists to decide on the most feasible, practical and beneficial methods for successfully disposing of radioactive wastes. In addition, the commentor suggests a three-part program to accomplish this, which would include reduction of the need for storage, even for the byproduct and disposal of wastes in areas least detrimental to life.

RESPONSE

DOE has a program for safely managing and storing all radioactive materials at each of the sites considered in the EIS, which includes research, development, and demonstration activities. General solutions for managing SNF, including waste reduction, recycling, and storage, are discussed in Volume 1, section 1.1.3 and Appendix J. Current management practices for radioactive wastes are described in Volume 2, section 2.2.7. Although Volume 2 is specific to INEL, it is also generally applicable to wastes at other DOE sites. Disposal options for DOE complex-wide wastes are outside the scope of this EIS, but are being addressed in the DOE *Waste Management Programmatic EIS*.

03.05 (024) Government Policy

COMMENT

Commentors note that spent nuclear fuel continues to be generated and that generation should stop, that greater efforts should be made to solve the problems with existing storage facilities and the problem of ultimate disposition of spent nuclear fuel, and that the spent fuel should be left where it is generated.

RESPONSE

Eliminating all current and future generation of DOE SNF would not significantly diminish the handling, storage, and final disposition challenges facing DOE. Inventories of DOE SNF are addressed in Volume 1, section 1.1 of the EIS. Approximately 86 percent of the current inventory originated in DOE weapons-production reactors that have ceased to operate. Another 8 percent was generated in DOE experimental reactors, most of which have been shut down. According to Volume 1, Table 1-1, additional SNF to be generated over the next 40 years (until 2035) will amount to only a 3-percent increase in the current inventory. Eliminating sources of DOE SNF altogether would require halting nuclear Navy operations and nuclear research at universities, which is not within the control of DOE and is outside the scope of this EIS.

Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This report, called the spent nuclear fuel vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, DOE is committed to complying with applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees.

General technologies and practices for managing SNF are discussed in Volume 1, section 1.1.3 and Appendix J. Technologies for final disposition of SNF cannot be specified in advance of repository acceptance requirements. These requirements are several years from completion and approval, but a combination of the technologies described in Volume 1, Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the alternatives analyzed in the EIS to providing or maintaining processing flexibility that may be necessary to meet the acceptance requirements. Consequently, although the ultimate disposition of SNF is a high priority for DOE, the details of disposition activities have not been finalized and are beyond the scope of this EIS.

Several alternatives in this EIS evaluate leaving all or most of the SNF at locations where it is now stored or generated. In addition, other EIS alternatives were evaluated to give consideration to providing and maintaining DOE's flexibility to safely, efficiently, and responsibly manage SNF until final disposition decisions are made.

03.05 (025) Government Policy

COMMENT

The commentor states that this EIS and its alternatives represent a delay rather than a solution.

RESPONSE

Volume 1, Chapter 2 discusses the purpose and need for DOE action. This action includes complex-wide strategic decisions on managing SNF for the next 40 years. These discussions include where to conduct these activities; determining appropriate capabilities, facilities, and locations for SNF management; and developing activities to support the SNF management program.

03.05 (027) Government Policy

COMMENT

The commentor states that solutions do not exist to solve the problem of the spent nuclear fuel that DOE has already generated, citing the failure of Yucca Mountain and the Waste Isolation Pilot Plant, or the waste or special nuclear material from weapons.

RESPONSE

General technologies and practices for managing SNF are discussed in Volume 1, section 1.1.3 and Appendix J of the EIS. Technologies for final disposition of SNF cannot be specified in advance of repository acceptance requirements. These requirements are several years from completion and approval, but a combination of the technologies described in Volume 1, Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the alternatives analyzed in this EIS to providing or maintaining processing flexibility that may prove necessary to meet the acceptance requirements. Although ultimate disposition of SNF is a high priority for DOE, the details of disposition activities, including Yucca Mountain for SNF and high-level waste and the Waste Isolation Pilot Plant for transuranic waste, have not been finalized and are beyond the scope of this EIS. Processing is addressed as an option in the EIS under the Volume 2, Maximum Treatment, Storage, and Disposal alternative for INEL. Managing waste generated from dismantling weapons and disposing of weapons material are the subjects of other DOE EISs.

03.05 (028) Government Policy

COMMENT

The commentor states that the statement in Volume I, Appendix A, "The DOE intends to maintain active institutional control of the site in perpetuity," conflicts with other DOE commitments to turn over large portions of the Hanford Site to other entities for non-DOE uses.

RESPONSE

DOE intends to maintain institutional control of certain portions of the Hanford site for a long time; however, some portions of the Hanford Site may be released from DOE institutional control as further land-use planning activities mature.

03.05 (029) Government Policy

COMMENT

The commentor questions why DOE is building more permanent storage facilities for waste that was supposed to go to the Waste Isolation Pilot Plant, and questions whether Idaho is going to become a permanent dump.

RESPONSE

Although the ultimate disposition of SNF, high-level waste, and transuranic waste is a high priority for DOE, the details of final disposition of these wastes have not been finalized and are outside the scope of this EIS. DOE is committed not only to developing Federal geologic repositories for permanent isolation of SNF and transuranic waste, but to providing safe interim storage pending availability of permanent disposal facilities. No permanent storage facilities in Idaho are proposed for these wastes.

3.5.1 Not used

3.5.2 Not used

3.5.3 Reactor Programs/Nuclear Power

03.05.03 (003) Reactor Programs/Nuclear Power

COMMENT

The commentor expresses the opinion that nuclear power generation should be emphasized and that plutonium and uranium should not be discarded.

RESPONSE

This EIS pertains to programmatic SNF management and INEL ER&WM programs. Policies regarding emphasis on nuclear power production are not within the scope of this EIS. Regarding maintaining SNF as a resource, such decisions are beyond the scope of this EIS, which evaluates only interim management until decisions on ultimate disposition are made. Decisions regarding the disposition of weapons-usable

fissile materials are being addressed in the forthcoming *Programmatic EIS for Storage and Disposition of Weapons-Usable Fissile Material*.

3.5.4 Energy Development

03.05.04 (002) Energy Development

COMMENT

The commentor indicates that all sources of energy have associated problems, which can be overcome through research.

RESPONSE

No response is required.

3.5.5 Recycling and Reprocessing

03.05.05 (001) Recycling and Reprocessing

COMMENT

The commentor is of the opinion that DOE should work toward an international ban on reprocessing.

RESPONSE

DOE announced a decision in 1992 to phase out reprocessing of SNF for the purpose of recovering fissionable materials for use in weapons production. Establishing a U.S. policy to encourage an international ban on reprocessing is beyond the scope of this EIS.

03.05.05 (002) Recycling and Reprocessing

COMMENT

The commentor states that the United States should maintain reprocessing capability for spent nuclear fuel. The commentor indicates that centralizing spent nuclear fuel management activities at the Hanford Site would allow the U.S. to establish global reprocessing capability to support the Pacific Rim.

RESPONSE

In April of 1992, The Secretary of Energy directed INEL and the Savannah River Site (SRS) to phase out defense-related chemical separations activities due to a reduction in the demand for new material for nuclear weapons. DOE no longer produces strategic isotopes, and at INEL, the phaseout activities have been completed. Phaseout activities at SRS continue. DOE has committed to prohibit the use of materials separated or stabilized during the phaseout, shutdown, and cleanout of weapons complex facilities for nuclear explosives purposes. Use of DOE chemical separations facilities for nondefense-

related activities, such as stabilizing SNF, is a reasonable option, the impacts of which are evaluated in the EIS as part of the various alternatives.

03.05.05 (003) Recycling and Reprocessing

COMMENT

Commentors state that nuclear waste materials should be considered for potential recovery of valuable substances, such as separating certain radioactive isotopes for use as potential future fuel or other uses.

RESPONSE

As acknowledged in Volume I, section 1.1.3, DOE is considering several specialized technologies for separating radioactive elements from SNF and radioactive wastes, including recovery of materials that may be used to fuel nuclear reactors. For example, Volume 1, Appendix J discusses processing SNF to remove fissile material.

03.05.05 (006) Recycling and Reprocessing

COMMENT

The commentor urges DOE to not select an alternative for SNF management that would in essence throw away all of the technological gains, including reprocessing, that have been made in the nuclear industry over the last 50 years. The commentor believes that abandonment of reprocessing will not allow the United States to solve the problems that continue to accumulate and that the United States cannot hope for the future to provide a "magic" solution to the problems of SNF management. The commentor questions why reprocessing is on hold if processing is being considered in the EIS.

RESPONSE

Processing and reprocessing are defined in the Glossary (Appendix H) for Volume I of the EIS. Processing means "applying a chemical or physical process designed to alter the characteristics of the SNF (SNF) matrix." Reprocessing is defined as "processing of reactor-irradiated nuclear material (primarily SNF) to recover fissile and fertile material, in order to recycle such materials primarily for defense programs." Thus, reprocessing is only one type of processing. As discussed in Volume 1, Chapter 1, DOE made a policy decision in 1992 that reprocessing of SNF for weapons production would be phased out. This policy is still in effect. Since that time, all of DOE's reprocessing facilities either have ceased to operate or are phasing out operations.

Volume I, Chapter I also indicates that several forms of SNF processing may still be required to stabilize certain types of SNF for safe storage. In addition, there are many different types of fuel with widely differing characteristics that may require treatment for safe storage and final disposition. At this time, repository acceptance criteria for receipt of SNF and high-level waste for final disposition have not

been defined; therefore, the types of fuels that may require treatment cannot be determined. Many of the treatments being studied do not separate fissile materials, although some do. Because repository acceptance criteria are not defined, it is not currently possible to determine whether fissile material will have to be separated from some fuels to meet disposal criteria. Consideration of processing and use of existing reprocessing facilities are evaluated in this EIS, because these facilities could be used for short-term management of some fuels that were not designed for extended underwater storage, but which are currently being stored underwater. Specific technologies for managing SNF are described in Volume 1, Appendix J.

03.05.05 (007) Recycling and Reprocessing

COMMENT

The commentor states that essentially all DOE spent nuclear fuel could be reprocessed by now if DOE had not ceased reprocessing, and asks why reprocessing was stopped.

RESPONSE

As discussed in Volume 1, Chapter 1, all of DOE's reprocessing facilities either have ceased to operate or are phasing out operations because continued recycling of plutonium and uranium for weapons production has been discontinued as a matter of national policy. This policy results from the collapse of the Soviet Union and consequent reduced need for strategic nuclear weapons and the fissile materials needed for their fabrication. DOE recognizes that processing may be an effective tool for managing SNF; thus, processing is included as an option in several of the alternatives.

03.05.05 (010) Recycling and Reprocessing

COMMENT

The commentor considers it strange that with the end of the Cold War, the decision to recycle spent nuclear fuel has been supplanted by storage for the next billion years.

RESPONSE

In April 1992, The Secretary of Energy directed INEL and SRS to phase out defense-related chemical separations activities due to a reduction in the demand for new material for nuclear weapons. DOE no longer produces strategic isotopes, and at INEL, the phaseout activities have been completed. Phaseout activities at SRS continue. DOE has committed to prohibit the use of materials separated or stabilized during the phaseout, shutdown, and cleanout of weapons complex facilities for nuclear explosives purposes. Use of DOE chemical separations facilities for nondefense-related activities, such as stabilizing SNF, is a reasonable option, the impacts of which are evaluated in the EIS as part of the various alternatives.

03.05.05 (011) Recycling and Reprocessing

COMMENT

The commentor encourages consideration of "the recycling approach alternative."

RESPONSE

In the past, DOE reprocessed SNF. Reprocessing is defined as "processing of reactor-irradiated nuclear material (primarily SNF) to recover fissile and fertile material, in order to recycle such materials primarily for defense programs." As discussed in Volume 1, Chapter I, all of DOE's reprocessing facilities either have ceased to operate or are rapidly phasing out of operations, because continued recycling of plutonium and uranium for weapons production is no longer a national priority. Specific technologies for managing SNF are described in detail in Volume 1, Appendix J of the EIS.

03.05.05 (012) Recycling and Reprocessing

COMMENT

The commentor recommends using the Integral Fast Reactor to recycle spent nuclear fuel.

RESPONSE

The Integral Fast Reactor program was discontinued and is not addressed in this EIS. A waste management project, Electrometallurgical Processing Demonstration, which, if successful, could prepare stainless-clad metallic spent fuel for disposal, is discussed in Volume 2, section 3.1 and in Volume 2, Appendix C.

3.6 Foreign Research Reactor Fuel Return Policy

03.06 (001) Foreign Research Reactor Fuel Return Policy

COMMENT

The commentor states the need for a global commons analysis for foreign research reactor spent nuclear fuel.

RESPONSE

Global commons analysis refers to analyzing potential environmental consequences of transporting, for United States receipt, FRR SNF over the oceans outside the jurisdiction of any nation. This EIS considers only the transportation of FRR SNF from U.S. ports of entry to DOE facilities so that all cumulative impacts of the alternatives considered are included. In compliance with Executive Order 12114, *Environmental Effects Abroad of Major Federal Actions*, the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft)* considers the environmental impacts of transporting FRR SNF over the global commons.

3.7 Equity and Environmental Justice

03.07 (001) Equity and Environmental Justice

COMMENT

The commentor expresses the opinion that secondary impacts from accidents, such as agricultural land withdrawal, interdiction of agricultural products, and economic impacts, would fall disproportionately on the Shoshone-Bannock Tribes.

RESPONSE

Volume 1, Chapter 5 and Appendices B and D, and Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment due to facility accidents at INEL. The EIS shows that impacts to the public, as well as the Shoshone-Bannock Tribes, from accidents would be small for all of the alternatives considered.

The overall review indicated that the potential impacts calculated for each discipline under each of the proposed alternatives present no significant risk to the surrounding population. As described in Volume 1, Appendix L, the impacts also do not constitute a disproportionately high and adverse impact on any particular segment of the population, minorities or low-income communities included, and thus do not present an environmental justice concern.

DOE consulted with the Tribes on this issue. The impacts on human health or the environment from facility or transportation accidents associated with managing SNF at INEL would be small under any of the alternatives considered. For example, it is unlikely that a single additional fatal cancer would occur as a result of SNF activities under any alternative. Because the potential impacts due to the risk of either a transportation or a facility accident for any of the alternatives considered would be small, no adverse effects from accidents associated with managing SNF would be expected for any particular segment of the population, minorities and low-income groups included.

03.07 (002) Equity and Environmental Justice

COMMENT

The commentor expresses the opinion that if centralization is the preferred alternative, the affected community should be given extra care, guarantees, and mitigation and compensation measures.

RESPONSE

The sources, appropriations, and accounting for fiscal and other resources to support the activities of the Federal Government are determined by Congress and are beyond the scope of this EIS.

As discussed in Volume 1, Chapter 3, safely managing SNF requires that many factors be analyzed, including site security, presence of skilled workers, safety, and the affected environment. Analyses of impacts for a number of potential storage locations are included in the EIS. These impacts would be small for all alternatives. As part of the public comment process, public input regarding the eventual location of SNF management activities was sought. DOE considered this public input when identifying the preferred alternative. The preferred alternative and other factors will be considered in the ROD for the proposed action.

See also the response to comment 05.09 (015).

03.07 (003) Equity and Environmental Justice

COMMENT

Commentors express the opinion that a specific state or site hosts a large share of the government's nuclear waste/spent nuclear fuel, which raises the question of equity. Other commentors indicate that their site has done its fair share or has enough involvement and should not be asked to do more, or be the nation's "dumping ground." In addition, the opinion was offered that all atomic wastes from the armed services should be spread around other states or divided equally.

RESPONSE

Several DOE sites do manage a significant percentage of DOE SNF and waste. This is due to each site's established capability to safely manage such materials (for example safeguards and security, a skilled work force, facilities, and historic mission) and associated support infrastructure (for example, waste management, emergency response, and stakeholder involvement programs). Decisions about where to site and conduct such programs are also influenced by a system of checks and balances designed to be beyond the control of the DOE, such as Congressional funding allocations, state and local permitting requirements, and potential judicial scrutiny.

Additionally, NEPA provides opportunities to involve the public in and promote informed decisionmaking regarding major Federal decisions. Accordingly, this EIS objectively evaluates 10 sites as reasonable siting alternatives for some level of SNF management activity. The analyses in the EIS include environmental considerations, socioeconomic impacts, and the potential risks to the public from both operations and reasonably foreseeable accidents for a number of options for managing SNF. The EIS concludes that there would be no significant risks to the public or the environment due to SNF management activities at any of the 10 sites considered.

See also the response to comment 03.07 (004).

03.07 (004) Equity and Environmental Justice

COMMENT

Many commentors state that sites that are politically weak, relatively unpopulated, economically depressed, and/or publicly inactive are being taken advantage of or targeted as waste management sites or dumps due to their inability to object effectively.

RESPONSE

This EIS objectively evaluates 10 sites as reasonable siting alternatives for some level of SNF management activity, without regard to political factors. The analysis includes environmental considerations, socioeconomic impacts, and potential risks to the public from both operations and reasonably foreseeable accidents for a number of options for managing SNF. The EIS concludes that there would be no significant risks to the public or the environment due to SNF management activities at any of the 10 sites considered.

DOE considered public comments in the preparation of this EIS, upon which a decision will be based. Although the EIS provides a basis for making decisions from the perspective of environmental impacts and public comments, decisions also will be based on such considerations as cost, programmatic needs of DOE and the Navy, and implementability. In addition, implementation of decisions are subject to Congressional funding and regulatory oversight processes. DOE intends to develop and implement a national SNF management strategy that serves the overall needs of the nation.

See also the response to comment 03.07 (003).

03.07 (005) Equity and Environmental Justice

COMMENT

The commentor states that decisions regarding remediation, waste management, and storage activities must provide for the protection of the Shoshone-Bannock Tribes' cultural and natural resources.

RESPONSE

The environmental restoration actions that would occur under the alternatives considered in this EIS would be subject to the provisions of CERCLA, which provides for ecological risk assessment and identification of injury or potential injury to natural resources resulting from past releases of hazardous substances. The alternatives in this EIS include projects for protecting the vadose zone and cleaning groundwater, and cleaning up and/or retrieving buried wastes. The environmental impact analyses are designed to produce a reasonable projection of the upper bound for potential environmental consequences. Volume I, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the

environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

03.07 (006) Equity and Environmental Justice

COMMENT

The commentor notes that the West Valley Demonstration Project is located on the Cattaraugus Creek upstream of the Cattaraugus Reservation of the Seneca Nation of Indians. The commentor suggests that this creates environmental justice concerns, and that DOE should pay particular attention to potential adverse environmental impacts. The commentor also states that the Reservation should be given full opportunity to participate in the National Environment Policy Act process.

RESPONSE

Volume 1, Appendix L addresses environmental justice concerns related to SNF management. Potential impacts to the Seneca Nation of Indians arising from SNF management activities associated with the West Valley Demonstration Project are considered to the extent that they are within the scope of this EIS. Consultation with the Seneca Nation of Indians on the Cattaraugus Reservation resulted in a request that the tribe be notified of impending shipments across their lands. DOE is considering this request.

03.07 (007) Equity and Environmental Justice

COMMENT

The commentor notes that the presidential memorandum accompanying Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs Federal agencies to analyze the environmental effects on minority communities and low-income communities when such analysis is required by the National Environmental Policy Act of 1969. The commentor is of the opinion that the EIS does not adequately address environmental justice.

RESPONSE

The Draft EIS committed to further analysis of environmental justice based on DOE's implementation strategy for Executive Order 12898, which was unavailable at the time. Though administration guidance was still evolving at the time of Final EIS preparation, the analysis of environmental justice has been expanded based on appropriate interim guidance. The EIS addresses environmental justice and associated directives in Volume 1, section 5.8 and Appendix L for programmatic SNF management; in Volume 2, section 5.20 for ER&WM activities at INEL; and in the EIS Summary.

See also the response to comment 03.07 (003).

03.07 (008) Equity and Environmental Justice

COMMENT

The commentor states that DOE must meet the requirements of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and fully consider the Shoshone-Bannock Tribes' comments on the EIS, the impacts of its proposed actions on the Tribes, the Fort Hall Reservation, and on other disadvantaged populations living in proximity to the Idaho National Engineering Laboratory. The commentor further indicates that the Tribes are not just another "minority population," but are governments that have a special relationship with the Federal Government and its agencies, and have certain authorities to regulate others, including the Federal Government.

RESPONSE

The EIS addresses environmental justice and associated directives in Volume 1, section 5.8 and Appendix L for programmatic SNF management; Volume 2, section 5.20 for INEL ER&WM programs; and the EIS Summary. Potential impacts to the Shoshone-Bannock Tribes and the Fort Hall Reservation arising from SNF management and waste management and environmental restoration program activities associated with INEL are considered to the extent that they are within the scope of the EIS, including transportation impacts. Impacts of all of the alternatives considered would be small. To fully understand and be responsive to the Tribes, DOE consults regularly with the Shoshone-Bannock Tribes regarding comments on and concerns about the potential siting of proposed activities at INEL. DOE recognizes the Shoshone-Bannock Tribes as a sovereign nation.

3.8 Miscellaneous

03.08 (001) Miscellaneous

COMMENT

The commentor forwards to the State of Oregon questions related to shipping foreign research reactor fuel through the Port of Portland, Oregon, including such matters as the associated risks and risk analyses, emergency plans and resources, and details of possible shipments.

RESPONSE

In a letter to the commentor (Nuclear Free Port Coalition) on July 20, 1994, the Oregon Department of Energy answered each of the questions raised. This letter states that while all transport of hazardous materials poses a risk, the chance of an accident occurring during movement of FRR SNF through the Port of Portland, which could harm those exposed to radioactive materials from such an accident or cause evacuation of people downwind of the accident site, is extremely small. The letter also states that state, Federal, and local emergency plans, supporting resources and trained responders, and notification

procedures are available, rehearsed, and updated as needed. The Oregon Department of Energy letter identified applicable Federal, state, and local regulations governing such shipments and provided information on the properties of some of the materials involved and controls on exposure to radiation.

The letter stated that if the Oregon Department of Energy knew of changes to the shipping procedures that would substantially increase safety, it would ask DOE or other shippers to make those changes. The letter also stated that the Oregon Department of Energy has no evidence that changes to existing procedures would increase safety.

In summary, the Oregon Department of Energy specifically answered each of the commentor's questions and those answers are consistent with the discussions and analyses in this EIS. The EIS demonstrates that the risks associated with transporting SNF would be small for all of the alternatives considered.

03.08 (002) Miscellaneous

COMMENT

A commentor suggests that the EIS be updated to reflect more current information on Fort St. Vain spent nuclear fuel. Additionally, the commentor states that no licensed cask exists for the shipment of spent nuclear fuel from Fort St. Vain.

RESPONSE

Volumes 1 and 2 contain the most current information DOE has on Fort St. Vain SNF. Volume 1 gives specific information regarding the quantity of Fort St. Vain fuel currently stored at INEL and the quantity that could be received in the future. The EIS provides an upper limit on the individual and cumulative impacts.

The TN-FSV cask, U.S. Nuclear Regulatory Commission Certificate of Compliance No. 9253, Rev. 0, has been approved by NRC for shipping SNF by truck from Fort St. Vrain. The Certificate of Compliance for the TN-FSV cask does not expire until May 31, 1999, and the Public Service Company of Colorado is registered as a user.

03.08 (003) Miscellaneous

COMMENT

The commentor encourages DOE support for a grant proposal (the Equal Partners Act) to study issues associated with the storage of spent nuclear fuel in South Carolina.

RESPONSE

Support for specific grant proposals is outside the scope of this EIS; however, DOE is receptive to unsolicited proposals related to managing SNF.

03.08 (004) Miscellaneous**COMMENT**

The commentor points out that even with citizen's groups "going to bat" to stop waste shipments all over the country, waste is still being shipped.

RESPONSE

DOE is mandated by Congress to perform certain activities, among them to manage its SNF in a safe and secure manner. With this EIS, DOE is examining a range of management alternatives that include varying amounts of transportation of SNF among sites for management.

03.08 (006) Miscellaneous**COMMENT**

The commentor is opposed to the Idaho National Engineering Laboratory's perceived treatment under the Nuclear Weapons Complex Reconfiguration Program, also known as Complex 21.

RESPONSE

The *Nuclear Weapons Complex Reconfiguration Programmatic EIS*, which has been split into two EISs, the *Programmatic EIS for Tritium Supply and Recycling* and the *Stockpile Stewardship and Management Programmatic EIS*, is discussed in Volume 1, section 1.2.2 of this EIS; however, general issues related to that program are beyond the scope of this EIS.

03.08 (007) Miscellaneous**COMMENT**

Commentors express the need to inform the public of DOE activities and note the value of providing information on radiation, waste management, risk, and other related topics. Such information should not end with the siting of a facility or program or be in the self interest of anyone.

RESPONSE

DOE has engaged in substantial public information programs and stakeholder initiatives to provide information to the public. All major Federal actions invoking NEPA review are publicized, and public hearings are advertised throughout potentially affected communities. All persons and organizations have an opportunity to request information from DOE and to provide comments during the scoping process and public review periods. Activities include providing speakers on a variety of topics on request to a wide range of audiences, promoting student awareness of the sciences, numerous public information

meetings and publications, and public information offices at all major DOE locations. DOE's policy is to fully and objectively inform the public of its activities and to involve the public in decisionmaking to the extent practicable.

See also the response to comment 03.03 (008).

03.08 (008) Miscellaneous

COMMENT

The commentor indicates that there should be objective international standards of accountability for the money being spent on weapons and their impacts on life.

RESPONSE

This EIS addresses interim management of DOE SNF until ultimate disposition. International standards of accountability and the fiscal efficiencies of cleanup activities are beyond the scope of this EIS. See also the response to comment 03.01 (001).

03.08 (009) Miscellaneous

COMMENT

The commentor makes statements regarding activities such as the 106C tank at the Hanford Site and litigation, performance assessment, and waste management activities at the Nevada Test Site.

RESPONSE

The activities in question are unrelated to the proposed actions, alternatives under consideration, or the decisions being facilitated through this EIS.

03.08 (010) Miscellaneous

COMMENT

Commentors express the opinion that DOE has not shown recent or historical concern for or interest in the public, future generations, workers, or the environment. Commentors mention both specific and general adverse impacts from past DOE programs and operations, and charge that DOE has demonstrated general abuse of responsibility.

RESPONSE

DOE is very much aware of public criticisms of its operations, both ongoing and historical. In this regard, the Secretary of Energy has publicly affirmed that current DOE policy and practice emphasize safety and environmental responsibility above all other program goals. DOE is formally committed to protecting the safety and health of its workers, the public, and the environment in consideration of current and future generations. DOE is also working to rectify and eliminate adverse environmental

impacts from past programs, while ensuring that current activities are conducted without environmental insult.

03.08 (011) Miscellaneous

COMMENT

Commentors express the need for or urge DOE to consider independent review and recommendations as to the priorities, national policy, and/or scope of nuclear waste or spent nuclear fuel management or other DOE activities. Commentors mention the need for a comprehensive nuclear policy and local oversight of DOE activities, public debate, referendums, appointment of independent commissions or "Blue Ribbon" panels, or other "balanced" advisory groups including participation of citizens, experts, workers, and/or state and local officials. Such groups should be independent of DOE and/or the Navy. One commentor suggests that the supervision of radiation health research be conducted by a nonmilitary agency independent of the military and weapons production, and that oversight be conducted by qualified independent scientists and representatives of site workers and nearby communities.

RESPONSE

DOE has and continues to take advantage of independent assessment and oversight of various programs and operations. DOE is subject to independent regulations and oversight under numerous environmental regulations such as the Clean Air Act, the Clean Water Act, and CERCLA under the jurisdiction of EPA or the states, as appropriate. Policy regarding additional oversight is under review; however, such decisions are beyond the scope of this EIS. DOE often requests or cooperates with review of its operations by independent organizations such as the National Academy of Sciences, the Congressionally appointed Defense Nuclear Facilities Safety Board, the recently appointed Galvin Commission, etc. The Centers for Disease Control and Prevention is conducting radiological dose reconstruction studies related to past DOE releases.

The DOE complex-wide Environmental Management Advisory Board has been chartered under the Federal Advisory Committee Act. The Board consists of independent citizens from various backgrounds tasked with advising DOE on local and national policy issues. Local site-specific advisory boards are also being established. For instance, the INEL Site-Specific Advisory Board reviewed and commented on this EIS. DOE recognizes the value of independent and interdisciplinary review of not only its NEPA documentation, but its policies, priorities, and practices. In the case of this EIS, decisions will be made by the Secretary of Energy and will include consideration of public and agency comments on the EIS.

03.08 (012) Miscellaneous

COMMENT

Commentors express opinions regarding whether the nonproliferation policy justifies the return of spent nuclear fuel of United States origin from foreign research reactors. Most commentors express the opinion that countries where such spent nuclear fuel currently exists do not pose a nonproliferation threat and can safely store such material without undue risk. Other commentors express the opinion that these countries pose a nonproliferation threat and support return of spent nuclear fuel of United States origin from foreign research reactors.

RESPONSE

While nuclear nonproliferation policy is an issue affecting decisions regarding the management of SNF either within the United States or abroad, that issue and the merits of various aspects of United States nonproliferation policy are determined by the President and Congress. The nonproliferation policy is a consideration in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft), which analyzes the environmental impacts of returning FRR SNF to the United States and after it has reached a U.S. port and been readied for shipment to a DOE SNF storage location.

See also the response to comment 06.09 (013).

03.08 (013) Miscellaneous

COMMENT

Commentors express humorous or other opinions regarding institutions, officials, issues, and the like.

RESPONSE

Such comments do not provide substance conducive to a response. DOE recognizes that some commentors disagree with the need for and the alternatives being considered to manage SNF.

03.08 (014) Miscellaneous

COMMENT

The commentor notes that cost factors are not addressed in the EIS, but will likely be important to the decision process. The commentor also states that in combination with other factors, such as the Integral Fast Reactor already being at the Idaho National Engineering Laboratory, the decision will be driven toward keeping spent nuclear fuels at the Idaho National Engineering Laboratory and, possibly, toward bringing more in, just based on cost considerations, suggesting that this is both an irretrievable commitment of resources and "piecemealing" the EIS.

RESPONSE

DOE prepared and issued the *Spent Nuclear Fuel Management Cost Evaluation Report* (Draft). A summary of the report is included in Volume I, Chapter 3 of the EIS for the convenience of the reader. The cost evaluation report is intended to be only one of many factors considered in making near-term SNF management decisions.

The purpose of the cost evaluation report is to not only provide information to decisionmakers for this EIS, but also for other management decisions. The decision process for this EIS will involve consideration not only of environmental factors, but also of public comments, technical and practical considerations, and DOE's mission.

03.08 (015) Miscellaneous**COMMENT**

The commentor states that the EIS conclusion that the alternative proposals for spent nuclear fuel management have small environmental effects is logical if it is assumed that there will be compliance with existing Federal laws and regulations.

RESPONSE

DOE is committed to comply with all applicable Federal and state laws and regulations. Further, it is DOE policy to implement legally applicable radiation protection standards and to consider and adopt, as appropriate, recommendations by authoritative organizations (e.g., the National Council on Radiation Protection and Measurement, the International Commission on Radiological Protection, the Nuclear Regulatory Commission). The No Action alternative in the EIS, which provides an environmental baseline for comparison of the impacts of the other alternatives, would not meet all regulatory requirements. DOE considered regulatory compliance in its identification of the preferred alternative.

03.08 (016) Miscellaneous**COMMENT**

Commentors indicate that DOE must select, in its preferred alternative and in the EIS Record of Decision, an alternative that supports its contractual obligation to remove spent nuclear fuel from the West Valley Demonstration Project site.

RESPONSE

In developing its preferred alternative and the ROD, DOE has and will consider all contractual commitments, including those with the West Valley Demonstration Project. Negotiations are currently under way between DOE and the New York State Energy Research and Development Authority, per section 8(c) of their November 1986 Agreement, regarding extension of the date for removal of the SNF

from West Valley. A decision regarding removal of the SNF from West Valley must await publication of the ROD for this EIS.

See the response to comment 04.04 (008) for management of spent nuclear fuel under DOE's preferred alternative.

03.08 (017) Miscellaneous

COMMENT

Commentors state that all DOE sites are contaminated, and cleanup is not progressing quickly enough. Some commentors support continued research at Idaho National Engineering Laboratory and would like to see past issues resolved before additional wastes are brought in.

RESPONSE

DOE accepts the responsibility to operate its waste management activities in compliance with applicable requirements and continues to improve the procedures and technologies associated with waste management. Accordingly, lessons learned from past practices and knowledge gained from ongoing research and development programs are incorporated into future waste management programs. The purpose of this EIS is to further these objectives.

DOE's Environmental Restoration Program is responsible for responding to past releases to the environment. Specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process to integrate the remediation requirements of CERCLA, and the corrective action requirements of RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protection of human health and the environment will be achieved through implementation of the selected remedy.

Environmental restoration efforts at INEL have progressed substantially since the FFA/CO was signed. As of March 1995, 10 of the 25 scheduled RODs have been successfully negotiated and signed by DOE, EPA, and the State of Idaho. These RODs have resulted in the implementation and/or completion of interim and final actions designed to reduce or eliminate hazards to human health and the environment. To date, all enforceable milestones set in accordance with the FFA/CO have been met, either on or ahead of schedule. Additional work is scheduled over the next several years, as detailed in this EIS and the FFA/CO.

Other DOE sites are responsible for negotiating similar agreements with the appropriate regulatory agencies and managing environmental restoration activities in accordance with these agreements, as discussed in Volume 1, Appendices A through F.

Specific details of the overall DOE Environmental Restoration Program in general are not within the scope of this EIS. The INEL Environmental Restoration Program is discussed in Volume 2, sections 2.2.6 and 7.2.5.

03.08 (018) Miscellaneous

COMMENT

The commentor suggests adding "current" to clarify the DOE and Navy mission statements in the Summary.

RESPONSE

The Summary has been edited to clarify the missions of both DOE and the Navy.

03.08 (019) Miscellaneous

COMMENT

The commentor states that DOE spends too much money, whether for environmental evaluations, public meetings, or waste and spent fuel activities.

RESPONSE

Congress dictates the responsibilities for which DOE will be held accountable. That accountability includes proper justification of the planning budget and fiscal accountability. This EIS was prepared pursuant to NEPA. The entire NEPA process, while sometimes costly, is expected to benefit the public because it provides the opportunity to be part of DOE's decision-making process. The NEPA process also benefits the public and the government by helping ensure cleaner and safer environments in and around Federal facilities.

03.08 (020) Miscellaneous

COMMENT

The commentor indicates DOE has been motivated or influenced by the corporations or monetary interests that manage the DOE sites, and requests that DOE not damage the environment.

RESPONSE

This EIS, while supported by significant work by outside consultants, was prepared by DOE. All analyses by consultants were carefully reviewed by DOE. Contractors who participated in preparing this document have no financial interest in decisions that will be made by the Secretary of Energy based on

this EIS. None of the management and operating contractors at the sites prepared the EIS, although they did provide data that was used in the preparation of the document. For this EIS, public comments have played a significant role in the decision process. The final decisions will be made using an objective approach, and will include such factors as DOE mission, cost, and technical feasibility. DOE's final decision will not be influenced by corporations.

Volume I, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

03.08 (022) Miscellaneous

COMMENT

The commentor suggests that DOE change its radiation protection standards.

RESPONSE

It is beyond the scope of this EIS to establish radiation protection standards for DOE. Radiation protection standards are established by the National Association of Science and the National Council on Radiation Protection, considering the latest scientific information. These standards are also reviewed for consistency with international standards set by the International Council on Radiation Protection.

03.08 (023) Miscellaneous

COMMENT

Commentors suggest that funding for cleanup at the Idaho National Engineering Laboratory is not sufficient.

RESPONSE

Funding issues are beyond the scope of this EIS.

03.08 (024) Miscellaneous

COMMENT

The commentor states that the public should have a say in what waste comes into Idaho before it arrives.

RESPONSE

NEPA and its implementing regulations require public participation prior to an agency making a decision on a major proposed action. For this EIS, DOE provided extensive public participation opportunities.

In accordance with CEQ regulations, a Notice of Opportunity to comment on preparation of an *EIS on DOE Programmatic Spent Nuclear Fuel Management and Environmental Restoration and Waste*

Management at the Idaho National Engineering Laboratory was published in the *Federal Register* on September 3, 1993. DOE received numerous letters from individuals and organizations, either asking questions or raising issues related to the EIS. Each of these letters was answered by DOE, with information provided as requested. An Implementation Plan was prepared and released to the public on October 29, 1993; the amended Implementation Plan was available on May 9, 1994. A Notice of Availability was published in the *Federal Register* on July 1, 1994, to announce the availability of the Draft EIS. The Draft EIS was offered on request and was available at 64 public libraries and information locations. The Draft EIS was delivered to all who requested it, and was sent to all state and Federal agencies, organizations, and individuals who were believed likely to be interested in the subject. Public comments were solicited and written comments were received from June through September 1994, well in excess of the NEPA requirement. Thirty-three public hearings were held in 20 locations throughout the country, including 4 locations in Idaho, and comments were received at these hearings, through the mail, and through a toll-free telephone line, which accepted comments both orally and by facsimile. Notices of the dates, times, and locations of the public hearings were published in the *Federal Register* on June 24, 1994. In addition, advertisements were placed in local newspapers prior to the meetings. Numerous additional information briefings were provided to organizations and individuals. In a special effort to involve communities not previously involved, DOE advertised the hearings in alternative newspapers; in Spanish-language newspapers and on Spanish-language radio programs; and also had available Spanish-language translators for the meetings in Idaho. DOE conscientiously and thoroughly fulfilled its responsibilities to use available avenues for public awareness and for solicitation of public input during the EIS process. DOE continues to seek ways to improve the public involvement process and will use the comments to improve public involvement plans for future EISs.

4. PROPOSED ACTION AND ALTERNATIVES

4.1 Purpose and Need

04.01 (001) Purpose and Need

COMMENT

Many commentors state that the EIS does not adequately describe the purpose and need for the proposed action. One commentor is of the opinion that the stated purpose failed to demonstrate the need for a programmatic EIS.

RESPONSE

The purpose and need for DOE actions are described adequately in Volume 1, Chapter 2 and Volume 2, Chapter 1. Volume 1, Chapter 2 describes the need for DOE to provide a management strategy for a wide range of types of spent nuclear fuel (SNF) in varying conditions. Volume 2, Chapter 1 describes the need for DOE to implement a waste management program at the Idaho National Engineering Laboratory (INEL) that complements its environmental restoration program as set forth in the Federal Facility Agreement and Consent Order (FFA/CO).

The decisions that must be made to establish an effective SNF program are (a) where to conduct SNF management activities, (b) the appropriate facilities, capabilities, and technologies for SNF management, and (c) the research and development activities to support the SNF management program.

The integration of programmatic management of SNF and the INEL environmental restoration and waste management programs into a single EIS was based on an analysis of the requirements of the Court with regard to SNF management activities at INEL. To fully evaluate all reasonable alternatives for SNF management activities at INEL, including Fort St. Vrain and Naval SNF, DOE considered it necessary to evaluate the national strategy for managing SNF. This allows the public and decisionmakers, the full perspective of reasonable alternatives. It also serves as a means to address nationwide vulnerabilities, as stated in Volume 1, Chapter 2. To meet the deadlines agreed to during litigation, it was necessary to withdraw programmatic SNF management from the *Programmatic Environmental Restoration and Waste Management EIS* (now the *Waste Management Programmatic EIS*) and include it in the INEL *Environmental Restoration and Waste Management EIS*.

See also the response to comment 05.09 (008).

04.01 (002) Purpose and Need

COMMENT

The commentor states that the EIS does not define the problem and motivation for getting the problem solved, except in terms of transportation.

RESPONSE

The problem varies with SNF type and waste type. The decision criteria used to compare the various alternatives and select the preferred alternatives was based in part on public comments, including the need to address specific problems and the public's desire to minimize transportation. The transportation analysis shows the maximum potential impacts among the proposed alternatives.

This information is used by the decisionmakers. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there would be differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives.

4.01 (003) Purpose and Need

COMMENT

The commentor expresses the opinion that the EIS is really justifying continued operations of existing facilities, and a real mission needs to be established.

RESPONSE

The EIS evaluates a full range of alternatives to safely and effectively manage present and reasonably foreseeable quantities of SNF pending its permanent disposition. The purpose and need for the proposed actions are in Volume I, Chapter 2. DOE believes this EIS adequately describes the SNF mission.

04.01 (004) Purpose and Need

COMMENT

The commentor suggests that a range of possible solutions be developed.

RESPONSE

Volume I of this EIS is programmatic; that is, it evaluates a full range of reasonable alternatives for SNF management activities on a nationwide basis. Volume 1, section 3.1 describes the preferred alternative for SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL.

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-

level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

04.01 (005) Purpose and Need

COMMENT

Commentors state that DOE is wasting taxpayer dollars focusing on temporary storage rather than ultimate disposition and question why preparing spent nuclear fuel for final disposition would take 40 years. In addition, commentors express opinions that solutions are not evident for solving the problems associated with spent nuclear fuel management.

RESPONSE

DOE and the independent Defense Nuclear Facility Safety Board have determined that imminent hazards could arise within several years unless additional interim SNF storage capabilities are available. Yucca Mountain is being studied as the potential site for the first geologic repository. If the site is found suitable, acceptance of commercial SNF is expected to begin 2010. Although the date for acceptance of DOE high-level waste is planned to be 2015, the date for acceptance of DOE SNF at the repository has not been finalized. While DOE is committed to developing a Federal geologic repository for permanent isolation of SNF and high-level wastes, technologies for final SNF disposition cannot be specified in advance of repository performance and associated acceptance criteria for SNF and high-level waste. DOE acknowledges these challenges by allowing up to 40 years for ultimate disposition to begin in a suitable repository.

The 40-year period is not needed to prepare SNF for final disposition, but is judged to be an upper limit on the time needed for a repository to be available. Pending availability of such disposal options, DOE is committed to provide safe and environmentally sound storage and management of SNF.

Although activities associated with licensing and opening the SNF and high-level waste repositories are outside the scope of this EIS, general solutions for safe interim management of SNF are included in this EIS. General solutions for managing SNF have been developed and are discussed in Volume I,

section 1.1 and Appendix J. Technologies that have been developed to enable SNF to be managed safely during the storage period are described in Volume I, Appendix J. A combination of these technologies may satisfy many of the eventual repository acceptance criteria. In addition, consideration is given in the alternatives analyzed in the EIS for providing or maintaining processing flexibility that may be required to meet the repository acceptance criteria.

04.01 (008) Purpose and Need

COMMENT

The commentor states that the EIS needs to explain the actions needed, problems identified and solutions, and then identify locations.

RESPONSE

Volume 1, Chapter 2 describes the purpose and need for the proposed action. The alternatives, described in Chapter 3, provide potential solutions to these problems/needs. DOE considers environmental impacts, mission impacts, cost effectiveness, and public input in making its decision after a Final EIS is published.

04.01 (009) Purpose and Need

COMMENT

The commentor states that the EIS should not address the a nationwide inventory of spent nuclear fuel. This unnecessary evaluation along with configuring this programmatic and INEL site-wide EIS leads one to believe that the INEL is designated as the national site for spent fuel management, thus business as usual.

RESPONSE

This EIS is a comprehensive national review of management options for a large inventory of DOE SNF in response to requests to do so by the State of Idaho. In 1991, the State of Idaho and DOE became involved in litigation over SNF. In a Court opinion dated May 2, 1992, DOE was advised to analyze shipments of fuel from the Fort St. Vrain reactor in a comprehensive EIS, which also analyzes and discusses all proposed shipments of nuclear waste to INEL from all sources. The State of Idaho then requested that the Court allow it the opportunity to amend its pleading, which the court allowed. In its amended counterclaim, the State of Idaho argued that DOE must analyze, in a comprehensive EIS, all actions involving receiving and storing SNF, and must study all reasonable alternatives to the receiving SNF at INEL. This argument by the State of Idaho helped shape the scope of the EIS. INEL is being considered with four other DOE sites for the management for DOE SNF under a number of reasonable action alternatives. Additionally, five sites are being considered for the management of Naval SNF fuel only. No decision have been made regarding any sites. See the response to comments 04.04 (008) and 04.04 (011).

4.2 Proposed Action

04.02 (001) Proposed Action

COMMENT

The commentor states that the EIS is not adequate because it fails to clearly define the proposed action.

RESPONSE

DOE has revised Volume 1, Chapter 2 and Volume 2, Chapter 1 to more clearly state the proposed actions. Volume 1, Chapter 2 describes the background factors leading to the proposed action and sets forth the action proposed by DOE. DOE states that as a primary part of establishing an effective SNF management program, DOE must first analyze complex-wide strategic questions regarding SNF management. These questions include analyzing the most appropriate location(s) for SNF management; the methods for managing SNF; and the necessary research and development activities that would be integrated into the management program. This type of EIS is commonly known as a "programmatic" or "program" EIS, and is acceptable under the Council on Environmental Quality (CEQ) regulations at 40 CFR 1502.4(b). As emphasized in Volume 1, Chapter 2, once decisions are made regarding the appropriate locations(s) for SNF management, questions on site-specific and technical implementation of the SNF management program will be analyzed in subsequent tiered NEPA reviews, as appropriate.

Volume 2, Chapter 1 of the EIS describes the purpose and need for agency action at INEL. DOE states in that section that as part of developing and implementing a program for SNF management, environmental restoration, and waste management at INEL, site-specific decisions must be made regarding research and development activities, compliance with legal requirements, and management of wastes, SNF, and environmental restoration projects, all in an environmentally sound manner. The proposed action in Volume 2 of the EIS is adequate under CEQ regulations. Volume 2 evaluates the INEL site-specific alternatives for managing SNF under all programmatic alternatives evaluated in Volume 1.

4.3 Alternatives Analyzed

04.03 (001) Alternatives Analyzed

COMMENT

Many commentors state that the generation of spent nuclear fuel should be minimized or stopped until there is a long-term management plan in place, existing facilities and problems are corrected, or there is a means of ultimate disposition. Some commentors state that the No Action alternative would facilitate

that process, while others state that the EIS is inadequate because it does not address the cradle-to-grave aspects of spent nuclear fuel.

RESPONSE

Eliminating all current and future generation of DOE SNF would not significantly diminish the handling, storage, and final disposition challenges facing DOE. Also, many products produced by the operating reactors would cease to exist, as stated in Volume 1, Appendix E, section 2.1.1. DOE SNF inventories are addressed in Volume 1, section 1.1 and for INEL in Volume 2, section 2.2.5. Approximately 86 percent of the current inventory originated in DOE weapons-production reactors that have ceased to operate. DOE experimental reactors, most of which have been shut down, generated another 8 percent. According to Volume 1, Table I-1, the additional SNF, in metric tons of heavy metal (MTHM), to be generated over the next 40 years (until 2035) will amount to only a 3-percent increase in the current inventory. The operations that generate DOE and Navy SNF are carried out to implement programs and policies established by the President and Congress; therefore, cessation of these activities would require changes in these policies and programs. Such changes are outside the scope of this EIS.

Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This report, called the spent nuclear fuel vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2, and Volume 2, section 2.2.5 for INEL. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management are presented for all alternatives in Volume 1, sections 5.1 and 5.2, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, impacts would be small.

General solutions for managing SNF have been developed and are discussed in Volume 1, section 1.1.3 and Appendix J. Therein it is noted that technologies for final disposition of SNF cannot be specified in advance of repository acceptance criteria. These requirements are several years from completion and approval, but a combination of the technologies described in Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the alternatives analyzed in the EIS to providing or maintaining processing flexibility that may prove necessary to meet the acceptance criteria. Consequently, although the ultimate disposition of SNF is a high priority for DOE, the details of disposition activities have not been finalized and are beyond the scope of this EIS.

Pending availability of such disposal options, DOE must provide for safe and environmentally sound storage and management of these materials. Several of the action alternatives being evaluated in this EIS

also provide the flexibility to economically site facilities that may be necessary to process materials, high-level waste, or SNF to meet waste acceptance criteria that are evolving for the repositories. The implementation of safe interim storage, and the capability to meet necessary repository disposal criteria represent the solution that DOE seeks to define with this EIS.

04.03 (002) Alternatives Analyzed

COMMENT

The commentor states that the United States is planning to receive foreign spent nuclear fuel for storage, but it should be kept outside the United States. The commentor also raises an issue about the lack of capacity to currently store such spent nuclear fuel.

RESPONSE

Alternatives related to the policy on managing SNF of United States origin from foreign research reactors (FRRs) are being analyzed in a separate EIS. However, this EIS does analyze the impacts of transporting and managing FRR SNF should a decision to accept such fuel be made. This effectively bounds the analysis for reasonably foreseeable management of the SNF under consideration. DOE will not make a final decision on the acceptance of that fuel until the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft) and this EIS are completed. Depending on decisions made under this EIS, capacity at the Savannah River Site (SRS), INEL, or both may need to be enhanced to support on-site SNF management activities.

04.03 (003) Alternatives Analyzed

COMMENT

The commentor suggests that foreign and domestic non-DOE shipments should not be included in the Decentralization alternative, and only the no-exam case for the Navy spent nuclear fuel should be included.

RESPONSE

The changes to the Decentralization alternative the commentor recommends essentially equate to the No Action alternative. The EIS evaluates environmental impacts of all alternatives, including the No Action alternative, and concludes that these impacts would be small.

04.03 (004) Alternatives Analyzed

COMMENT

The commentor states that all alternatives present catastrophic risk to present and future populations and are enormously expensive.

RESPONSE

The estimated costs of the alternatives are summarized in Volume 1, section 3.3. For all of the alternatives considered in this EIS, the impacts presented in Volume 1, Appendix K would be small. See also the response to comment 05.12.07.01 (001) regarding risks due to postulated accidents and to comment 05.10.02 (007) regarding fears.

04.03 (005) Alternatives Analyzed**COMMENT**

Commentors express the opinion that the EIS fails to assess an inclusive range of alternatives and has not considered all options or sites, and that DOE and Navy minds are limited to out-of-date solutions.

RESPONSE

DOE believes that the range of alternatives analyzed in the EIS are inclusive and in accordance with the requirements of considering a reasonable range of alternatives under the NEPA and CEQ regulations. Alternatives range from the No Action alternative to an alternative that would consolidate all SNF at a single site, the Centralization alternative. Alternatives dismissed are discussed in Volume 1, section 3.2 and Volume 2, section 3.2. DOE believes the discussions of the bases for dismissing other possible alternatives are adequate. Analysis and discussion of all alternatives that can be postulated is an impossibly large task and is not required by existing regulations. See also response to the comment 04.03.01 (001) regarding selection of alternative sites.

04.03 (006) Alternatives Analyzed**COMMENT**

The commentor states that the alternatives provided are too broad and the EIS should analyze different storage possibilities and technologies.

RESPONSE

The purpose of Volume 1 of the EIS is to provide the public and decisionmakers with a programmatic view of the proposed action and alternatives. The alternatives are discussed at a level appropriate for an EIS covering all DOE SNF at a large number of sites and aimed at reaching a decision on the best strategy for managing of DOE SNF. Once an alternative has been selected, each action within the selected alternative may require additional documentation at the site-specific level to satisfy the provisions of the NEPA. Volume 2 is a site-specific assessment of SNF management, environmental restoration, and waste management alternatives at INEL. Therefore, the alternatives discussed in Volume 2 are more specific than those in Volume 1. However, some actions under Volume 2 alternatives may also require additional environmental documentation if they are part of the selected alternative.

04.03 (008) Alternatives Analyzed

COMMENT

The commentor states that the environmental restoration and waste management alternatives contain components that are unreasonable, and none of them matches what DOE plans to do.

RESPONSE

The proposed action presents a complex, almost infinite, number of possible alternatives. In this circumstance, NEPA requires evaluation of a reasonable range of specific alternatives. DOE's alternatives cover the full spectrum of reasonable alternatives ranging from minimizing environmental restoration and waste management activities at INEL, to maximizing those activities at the site. A decision based on these alternatives will be contained in the Record of Decision (ROD).

04.03 (009) Alternatives Analyzed

COMMENT

The commentor notes that the structure of the Decentralization alternative appears to dictate a result that targets the Savannah River Site and the Idaho National Engineering Laboratory.

RESPONSE

It is true that if the Decentralization alternative is selected and implemented as the DOE management strategy for SNF, SRS and INEL would receive most of the limited fuel transfers within the DOE complex. These receipts are only a small fraction of those proposed under other action alternatives or the SNF currently managed at these sites.

04.03 (010) Alternatives Analyzed

COMMENT

The commentor suggests that the EIS include some solutions like on-site storage in dual-purpose dry casks.

RESPONSE

Dry-cask storage is included in the activities identified in the overview of technologies in Volume 1, Appendix J. If a dual-purpose cask were licensed, it could be used for the SNF analyzed in this document.

In addition, DOE is preparing an EIS that considers use of a multi-purpose canister-based system for managing certain types of SNF.

04.03 (012) Alternatives Analyzed

COMMENT

The commentor considers interim centralization integral to a deep geologic repository and recommends a number of processing and remediation actions be taken.

RESPONSE

The processing and remediation suggestions proposed by the commentor are beyond the scope of this EIS, but will be addressed in the *Waste Management Programmatic EIS* or in site-specific NEPA documents.

04.03 (015) Alternatives Analyzed

COMMENT

Commentors state that the EIS does not explore alternatives for storing spent nuclear fuel other than at the Idaho National Engineering Laboratory.

RESPONSE

This EIS explores alternatives that would store SNF at locations other than INEL, as described in detail in Volume I, Chapter 3 and Appendix F, section 2.2. If INEL is not chosen as the western site, SNF could be stored at the Hanford Site, the Savannah River Site, the Oak Ridge Reservation, and the Nevada Test Site under the Centralization alternative and by the Regionalization by geography alternative. Under these alternatives, all SNF currently stored at INEL would be moved to other sites. The No Action and Decentralization alternatives would store the SNF close to the point of generation.

04.03 (016) Alternatives Analyzed

COMMENT

The commentor states that in some respects, it is difficult to determine the difference between the "decentralized" and "regionalized" approaches.

RESPONSE

The Decentralization alternative would maintain existing SNF at current locations and new SNF at or near the site of generation. The Regionalization alternative involves transporting SNF from one DOE site to another, with all of it stored at two or three DOE sites, based on fuel type or geography. These alternatives do have some features in common, e.g., under some options of each alternative, university and Navy SNF would be transported to DOE sites.

04.03 (017) Alternatives Analyzed

COMMENT

The commentor states that the EIS fails to identify alternative projects and analyze them because waste streams drive the EIS.

RESPONSE

The alternatives were identified in the *EIS Implementation Plan for the Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory* after a scoping process. Waste streams are identified individually in each alternative because of the unique handling, treatment, and storage needs; environmental regulations; and safety requirements associated with the activities included within the alternatives.

Volume 1, section 3.1 describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, and environmental restoration and waste management activities at INEL. See the responses to comments 04.04 (008) and 04.04 (011).

04.03 (018) Alternatives Analyzed

COMMENT

The commentor asks why other nations are not considered in this EIS as spent nuclear fuel storage alternatives.

RESPONSE

The United States nuclear weapons nonproliferation policy is summarized in the *White House Fact Sheet on Nonproliferation and Export Control Policy*, September 27, 1993. Under its nuclear nonproliferation policy, the United States seeks to reduce or eliminate, where possible, the accumulation of stockpiles of highly enriched uranium or plutonium. Based on these considerations, this alternative was eliminated from detailed analysis (see Volume 1, section 3.2 and Volume 1, Appendix D, section 3.6). In addition, the design and operating characteristics of the fuel for Naval reactors and certain portions of other SNF are classified. As such, foreign access is prohibited without going through a complex process prescribed in the Atomic Energy Act involving a government agreement approved by the President and reviewed by Congress. Such access is not allowed under existing agreements and strict Nuclear Regulatory Commission (NRC) licensing requirements.

04.03 (019) Alternatives Analyzed

COMMENT

The commentor notes that the alternatives evaluated in the EIS do not reflect DOE's spent fuel strategic plan.

RESPONSE

DOE issued the *DOE-Owned Spent Nuclear Fuel Strategic Plan* on December 30, 1994. The strategic plan is consistent with the alternatives in the EIS. The strategic plan needs to be reevaluated to ensure it reflects the strategic management options selected in the EIS ROD.

04.03 (020) Alternatives Analyzed

COMMENT

The commentor states that adding a "transition time" to the No Action alternative changes the intent of the alternative.

RESPONSE

The transition period required relates to the time needed to implement a specific alternative should it be selected. For any of the alternatives, time is needed for safe, orderly transition of SNF activities. For example, the transition time needed for the No Action alternative is described in Volume 1, Appendix D, section 3.8. As described therein, the transition would make use of existing facilities and transportation methods described under the alternatives considered. The risks associated with all of the alternatives considered for management of Naval SNF, summarized in Volume 1, Appendix D, Chapter 3, would be small, so the risks associated with the transition period would be just as small.

The EIS has been revised to reflect the transition period of 3 to 20 years, with the exception of the 1992/1993 Planning Basis alternative, which has no transition period.

04.03 (021) Alternatives Analyzed

COMMENT

Commentors state that the alternatives or the range of alternatives are inadequate.

RESPONSE

Volume 1, section 3.1 describes DOE's preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration and waste management activities at INEL. See the responses to comments 04.04 (008) and 04.04 (011).

The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives presented. For example, a hybrid alternative could be developed that would incorporate actions from one or more of the five alternatives analyzed. Moreover, the programmatic decisions will not identify all site-specific SNF management options. If appropriate, the decisions would be made after additional site-specific NEPA evaluation.

04.03 (026) Alternatives Analyzed

COMMENT

The commentor states that the EIS does not scientifically examine if Idaho would be safe to store waste and asks if any evidence exists.

RESPONSE

Volume 2, Chapter 5 examines the potential environmental consequences of the alternatives considered, many of which involve storing waste. This chapter explains the evaluations conducted and their results. Volume 2, section 3.3 summarizes and compares the potential consequences of the alternatives. All alternatives considered, including storing SNF in Idaho, would be safe, as evidenced by the small environmental impacts reported in this EIS. Supporting appendices and reference material provide increasing levels of detail on the scientific investigations conducted.

04.03 (027) Alternatives Analyzed**COMMENT**

Commentors state that some of DOE's spent nuclear fuel or foreign research reactor fuel should be processed overseas at existing facilities and must be included as an alternative in this EIS. One commentor expresses the opinion that the option of shipping spent nuclear fuel to British Nuclear Fuels chemical processing facilities in England is not the best choice.

RESPONSE

Volume I, section 3.2.5 and Appendix A have been revised in response to comments to include discussion of foreign processing of DOE SNF is being evaluated in the FRR EIS. SNF reprocessing to recover uranium and plutonium for defense purposes is being phased out. As discussed in Volume I, section 1.1.3, SNF processing is being evaluated for certain fuel types for purposes such as stabilization, which would not eliminate the need for storage and ultimate disposition, such as disposal. Any future decision to perform overseas processing of N-Reactor or any other specific SNF type will be subject to additional site-specific or program-specific NEPA review tiered from this EIS.

04.03 (031) Alternatives Analyzed**COMMENT**

The commentor notes that solutions do not exist to solve the problem of the spent nuclear fuel that DOE has already generated.

RESPONSE

Volume 1, section 3.1 and Volume 2, section 3.4 describe the preferred alternatives for SNF management nationally and at the INEL, respectively. See also the responses to comments 04.04 (008) and 04.04 (011).

The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives presented. For example, the ROD could incorporate actions from one or more of the five alternatives

analyzed. Moreover, the programmatic decisions will not identify all site-specific SNF management options. If appropriate, the decisions would be implemented after additional site-specific NEPA evaluation.

04.03 (032) Alternatives Analyzed

COMMENT

The commentor states that under some alternatives it could take years to build required facilities and suggests that specific language be included under each alternative to permit necessary actions, including the shipment of spent nuclear fuel to other sites and the provision of additional storage facilities on site.

RESPONSE

Volume 1, section 3.1 and Volume 1, Appendix D, section 3.8 describe the transition period required for implementation of the alternatives considered, and the impacts associated with the transition. The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives presented. For example, a hybrid alternative could be developed that would incorporate actions from one or more of the five alternatives analyzed. Moreover, the programmatic decisions will not identify all site-specific SNF management options. If appropriate, decisions on implementation would be made after additional site-specific NEPA evaluation.

04.03 (033) Alternatives Analyzed

COMMENT

The commentor questions how spent nuclear fuel handling experience accumulates with regard to the EIS Summary statement on page 21 that "DOE does not consider the Nevada Test Site to be a preferred site for the management of spent nuclear fuel because of the...Nevada Test Site's lack of current spent nuclear fuel handling experience."

RESPONSE

An overview of SNF management is in Volume 1, section 1.1, and the consequences of implementing the alternatives are presented in Volume 1, Chapter 5. Current management practices at each of the alternative sites are discussed in Volume 1, site-specific Appendices A through F, and the histories and past missions of these sites are also presented in these appendices. Supporting information on the types of SNF and their origins is given in Volume 1, Appendix J. Experience with handling DOE SNF generally has been acquired in connection with operating DOE nuclear reactors, particularly during refueling and storage activities. Several DOE sites also were prominently involved in past reprocessing of SNF to extract fissile materials for reuse. Relatively little reactor operation has occurred at the Nevada Test Site, and no reprocessing has occurred there. No SNF handling activities have occurred at the Nevada Test Site since 1986, as discussed in Volume 1, Appendix F, Part Two. See also the response to comment 04.03.01 (028).

04.03 (036) Alternatives Analyzed

COMMENT

The commentor states that the EIS leads one to believe that the Savannah River Site does not handle waste material as effectively as the INEL.

RESPONSE

This EIS analyzes all alternatives objectively. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

04.03 (037) Alternatives Analyzed

COMMENT

The commentor states that the EIS does not consider leaving Fort St. Vrain spent nuclear fuel in Colorado where it is currently stored in a Nuclear Regulatory Commission licensed storage facility, nor does it acknowledge that the foreign research reactor fuel could be processed or safely stored in Europe or the United Kingdom.

RESPONSE

Volume 1, Appendix E, section 2.2 addresses the alternative of leaving the Fort St. Vrain SNF in Colorado as an alternative to the Fort St. Vrain SNF Shipment and Storage Project. Under all of the alternatives considered, the impacts of the proposed alternatives would be small. See also the response to comment 04.03 (027).

04.03 (038) Alternatives Analyzed

COMMENT

The commentor notes that the description of the No Action alternative includes minimal spent nuclear fuel related research and development and it is not obvious why, because there is already plenty of spent nuclear fuel at the Idaho National Engineering Laboratory that could be used for research and development.

RESPONSE

Volume 1, section 3.1.1 discusses the No Action alternative. Section 3.1.1 shows that there would be no additional shipments to INEL, except during the transition period. The No Action alternative seeks to analyze a baseline condition of minimal activity against which the other alternatives can be measured; therefore, it is defined as having minimal research and development. Minimal research and development is not a consequence of ceasing shipments of SNF to INEL.

04.03 (039) Alternatives Analyzed

COMMENT

Commentors state that alternative descriptions in Volume 1, Tables 3-1 through 3-4 mention the fuel storage problems at Test Area North, but not at other storage facilities at the Idaho National Engineering Laboratory that were identified as not meeting current standards. The commentor adds that no matter what alternative is selected, spent nuclear fuel should be moved from all facilities that do not meet current standards.

RESPONSE

Volume 1, Appendix B, Table 3-2, and Volume 2, Appendix F detail potential SNF projects required for each alternative. Other potential upgrades or replacement facilities that may be required to implement a specific alternative at the site are included for each alternative analysis in Volume 1, section 3.1, and more detailed analyses are provided in the Volume 1 site-specific Appendices A through F.

04.03 (040) Alternatives Analyzed

COMMENT

The commentor states that after identifying the spent fuel problems to be addressed, that various alternatives for resolution should have been explored, including design of storage facilities, what types of processing and handling are needed, and whether alternative types of fuel can improve the safety of long-term storage.

RESPONSE

Volume 1, Chapter 2 states that DOE needs to make complex-wide strategic decisions for managing SNF for the next 40 years. The EIS further states that because DOE is not ready to decide on the ultimate disposition of SNF, alternatives for technologies for disposition are not within the scope of this EIS.

The EIS discusses the various vulnerabilities identified with existing SNF storage facilities around the DOE complex. These problems are addressed in the EIS under the various alternatives. Alternatives for resolving problems at individual sites will be addressed on a site-specific basis in separate environmental documentation.

DOE believes that the range of alternatives analyzed in the EIS are inclusive and in accordance with the philosophy of considering a full range of reasonable alternatives, as required by NEPA and CEQ regulations. Analysis and discussion of every alternative that can be postulated is an impossibly large task and is not required by existing regulations.

Volume 1, section 3.1 and Volume 2, section 3.4 describe the preferred alternatives for programmatic SNF management, and SNF management, environmental restoration, and waste management at the INEL respectively. See also the responses to comments 04.04 (008) and 04.04 (011).

04.03 (041) Alternatives Analyzed

COMMENT

The commentator notes that projections of and disposition plans for the volume of waste that would be generated by spent fuel activities are key issues that merit attention in the EIS.

RESPONSE

The projections of waste generation associated with SNF management activities are summarized for each alternative in Volume 1, section 5.1 of the EIS. For example, Figure 5-1 summarizes the projections for the No Action alternative. All waste generation data is summarized in Volume I, Appendix K. Additional site-specific information is provided in the Volume 1 site-specific Appendices A through F. DOE disposition plans will be negotiated on a site-specific basis under FFA/COs.

04.03 (042) Alternatives Analyzed

COMMENT

The commentator objects to the indefinite dates of storage and transport to a possible permanent site. The commentator asserts that nuclear fuel has been and will continue to be stored improperly. The commentator disagrees with DOE's position that the No Action alternative could result in a progressive loss or reduction of the safety margin. The commentator questions why such deterioration is expected under only the No Action alternative.

RESPONSE

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

Given the current first repository schedule and queue for emplacement, DOE must be prepared to store its SNF for an extended period, currently estimated not to exceed 40 years. DOE believes that the alternatives in the EIS represent reasonable alternatives for safely managing SNF.

The No Action alternative, which is required by NEPA, is an alternative analyzed as a baseline for comparison. This alternative assumes only minimal safety upgrades to existing facilities, and no new facilities. Under this alternative, existing conditions would largely continue and some fuel could deteriorate. On the other hand, all other alternatives proposed would use upgrades and new facilities to ensure improved storage conditions and to stabilize deteriorated SNF. See also the response to comment 06.01 (002).

04.03 (043) Alternatives Analyzed

COMMENT

The commentor states that the EIS should clarify in detail how hazardous waste management activities at the INEL will be handled under each alternative and how their differences will affect the facility's ability to comply with current regulatory requirements, such as land ban requirements.

RESPONSE

A discussion of hazardous waste management practices at INEL is provided in Volume 2, section 3.1.3, which notes that the DOE complex relies primarily on the private sector for disposal of hazardous waste at licensed and permitted facilities. Few changes from these practices are assumed for any alternative, so that the facility's ability to comply with current regulatory requirements, such as land ban requirements, are basically unaffected.

04.03 (045) Alternatives Analyzed

COMMENT

The commentor expresses the opinion that the mix and match of various proposals within the alternatives frustrates meaningful comment on the environmental acceptability of the future management of the INEL.

RESPONSE

Please see responses to comments 04.03.02 (007) and 05.08.03 (015). Additionally, the alternatives in the EIS are purposefully broad so that courses of action, bounded by the analyses of environmental consequences, can be developed and tailored within and between alternatives. Narrowing the scope of each alternative or increasing the number of alternatives to be more detail specific would further complicate the analysis and clear presentation of environmental consequences. DOE did not identify a preferred alternative in the Draft EIS, but has in the Final EIS following consideration of public

comments, including consultation with the Shoshone-Bannock Tribes. The course of action to be followed will be published in the ROD.

04.03 (047) Alternatives Analyzed

COMMENT

The commentor states that the EIS does not contain an alternative for low-level waste disposal.

RESPONSE

Volume 2, section 3.1 discusses alternatives for low-level waste disposal. Volume 2, Appendix F discusses project-specific options for low-level waste disposal. The impacts for the alternatives are discussed in Volume 2, Chapter 5, and would be small for all of the alternatives evaluated.

04.03 (048) Alternatives Analyzed

COMMENT

The commentor states that all storage should be monitored and not be in caverns or where it cannot be monitored and retrieved if necessary.

RESPONSE

Volume I, section 3.1 summarizes the alternatives considered for managing SNF in this programmatic EIS. All of the alternatives considered would provide monitored and retrievable storage over the 40-year period discussed in this EIS.

04.03 (049) Alternatives Analyzed

COMMENT

The commentor suggests that the No Action alternative take maximum actions for safe and secure management of spent nuclear fuel.

RESPONSE

DOE agrees that actions must be taken for safe and secure SNF management. Volume I, section 3.1 describes the No Action alternative, which is required by NEPA.

The DOE assessment of SNF vulnerabilities summarized in Volume I, section 1.1 demonstrates that DOE must implement a minimal program to protect the environment and the health and safety of workers and the public. The No Action alternative provides a baseline for comparison of the impacts of the other alternatives. These impacts are summarized in Volume I, Table 3-1.

04.03 (051) Alternatives Analyzed

COMMENT

The commentor states that the alternatives are not acceptable.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject.

The NEPA, 42 USC Section 4371 et seq., and CEQ regulations at 40 CFR Section 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

04.03 (052) Alternatives Analyzed**COMMENT**

The commentor states that the EIS does not cover research and development activities to render the spent nuclear fuel to a stable, environmentally benign form.

RESPONSE

Volume 1, section 3.1 and Appendices A through F cover a range of research and development activities, including an overview of potential technologies for SNF management. DOE's preferred alternative for SNF management, discussed in Volume 1, section 3.1, states that research and development would be undertaken for SNF management, including stabilization technologies.

04.03 (053) Alternatives Analyzed**COMMENT**

The commentor asserts that the document indicates differences between alternatives and suggests that the alternatives that are better than others be identified.

RESPONSE

Volume 1, Chapter 5 and Appendix K. and Volume 2, Chapter 5 summarize the environmental impacts associated with all the alternatives considered in this EIS. The analysis shows that the impacts for all the alternatives considered would be small. While there are differences in the impacts among all these alternatives, the differences, by themselves, do not distinguish between the alternatives. Additional factors, such as agency mission, costs, ease of implementation, and public comments were considered in the identification of the preferred alternatives. These alternatives are identified in Volume 1, section 3.1 and Volume 2, section 3.4. See also the responses to comments 04.04 (008) and 04.04 (011).

04.03 (054) Alternatives Analyzed

COMMENT

The commentor states that foreign and private domestic processing of spent nuclear fuel must be included as an alternative in the EIS.

RESPONSE

Volume 1, Chapter 3 describes the alternatives considered in this programmatic EIS. Based on public input, Volume 1, section 3.2 was revised to include the evaluation of an option for foreign processing of N-Reactor SNF for the purposes of stabilization. No private facilities are known to exist for the processing of DOE SNF that could serve as reasonable alternatives compared with those evaluated in the EIS. Whereas DOE has an obligation under the NEPA to evaluate a range of reasonable alternatives (including the No Action alternative, whether deemed reasonable), NEPA and CEQ regulations clearly give deference to the discretion of the agency, in this case DOE, to dismiss alternatives that the agency considers unreasonable given the parameters of the purpose and need for the agency action. DOE believes this EIS presents a reasonable range of alternatives, and has been responsive to public comments by evaluating the option of foreign processing in Volume 1, section 3.2, as discussed. See also the response to comment 04.03.01 (001).

DOE has evaluated the potential need for processing SNF for stabilization purposes. Details can be found in Volume 1, Appendices A through C. Volume I, Appendix D, section 3.6.2 has been expanded to further explain why this alternative is not reasonable for Naval SNF.

04.03 (055) Alternatives Analyzed

COMMENT

The commentor questions why the alternative with the least environmental impact is not identified and preferred.

RESPONSE

There are no clear environmental discriminators between alternatives.

04.03 (056) Alternatives Analyzed

COMMENT

The commentor states that the EIS should discuss the use of existing spent nuclear fuel handling facilities at the Nevada Test Site, specifically E-MAD and R-MAD, in tandem with disposal at the Yucca Mountain site as a viable and cost-effective alternative that would minimize transportation requirements.

RESPONSE

Although the Nevada Test Site (NTS) is evaluated in the EIS as an alternative site for SNF management activities, DOE does not consider it to be a preferred site because Nevada is the host site for the Yucca Mountain Site Characterization Project and the Nevada Test Site lacks current SNF handling experience. As stated in Volume 1, Appendix F, Part Two, section 3.1, the Nevada Test Site provides a contrast to other potential sites because it represents a site that has no existing SNF infrastructure and does not currently generate or store any SNF. The existing SNF handling facilities mentioned by the commentor were not built or maintained to current design standards and without extensive analysis it is uncertain whether they may meet the minimum requirements necessary to consider them for modification. See also the response to comment 04.04 (008).

04.03 (057) Alternatives Analyzed**COMMENT**

The commentor states that the Barnwell Plant should be considered and discussed in more detail as a viable alternative site for spent nuclear fuel management.

RESPONSE

The Barnwell Plant is considered for examination and storage of Naval SNF. A description of the Barnwell Plant and a discussion of its capabilities for Naval SNF storage and examination work is in Volume I, Appendix D, Attachment E. As summarized in Attachment E, the Barnwell Plant would have to be acquired by DOE from its present private owners, and it would cost about \$800 million to acquire and modify the plant. Once modified, the plant would provide the full range of water-pool and shielded-cell examination capabilities; however, the capability of the plant could be less than that of existing facilities at INEL.

04.03 (058) Alternatives Analyzed**COMMENT**

The commentor expresses an opinion that the EIS does not address alternatives, it simply moves spent nuclear fuel around.

RESPONSE

Further shipments of spent nuclear fuel (SNF) would likely be needed when a decision is made regarding ultimate disposition in a repository. Assessment of the impacts of these shipments is not included in this EIS because the method for ultimate disposition has not been selected and such analyses would be premature. Volume 1 of the EIS describes the alternatives for managing of SNF until 2035. This amount of time may be required to make and implement a decision on ultimate disposition of DOE SNF. DOE has evaluated in the EIS a range of reasonable alternatives for safely managing SNF during the period 1995 to 2035.

To inform the public concerning SNF transportation issues, this EIS evaluates the impacts of transportation for a reasonable range of alternatives. The alternatives vary from no action, involving limited transport of radioactive material, to centralization, which involves extensive transport of radioactive material. The analyses in the EIS show that the potential risks from transportation of SNF would be small for all the alternatives considered. Based on comments received during public review of this EIS, minimizing transportation is one of the factors to be considered in the DOE decision-making process that will ultimately lead to a ROD.

04.03 (061) Alternatives Analyzed

COMMENT

The commentor states that the EIS fails to adequately assess alternatives, stating that high-level waste remains at the INEL under all alternatives analyzed. A specific example given was that all of the alternatives presented by DOE keep INEL high-level waste management activities at the Idaho Chemical Processing Plant, a site directly above the Snake River Plain aquifer.

RESPONSE

The EIS adequately considers a reasonable range of alternatives for managing high-level wastes. The commentor's implication that DOE should consider an alternative to move high-level waste to another site is not technically feasible. Because the Snake River Plain aquifer is hydrologically connected to, or beneath, the entire INEL site, on-site movement of the calcine for storage achieves no reduction in perceived risk to the aquifer. Liquid high-level waste can be transported, only by pipeline. Any alternative that would move this waste to another location, whether onsite or offsite, is thus considered unreasonable. The amount of high-level waste that is subjected to calcining to convert from a liquid to a solid waste form does, however, vary by alternative. The option of relocating the calcine bins from the Idaho Chemical Processing Plant to another DOE facility is not reasonable because the cost of constructing new bins is prohibitive. Therefore, for purposes of this EIS, proposed high-level waste management activities are assessed at the INEL Idaho Chemical Processing Plant.

04.03 (063) Alternatives Analyzed

COMMENT

The commentor requests that the EIS include specific corrections regarding spent nuclear fuel storage at the Oak Ridge Reservation.

RESPONSE

Volume I, section 4.5 summarizes the affected environment of the Oak Ridge Reservation (ORR). This section has been modified to clarify that the Y-12 Plant stores SNF but does not generate or manage high-level waste or transuranic waste.

04.03 (064) Alternatives Analyzed

COMMENT

Commentors question DOE's expertise and infrastructure with regard to capability to handle spent nuclear fuel.

RESPONSE

DOE has a program to safely manage and store radioactive materials (including both radioactive wastes and SNF) at each of the sites considered in this EIS. The potential impacts of storing SNF and associated mitigation measures are discussed in Volume 1, Chapter 5. Supporting information on types of SNF and storage options for them is provided in Volume 1, Appendix J. Management and storage of radioactive wastes at INEL are described in Volume 2, Chapters 1 and 2. DOE's policy is to comply with all applicable Federal, State, and local regulations and DOE Orders. All radioactive materials will be managed to ensure protection of the environment and the health and safety of the public and site employees.

One of the concerns that must be addressed prior to ultimate disposition is that the waste may outlast some storage methods. While ultimate disposition is outside the scope of this EIS, DOE is researching and developing disposition technologies that will address the issue of the longevity of the waste and ensure that the public and environment are protected.

General solutions proposed for managing SNF fuel are discussed in Volume 2, Chapters 1 and 2. However, alternatives for safely managing SNF in the meantime are discussed in Volume 1, section 3.1.

04.03 (065) Alternatives Analyzed

COMMENT

The commentor states that placement of the West Bear Creek Valley site for spent nuclear fuel use demonstrates a total lack of regard for local populations and the environment.

RESPONSE

In response to public comments during the scoping process for this EIS, DOE conducted a screening process to identify additional reasonable alternative sites. The screening process was used solely to identify additional reasonable alternative sites for consideration and analysis in the EIS. Thus, the existing reasonable alternatives were not included in this process, because they had already been selected as reasonable potential sites by DOE. Pursuant to the screening process, the Oak Ridge Reservation (ORR) in Oak Ridge, Tennessee, and the Nevada Test Site (NTS) near Las Vegas, Nevada, were added as reasonable alternatives for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10. Other sites were not considered reasonable for analysis in this EIS.

Identification of potential sites was based on factors including land ownership or current use, current or former spent nuclear fuel management infrastructure, transportation, and relocation of spent nuclear fuel. Realistic sites then were evaluated by using statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementation considerations. Final decisions also considered factors such as programmatic needs, mission conflicts, and timing. The conduct of and conclusions from this process are documented in the *Alternative Site Selection Decision Process Report*, which is summarized in Volume 1, section 3.2.3.

Specific information is not available on facilities that have not been fully designed and constructed. Such data are also not available for future activities, such as decontamination projects that have not occurred and treatment of waste streams whose treatment plans have not been finalized. Generic projects have been included in the EIS to present readers with as comprehensive a range of forthcoming projects as is possible. These projects or facilities may require additional analysis under the National Environmental Policy Act. By analyzing generic projects at the various alternative sites, DOE can reasonably compare the impacts of these activities on a programmatic level.

4.3.1 Siting Alternatives

04.03.01 (001) Siting Alternatives

COMMENT

Commentors request that sites being analyzed in the EIS be removed from consideration, stating facilities at various locations may be illegal, and that other sites represent reasonable, or more reasonable alternatives, than those under consideration. One commentor notes the distinction between a prohibited monitored retrievable storage facility and facilities under the Centralization alternative.

RESPONSE

In response to public comments during the scoping process for this EIS, DOE conducted a screening process to identify additional sites to the eight sites then considered reasonable alternatives for managing SNF. As a result of the screening process, ORR near Oak Ridge, Tennessee, and NTS near Las Vegas, Nevada, were added as reasonable alternative sites for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10. Other sites were not considered reasonable for analysis in this EIS.

Potential sites were identified based on such factors as land ownership or current use, current or former SNF management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated considering statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementability. As a result of this screening process, based largely on the

basic qualities and locations of the sites, a list of seven sites was forwarded to the decisionmakers as reasonable siting alternatives in addition to the eight sites already deemed reasonable. In addition to site qualities and location, the decisionmakers also considered factors such as programmatic needs, mission conflicts, and timing. The conduct and conclusions of this process are documented in the *Alternative Site Selection Decision Process Report*, which is summarized in Volume 1, section 3.2.3 of the EIS.

Section 145(g) of the Nuclear Waste Policy Act, as amended (the Act), prohibits the construction of a monitored retrievable storage facility [pursuant to Section 142 (b) of the Act] in the State of Nevada. However, a facility to manage DOE SNF would not be classified as a monitored retrievable storage facility within the meaning of Section 142(b) of the Act. A facility to manage DOE SNF would be classified as constructed and operated pursuant to the Atomic Energy Act of 1954 and would serve a different purpose from that served by a monitored retrievable storage facility.

DOE believes that the range of alternatives analyzed in this EIS are inclusive and in accordance with the philosophy of considering a full range of reasonable alternatives required by provisions of NEPA and CEQ regulations. Analysis and discussion of all alternatives that can be postulated is an impossibly large task and is not required by existing regulations. Although a site may represent a reasonable alternative for analysis in the EIS, no decision has been made as to the level of SNF management activity at any site. This decision will be made by the Secretary of Energy in a published ROD.

04.03.01 (002) Siting Alternatives

COMMENT

Commentors request that the Oak Ridge Reservation or the Nevada Test Site be removed from consideration, stating that state legislative actions or the Nuclear Waste Policy Act prohibit other spent nuclear fuel storage at these sites. Other commentors also question why only two sites were added to the original three sites selected for possible spent nuclear fuel management.

RESPONSE

The Nuclear Waste Policy Act, as amended [section 145(g)], prohibits the storage of commercial SNF in a monitored retrievable storage facility in Nevada. In addition, the Nuclear Waste Policy Act, as amended [section 142(a)], annulled and revoked the DOE proposal to locate a monitored retrievable storage facility on or near ORR in Tennessee. However, a facility to store DOE SNF is not considered monitored retrievable storage under the Nuclear Waste Policy Act, as amended. Consequently, NTS and ORR are viable alternatives for the purposes of this EIS and, therefore, were added to the original three sites.

In response to public comments during the scoping process for this EIS, DOE conducted a screening to identify additional sites to the eight sites then considered reasonable alternatives for the managing of SNF. As a result of a disciplined screening, ORR and NTS were added as reasonable alternative sites for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10. Other sites were not considered reasonable for analysis in this EIS. The Nevada Test Site is not considered to be a preferred site because of the state's current role as the host site for the Yucca Mountain Site Characterization Project and due to the site's lack of SNF infrastructure.

Potential sites were identified based on such factors as land ownership or current use, current or former SNF management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated considering statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementability. Final decisions also considered such factors as programmatic needs, mission conflicts, and timing. The conduct and conclusions of this process are documented in the *Alternative Site Selection Decision Process Report*, which is summarized in Volume 1, section 3.2.3 of the EIS.

As indicated in the May 9, 1994 Amendment to the *Implementation Plan for the Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Impact Statement*, DOE developed a three-step process to screen the potentially infinite number of siting options that could exist for various levels of SNF management activity. During the public hearings, DOE became aware that some commentors thought the amendment to the Implementation Plan was intended to be the detailed report of the alternative site-selection process. Commentors were referred to the *Alternate Site Selection Decision Process Report* for the details and conclusions of the conduct of the process.

04.03.01 (003) Siting Alternatives

COMMENT

The commentor notes that the location selected for the potential spent nuclear fuel management facility at the Oak Ridge Reservation will be next to the Y-12 "walk-in pits," which contain shock-sensitive pyrophoric chemicals.

RESPONSE

The Y-12 pits are actually 4 miles from the West Bear Creek Valley site selected for potential SNF management activities at ORR. The distance is accounted for in accident impacts and in cumulative impacts in the EIS, and no significant adverse environmental or health and safety impacts are reasonably foreseen as a result of the proximity of the Y-12 pits.

04.03.01 (005) Siting Alternatives

COMMENT

The commentor is of the opinion that the selection of the West Bear Creek Valley site on the Oak Ridge Reservation was improper and did not adequately consider the site's geology. The commentor questions locating the proposed spent nuclear fuel management facilities in the watershed of Grassy Creek. The commentor also indicates that State of Tennessee geologists have concluded that hydrogeological conditions indicate that Bear Creek Valley is not suitable for storing or disposing of hazardous waste material of any type, as stated in a U.S. Geological Survey report. The commentor expresses the opinion that the mechanism for transport of contaminants in the subsurface is too complex to model, and that there is too great a potential for contaminating the Knox aquifer.

RESPONSE

ORR and NTS were selected as alternative sites as a result of the public comments received during the EIS scoping process. Information about the selection process for the site on ORR is provided in *Request for Support in Preparing the Spent Nuclear Fuel and INEL Environmental Restoration and Waste Management Environmental Impact Statement*. The selection of the West Bear Creek Valley Site on ORR did include consideration of impacts to geology and water resources. The West Bear Creek Valley Site was selected and evaluated and compared in the EIS. Adequate information is provided to make programmatic decisions. If ORR is selected to be the SNF management facility, more detailed analysis of the site would be performed in tiering NEPA documentation.

There is very little potential for water quality impacts to Grassy Creek and the Clinch River from the operation of proposed SNF management facilities, which are designed to have no liquid release of waste water with hazardous chemical or radiological characteristics. These facilities would be designed to include secondary containment, leak detection, and water balance monitoring equipment. No significant impacts to water quality in either Grassy Creek or the Clinch River are anticipated from the sanitary effluent outfall to Grassy Creek. This outfall would be a permitted discharge that is monitored as required for permit compliance. Therefore, no significant environmental consequences related to water resources are anticipated from the operation of SNF management facilities.

The State of Tennessee Department of Environment and Conservation correspondence dated August 31, 1994, commented extensively on the EIS. State geologists cite *Geologic and Hydrologic Studies* by the U.S. Geological Survey (1959) as concluding, "It appears that the favorable areas available are not sufficient to warrant consideration of Bear Creek Valley for use as a regional burial ground for solid radioactive waste." The EIS does not consider any burial alternatives for SNF management. The alternatives considered include only SNF interim storage and treatment facilities.

The ORR Energy Systems Waste Management Office has identified large portions of ORR as suitable waste management areas. The proposed SNF management site is included in the areas. The suitability of the site is due primarily to soil type that meets specific waste management criteria and the geographic location within the ORR. Again, no materials would be buried as part of the proposed action or any of the alternatives in this EIS.

If ORR is chosen as a site for SNF management, site-specific surface and groundwater studies may be required to support follow-up NEPA reviews.

There is very little potential for contamination of the Knox aquifer from the operation of proposed SNF management facilities, which are designed to have no liquid release of waste water with hazardous chemical or radiological characteristics. These facilities would be designed to include secondary containment, leak detection and water balance monitoring equipment. Therefore, no significant environmental consequences related to water resources are anticipated from the operation of SNF management facilities.

Impacts to geology and water resources for ORR are discussed in the EIS in Volume 1, Appendix F, Part Three, sections 5.6 and 5.8, respectively.

04.03.01 (006) Siting Alternatives

COMMENT

The commentor indicates that the selection of the Oak Ridge Reservation and the Nevada Test Site does not logically flow from the siting parameters stated. In addition, the commentor indicates that conflicts in program missions were not considered and that DOE ought to better coordinate the activities of defense programs with the Office of Civilian Radioactive Waste Management.

RESPONSE

As documented in the *Alternative Site Selection Decision Process Report*, the parameters quoted by the commentor were used to evaluate categories of sites, such as DOE sites with infrastructure. The commentor is also referred to this report for details as to the conduct of the process that is summarized in the EIS, Volume 1, section 3.2.3. Once categories of sites were considered realistic based on this initial screening, individual sites were evaluated through a set of screening factors to identify those sites that appeared attractive for further consideration by DOE decisionmakers. Thus, sites like ORR and NTS passed both screenings, along with five others sites, and were considered candidates for consideration as reasonable sites. NTS, which has no SNF infrastructure, passed the initial screening due to a bypass on

the logic diagram (Attachment 1 to the report) designed to allow consideration of sites without infrastructure. Both sites were considered reasonable for consideration due to attributes discussed in the report.

The site-selection task process was designed to present DOE managers with a list of sites that appeared most attractive based on individual site qualities, including relative location, without programmatic considerations such as conflict in site missions. Although in cases the site-selection task group did indicate potential mission conflict concerns (see Attachment 4 to the report), the weighing of programmatic considerations such as mission conflicts and implementation practicabilities were left to the decisionmakers. There are regular coordination of activities between the Office of Civilian Radioactive Waste Management and Defense Programs concerning DOE SNF covered in this EIS.

04.03.01 (007) Siting Alternatives

COMMENT

The commentor states that the proximity to an aquifer or the presence of groundwater contamination being characterized as a disadvantage when evaluating alternative sites for consideration in the EIS requires the same disclosure for the INEL. The commentor also states that hydrogeologic conditions are of great importance in the siting decisions for spent nuclear fuel. Groundwater concerns become pertinent in the event of releases from leaks or spills. Also the potential for seismic action should have been considered evenhandedly in the selection of sites to be considered for SNF management activities.

RESPONSE

Under NEPA, DOE is required to consider a full range of reasonable alternatives, which in this EIS includes sites with nearby surface-water and groundwater resources. The potential environmental consequences of implementing the alternatives at the alternative sites have been evaluated in Volume 1, Chapter 5 of the EIS, which concludes that such impacts from all alternatives would be small. This conclusion includes the potential impacts on nearby or adjacent water resources at each of the potential sites. A discussion of this topic can be found in the water resources sections in Volume 1 and its associated site-specific Appendices A through F. DOE will consider these potential impacts when making its final decision.

The site-selection task team did consider the proximity to aquifers and seismic concerns as a relative disadvantage in evaluating a number of potential sites through detailed screening criteria. This comparison is in Attachment 4 to the *Alternative Site Selection Decision Process Report*. This set of screening criteria was used to identify sites that appeared attractive for further consideration by DOE decisionmakers. Proximity to aquifers and areas of high seismicity are certainly appropriate considerations in siting DOE activities, including managing SNF.

INEL was one of three DOE and five Naval sites originally identified as reasonable siting alternatives for consideration in this EIS. In response to public comments during the scoping process for this EIS, DOE committed to conduct a screening process to identify additional sites for managing SNF. The original three DOE and five Naval sites were not considered in this process.

The EIS pays particular attention to geologic considerations such as seismicity at each of the sites under consideration, including the Snake River Plain, upon which INEL is located. Characterization of seismicity and its potential impacts were evaluated and discussed in the EIS.

04.03.01 (009) Siting Alternatives

COMMENT

The commentor expresses the opinion that potential sites on the priority list for cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act are being characterized as disadvantages when evaluating alternative sites for consideration in the EIS requires the same disclosure for INEL.

RESPONSE

DOE did consider that potential sites were on the priority list for cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as a relative disadvantage in evaluating a number of potential sites through detailed screening criteria. This comparison is in Attachment 4 to the *Alternative Site Selection Decision Process Report*. This set of screening criteria was used to identify sites that appeared attractive for further consideration by DOE decisionmakers. Concerns over conflicts with CERCLA activities are certainly appropriate to consider in siting DOE activities, including SNF management.

INEL was one of eight sites originally identified as reasonable siting alternatives for consideration in this EIS. In response to public comments during the scoping process for this EIS, DOE committed to conduct a screening process to identify additional sites. The original eight sites were not reevaluated in this process.

The EIS characterizes sites under consideration including INEL, as to CERCLA activities. Volume 2 of the EIS bounds such activities within the alternatives under consideration for INEL through 2005. Siting of SNF management activities (or any activities) at each of the sites must integrate ongoing activities, including those being managed under CERCLA. Large sites, such as INEL, usually present more opportunities to accommodate siting additional activities without conflicts to those committed to or in progress.

04.03.01 (010) Siting Alternatives

COMMENT

The commentor expresses the opinion that in several instances, the process used to evaluate alternative sites considered proximity to tribal lands and cultural resources as a disadvantage, yet the EIS dismisses the interests of tribes in the proximity of sites originally considered for evaluation in the EIS, such as the INEL.

RESPONSE

The site-selection task team did consider the proximity to tribal lands and cultural resources as a relative disadvantage in comparing a number of potential sites through detailed screening criteria. This comparison is in Attachment 4 to the *Alternative Site Selection Decision Process Report*. This set of screening criteria identified sites that appeared attractive for further consideration by DOE decisionmakers. Proximity to tribal lands and cultural resources is certainly appropriate to consider in siting DOE activities, including SNF management.

INEL was one of eight sites originally selected as reasonable siting alternatives for consideration in this EIS. In response to public comments during the scoping process for this EIS, DOE committed to identify additional sites. The original eight sites were not considered in this process.

DOE does not dismiss the interests of the tribes near existing sites, nor take them lightly in siting and operating its facilities. Consultations have taken place during the preparation and review of the EIS, and continue. DOE has discussed the concerns of the tribes with respect to their comments regarding the adequacy of the EIS, as well as their concerns regarding the potential effects of decisions facing DOE on the tribes' homelands and interests. The EIS has been revised to more adequately address the tribes' concerns as presented in the tribes' comments on the EIS and in related consultations.

04.03.01 (012) Siting Alternatives

COMMENT

Commentors note that the site-selection process used to identify additional reasonable sites for consideration in the EIS was skewed away from sites where interim storage only can occur, and away from port sites where spent nuclear fuel has been handled. Processing decisions have not been made and are unlikely to be made in the future. Commentors also state that too much emphasis is placed on site size and available infrastructure in evaluating potential alternative sites for consideration in the EIS, though these factors were not used for the baseline decision, interim storage.

RESPONSE

In response to public comments during the scoping process for this EIS, DOE committed to identify additional sites to the eight sites then considered reasonable siting alternatives for SNF management.

The conduct and conclusions of this process are documented in the *Alternative Site Selection Decision Process Report*, which is summarized in Volume 1, section 3.2.3 of the EIS.

Potential sites were identified based on such factor as land ownership or current use, current or former SNF management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated considered statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementability. Final decisions also considered such factors as programmatic needs, mission conflicts, and timing.

Site size and location is an appropriate consideration for interim management of SNF pending ultimate disposition. In addition to SNF storage, there is a possibility that additional processes will need to be sited and operated to further stabilize and possibly tailor SNF to meet whatever criteria evolves from eventual decisions as to ultimate disposition of the various types of SNF. Therefore, as discussed in the decision process report, assumptions were made as to minimum order of magnitude site sizes for foreseeable potential activities. The larger sites provide more flexibility to fully manage SNF pending ultimate disposition than the smaller sites, and thus have the attractive advantage of possibly precluding additional shipments of SNF to larger sites for further processing or tailoring in the future, as possibly dictated by criteria for ultimate disposition. The *Alternative Site Selection Decision Process Report* states these considerations and the basis for assumptions used in the conduct of the process. In addition to evaluating large sites for consideration, smaller sites were also evaluated for a lesser scope of SNF management activity, limited to storage and research and development only. Only sites considered too small for basic storage operations were eliminated from further consideration of any management activity.

The sites that were ultimately recommended to the decisionmakers as appearing most attractive were mostly larger sites due to the relative attractiveness that site size presents from not only the ability to site more complex activities, but also to provide more isolation from the public and present more opportunities to site activities without conflict with other activities on site, either current or reasonably foreseen.

04.03.01 (014) Siting Alternatives

COMMENT

The commentor expresses an opinion that the EIS improperly excludes sites from consideration as alternatives. The commentor further states that the criteria used to select candidate sites is too narrow, favors remote sites, and involves shipments to INEL under all spent fuel management alternatives.

RESPONSE

INEL is one of three DOE and five Naval sites originally selected as reasonable alternative sites for consideration in this EIS. INEL was selected because of the many years of DOE experience conducting large-scale SNF management operations at that site. The same is true for the Savannah River Site in South Carolina and the Hanford Site in Washington. Accordingly, these sites, and the five sites limited to Naval fuel only (which have similar years of SNF management experience), were considered reasonable alternatives for consideration of various levels of programmatic SNF management activities. INEL would receive SNF for management under all alternatives except No Action and Centralization of all SNF activities at one of the other five main sites. INEL would continue to receive SNF under all other alternatives due largely to its current infrastructure and historical expertise in managing such materials. Under the No Action alternative, there is a 3-year transition period in which the Navy would continue to ship SNF to INEL for examination.

In response to public comments during the EIS scoping, DOE screened to identify additional reasonable alternative sites for consideration and analysis in the EIS. Thus, the existing reasonable alternatives were not reevaluated in this process, because they had already been selected as reasonable potential sites by DOE.

Potential sites were identified based on such factors as land ownership or current use, current or former SNF management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated considering statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementability. As a result of this screening process and based largely on the basic qualities and locations of the sites, a list of the seven sites was forwarded to the decisionmakers for consideration in the EIS in addition to the eight sites already deemed reasonable. In addition to site qualities and location, the decisionmakers ultimately also considered such factors as programmatic needs, mission conflicts, timing, expertise, and infrastructure. The conduct and conclusions of this process are documented in the *Alternative Site Selection Decision Process Report*, which is summarized in Volume 1, section 3.2.3 of the EIS.

Pursuant to the screening process, ORR and NTS were added as reasonable alternatives for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10.

DOE believes that the range of alternatives analyzed in the EIS is inclusive and in accordance with the philosophy of considering a full range of reasonable alternatives required by NEPA and CEQ regulations.

04.03.01 (017) Siting Alternatives

COMMENT

The commentors express an opinion that DOE consider sites such as the Capitol building, the Pentagon, and the like for the management of spent nuclear fuel.

RESPONSE

Such comments do not provide substance conducive to a response. DOE recognizes that some commentors disagree with the need for and reasonable alternatives being considered to manage SNF. Volume I section 3.1 describes DOE's preferred alternative.

04.03.01 (019) Siting Alternatives

COMMENT

The commentor states that the sites selected initially as reasonable alternatives for the management of spent nuclear fuel were selected only because they already manage nuclear waste.

RESPONSE

The original eight sites selected as reasonable alternatives for some level of SNF management activity have experience in such activities, which range from large-scale SNF management (storing, reprocessing, etc.) at the three large DOE sites, to handling activities limited to Naval SNF at the five smaller sites. Accordingly, these sites represent reasonable siting alternatives for a range of SNF management activities proposed in this EIS, per the October 29, 1993, *Implementation Plan for the Department of Energy Programmatic Spent Nuclear Fuel Management and Idaho National Engineering Laboratory Environmental Impact Statement*.

In response to public comments during the scoping process for this EIS, DOE committed to identify any additional reasonable sites for SNF management. After a screening process, ORR and NTS were added as reasonable alternatives for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10.

Potential sites were identified based on such factors as land ownership and current use, current or former SNF management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated by considering statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementability. Final decisions also considered programmatic needs, mission conflicts, timing, etc. The conduct and conclusions of this process are documented in the *Alternative Site Selection Decision Process Report*, which is available in the reading rooms and information locations identified in the EIS.

04.03.01 (020) Siting Alternatives

COMMENT

The commentor states that the Oak Ridge Reservation is artificially constrained to the Regionalization and Centralization alternatives when the *Alternative Site Selection Decision Process Report* states that any site that is qualified for those alternatives is worthy of consideration for the other alternatives.

RESPONSE

Prior to selection as a reasonable site for all SNF management alternatives, ORR was being considered for SNF management activities under the No Action, Decentralization, and 1992/1993 Planning Basis alternatives. Under these alternatives, ORR either would manage its current and yet-to-be-generated SNF onsite, or would ship such SNF offsite per the 1992/1993 Planning Basis alternative, essentially to SRS.

Based on the alternative site selection process discussed in Volume 1, section 3.2.3 of the EIS, ORR was also selected as a reasonable alternative for all levels of SNF management activity, thus adding it to consideration under the Regionalization and Centralization alternatives. The *Alternative Site Selection Process Report* indicates that any site considered reasonable for the Regionalization and Centralization alternatives is also considered reasonable for a lower level of SNF management activity. That is, if a site is reasonable for managing all DOE SNF, it must also be reasonable for managing a smaller amount.

Of the two sites added as a result of the Secretary of Energy's decision, ORR is considered reasonable for all levels of SNF management activity, while NTS is considered only for the Regionalization and Centralization alternatives. This is because NTS does not currently manage SNF, and thus the No Action, Decentralization, and 1992/1993 Planning Basis alternatives do not apply.

04.03.01 (021) Siting Alternatives

COMMENT

The commentor indicates that spent nuclear fuel management is an international problem; however, the commentor does not want it managed at the North Pole or in the South Pacific as suggested in a magazine article.

RESPONSE

In response to public comments during the scoping process for this EIS, DOE committed to identify additional sites to the eight sites then considered reasonable alternatives for managing SNF. As a result of the screening process, ORR and NTS were added as reasonable alternatives for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10.

Potential sites were identified based on such factors as land ownership and current use, current or former spent nuclear fuel management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated considering statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, conflicts, timing, etc. The conduct and conclusions of this process are documented in the *Alternative Site Selection Decision Process Report*, which is available in the reading rooms and information locations identified in the EIS.

04.03.01 (023) Siting Alternatives

COMMENT

The commentor raises questions about what might actually be done with spent nuclear fuel at the Savannah River Site and about future site-specific decisions.

RESPONSE

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

Future site-specific decisions will involve NEPA reviews tiered from this programmatic EIS. These decisions will also include input from the public as appropriate under NEPA.

04.03.01 (025) Siting Alternatives

COMMENT

The commentor states that nowhere in the EIS can one find consideration of the suitability, or lack thereof, of the sites being considered for spent nuclear fuel management.

RESPONSE

Volume 1, section 1.3.1 summarizes the consideration of the suitability of the sites selected. Additional details are in the *Alternative Site Selection Decision Process Report*, which is referenced in the EIS.

04.03.01 (028) Siting Alternatives

COMMENT

The commentor states that the logic of designating the Nevada Test Site as a "nonpreferred" site based on equity concerns and lack of infrastructure is flawed. The commentor states that there is no provision in the National Environmental Policy Act for a nonpreferred alternative, and nothing in the Nuclear Waste Policy Act would prohibit storage of DOE spent nuclear fuel in Nevada. The commentor also states that in the event that DOE does not site the repository in Nevada, a reasonable site for spent nuclear management will have been eliminated without cause. Further, the commentor states that equity is not a reasonable basis to designate the Nevada Test Site as nonpreferred, because other sites have spent nuclear fuel currently in storage; nor is the site's lack of infrastructure a reasonable basis to designate it as nonpreferred, because any grainfield site lacks infrastructure, and the EIS acknowledges the need to build additional spent nuclear fuel storage facilities at any of the sites under consideration.

RESPONSE

The designation of NTS as a nonpreferred site is to alert EIS reviewers that DOE has both technical and equity reservations that make NTS less attractive than other reasonable alternatives. This designation was intended to communicate DOE's programmatic reservations with this site.

DOE identified NTS as a reasonable alternative site despite its lack of infrastructure. Although reasonable, the lack of infrastructure may be considered unfavorably in comparison with the other sites being considered, as one of numerous considerations in arriving at a ROD. The consideration of sites without infrastructure is in keeping with public comments on the EIS Implementation Plan.

DOE recognizes that the other four DOE sites being evaluated as reasonable alternatives have managed SNF for years, and may continue to do so for the period of time analyzed in this EIS. However, SNF management at these sites will either decrease, increase, or remain the same. DOE agrees that nothing in the Nuclear Waste Policy Act (NWPA), as amended, would preclude siting SNF management facilities for DOE SNF in Nevada. However, the provisions of NWPA, as amended, that preclude siting monitored retrievable storage facility at NTS are based partially on equity. NTS is currently the only site designated by Congress in the NWPA, as amended, for the characterization of the nation's first geologic repository for SNF and high-level waste. At present, the Yucca Mountain Project is primarily designated for commercial fuel disposal, but DOE SNF and high-level waste not exceeding 10 percent (by weight) of the repository capacity limit (70,000 tons metric tons heavy metal) could be placed in the repository.

Decisions regarding actual disposition of DOE SNF will follow appropriate NEPA review. This "path forward" would be implemented so as to minimize impacts on the first repository schedule. See also the response to comment 04.04 (008).

04.03.01 (031) Siting Alternatives

COMMENT

The commentor indicates that although DOE conducted a site-selection process that allowed for consideration of grainfield sites, only the Nevada Test Site was selected, and it was effectively dismissed as a site under its designation as a "nonpreferred alternative."

RESPONSE

The alternative site selection process, as documented in the *Alternative Site Selection Decision Process Report* did allow for the consideration of sites with no current spent nuclear fuel infrastructure or expertise to be considered. The screening process was used to evaluate every DOE site and a sizable number of Department of Defense (DOD) sites, which appeared to be reasonably representative of all DOD sites. NTS is a greenfield site, in that it is not involved in, nor does it have the infrastructure related to, management of SNF. DOD sites, which were also greenfield sites, were considered unreasonable due to the conflict in DOE missions with those conducted by DOD.

Due to its lack of infrastructure and equity concerns with the potential siting of the nation's first geologic repository, DOE considers NTS a less attractive alternative than the other DOE sites under evaluation. Despite this nonpreferred status, NTS is evaluated in the EIS to the same level as the other reasonable alternatives and, thus, gives the public a basis for comparative review of a reasonable greenfield site, as well as giving decisionmakers the tools to fully consider NTS as a reasonable site for the management of spent nuclear fuel. Decisionmakers will consider the environmental impacts, programmatic needs, costs, and public comments in arriving at a ROD.

See also the response to comment 04.03.01 (028).

04.03.01 (032) Siting Alternatives

COMMENT

The commentor states that DOE arbitrarily excluded potential greenfield sites from consideration in the EIS; instead DOE predetermined a greenfield site that could be readily struck down as inappropriate.

RESPONSE

No sites evaluated in the EIS have been eliminated from consideration for the management of spent nuclear fuel. It is true that a number of representative Department of Defense "greenfield" sites were considered attractive by DOE's site-selection team, based largely on the relative location and quality of these sites. However, consultations with the Department of Defense regarding the availability of these sites resulted in their elimination due to mission conflicts with current site activities. Nevertheless, it is DOE's opinion that the analysis of NTS gives decisionmakers (and the reviewing public) the full perspective of the environmental impacts of a representative greenfield site to form a basis for

comparison with other reasonable sites analyzed in the EIS. In addition, nothing in the EIS eliminates or disfavors NTS on the basis of environmental impacts. The programmatic considerations of lack of infrastructure and the existence of concerns over equity will be part of decisionmaking, as well as factors such as cost, implementability, environmental impacts, and technical considerations. See response to comment 04.03.01 (028).

04.03.01 (033) Siting Alternatives

COMMENT

The commentor is of the opinion that DOE improperly excludes foreign facilities from consideration as alternative fuel repositories.

RESPONSE

DOE has an obligation under NEPA to evaluate a range of reasonable alternatives, which must include a No Action alternative. NEPA and the CEQ regulations clearly give deference to the discretion of the agency, in this case DOE, to dismiss alternatives that the agency considers unreasonable given the parameters of the purpose and need for agency action. DOE does not consider storing DOE-owned and domestically stored SNF in foreign countries to be reasonable compared with the range of reasonable domestic storage and management alternatives analyzed in this EIS, for which the analyses show that the impacts of all alternatives would be small.

The alternative of foreign storage of foreign research reactor (FRR) SNF of U.S. origin is beyond the scope of this EIS, which evaluates the management of any such SNF once it is returned to the U.S. The decision whether FRR of U.S. origin is returned to the U.S., and the reasonable alternatives to returning such material, is within the scope of the FRR EIS.

Volume 1 of this EIS assumes that all FRR EIS spent nuclear fuel is returned for domestic management so that the environmental impacts of managing a reasonably foreseeable inventory can be evaluated in the EIS. If a decision is made not to return FRR SNF to the U.S., the EIS analysis would be additionally conservative in its evaluation of cumulative impacts due to the reduced domestic inventory to be managed.

In response to public comments, Volume 1, section 3.2 of the EIS has been expanded to discuss the option of processing DOE N-Reactor SNF overseas for the purpose of stabilization as an example for evaluating reasonably foreseeable impacts. See also response to comment 04.03 (054). Unlike foreign storage of domestic SNF, overseas processing presents a reasonable option to domestic processing of such materials both in cost and availability of facilities.

4.3.2 Action alternatives

04.03.02 (003) Action Alternatives

COMMENT

The commentor notes that for many activities, the Minimum Treatment, Storage, and Disposal alternative is no different than the No Action alternative for the INEL.

RESPONSE

While many activities may be similar in the alternatives cited, there are also differences, as shown in the shaded box in Volume 2, section 3.1.3. Different activities and projects are planned for each high-level waste alternative. Shaded boxes identify the major activities by alternative for each waste stream. These shaded boxes are in Volume 2, section 3.1.3 for transuranic waste, low-level waste, mixed low-level waste, greater-than-Class-C waste, and hazardous waste. Additional activities are shown in section 3.1.1 for spent nuclear fuel, section 3.1.2 for environmental restoration, and section 3.1.3 for infrastructure projects.

04.03.02 (004) Action Alternatives

COMMENT

Commentors state that the EIS should consider an alternative that truly calls for management of the spent nuclear fuel at those sites in closest proximity to origin of the fuel, thereby minimizing transportation of spent nuclear fuel.

RESPONSE

The EIS does consider managing SNF at or close to sites closest to the fuel's origin under the No Action alternative, discussed in Volume 1, section 3.1.1, and the Decentralization Alternative, discussed in Volume 1, section 3.1.2. The EIS demonstrates that SNF can be safely managed with minimal transportation.

04.03.02 (006) Action Alternatives

COMMENT

The commentor suggests that Volume 1 alternatives, except for No Action, be modified to include a general statement that the alternative would include any actions necessary to permit continued reactor operation or to place spent nuclear fuel in safer storage, including shipping offsite or constructing storage onsite.

RESPONSE

The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives. For example, a hybrid alternative could be developed that would incorporate actions from one or more of the five alternatives analyzed. Moreover, the programmatic decisions will not identify all site-specific

SNF management options. If appropriate, the decisions would be made after additional site-specific NEPA evaluation.

04.03.02 (007) Action Alternatives

COMMENT

The commentor states that completely remediating the Idaho National Engineering Laboratory is summarily dismissed.

RESPONSE

Remediation of INEL site has been negotiated and documented in the FFA/CO Action Plan. As stated in Volume 2, section 3.1.2, of this EIS, FFA/CO Action Plan would be followed under each alternative, subject to funding constraints, except the No Action alternative. The Maximum Treatment, Storage, and Disposal alternative analyzes remediating INEL under a residential land use scenario, which would result in substantial cleanup of the site with little contamination left in place.

4.3.2.1 No Action

04.03.02.01 (001) No Action

COMMENT

The commentor states that there are waste shipments to DOE sites from non-DOE sites under the Decentralization alternative, including spent nuclear fuel from foreign research reactors. The commentor is of the opinion that allowing these shipments to take place will erode support for development of a permanent waste repository.

RESPONSE

The EIS addresses a number of alternatives for SNF management, including the Decentralization alternative. The Decentralization alternative considers SNF management essentially where it is currently stored or generated, with the basic exception of fuels from university research reactors and/or foreign research reactors, which would be managed at INEL or SRS. This is to avoid constructing facilities at university campuses, or forcing such reactors to shut down due to the lack of such facilities, either here or overseas. Conversely, the No Action alternative does not accommodate the receipt of SNF from foreign research reactors and does not allow the transfer of university reactor SNF to DOE sites. Thus, the EIS does consider an alternative that the commentor appears to favor. Whether leaving SNF at the university sites places increased emphasis on the development of a permanent waste repository is a matter of conjecture beyond the scope of this EIS.

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-

level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

04.03.02.01 (002) No Action

COMMENT

The commentor expresses the opinion that the assumptions on which the spent nuclear fuel No Action alternative are based are not valid in light of current ongoing INEL activities; specifically, discussion of remediation activities are limited to activities already planned for removal of fuel from ICPP-603 storage pools, but the necessary increased rack capacity needed at ICPP-666 is not included, nor is the stored fuel in other areas of the Idaho National Engineering Laboratory.

RESPONSE

The No Action alternative, as described in Volume 2, section 3.1, includes activities and projects that have already been initiated or that may be initiated after June 1, 1995, and have been evaluated under the provisions of NEPA by June 1, 1995.

New activities would be limited to minor environmental safety and health activities needed to maintain safe operations. There would be no new major upgrades, and the use of ICPP-603 storage pools would be phased out. The ICPP-603 fuel is being removed under the Court Order. Reracking at ICPP-666 is not necessary to accommodate that fuel. Other on-site fuel consolidation activities are continuing under separate NEPA documentation, as described in Volume 2, section 2.1.3 for other NEPA review activities at INEL. The No Action alternative, as described in Volume 1, section 3.1, represents a baseline for comparison with the other alternatives. Projected impacts of alternative management schemes are compared in the EIS with those impacts projected for the existing conditions against plans involving both greater and lesser activities. DOE believes that the No Action alternative in the EIS satisfies the NEPA requirements to include a No Action alternative, and that the activities under the alternative are consistent with assumptions stated in Volume 1, section 3.1.

04.03.02.01 (003) No Action

COMMENT

The commentor disagrees with the statement in the EIS that the No Action alternative appears to be environmentally more acceptable than other alternatives because no new research would be initiated.

RESPONSE

Volume 1, section 5.1.2 actually states: "This makes the No Action alternative appear to be more environmentally acceptable than the other alternatives when, in fact, this research is simply delayed until after the time period covered by this EIS." The intent of this statement in the EIS is to explain that while the No Action alternative projects slightly smaller impacts, because fewer projects would be implemented, the impacts would not be reduced, only deferred. The sentence has been modified to more clearly explain this.

04.03.02.01 (004) No Action

COMMENT

The commentor notes that the EIS does not discuss the impacts of the No Action alternative on foreign research reactor spent nuclear fuel. In particular, the commentor notes the United States would be harmed by the selection of that alternative because the Reduced Enrichment for Research and Test Reactors Program would cease, the cost of medical isotopes would increase, nonproliferation efforts would be jeopardized, and U.S. diplomatic relations would be damaged.

RESPONSE

Volume 1, section 3.1, discusses the No Action alternative and describes the actions that would be undertaken by DOE to the extent required by this alternative. Activities related to the management of SNF, including research and development, would be included.

The EIS addresses only the sites at which FRR SNF would be stored if the United States adopts a proposed policy to accept that SNF. The proposed policy and its impacts are analyzed in a separate EIS. While the decisions for both EIS will be closely coordinated to ensure consistency, the concerns raised by this commentor are specific to the FRR EIS and are outside the scope of this EIS.

The relationship between the FRR EIS and this EIS is discussed in Volume 1, section 1.2 and Volume 2, section 1.2.3. The description of ongoing NEPA reviews has been revised.

See also the response to comment 04.04 (008).

4.4 Preferred Alternative

04.04 (001) Preferred Alternative

COMMENT

Commentors express the opinion that the EIS does not define a preferred alternative that includes reprocessing as a reasonable option.

RESPONSE

DOE believes that the range of alternatives analyzed in the EIS is inclusive and in accordance with the philosophy of considering a full range of reasonable alternatives, as required by NEPA and CEQ regulations. Analysis and discussion of all alternatives that can be postulated is an impossibly large task and is not required by existing regulations. Volume 1, section 3.1 describes the preferred alternative for SNF management. Volume 1, Appendices A, B, C, and J discuss stabilization activities, including processing, passivation and canning, that could be employed at the sites for current and/or future SNF management activities. See also the response to comment 04.04 (008).

04.04 (008) Preferred Alternative

COMMENT

Commentors question DOE's preference for alternatives and intentions or agendas the management of spent nuclear fuel. Some commentors feel decisions have already been made and that their opinions will be ignored.

RESPONSE

After carefully considering the results of the analysis of alternatives in the EIS and considering programmatic needs, cost, implementation, and public comments, DOE identified its preferred alternative for programmatic SNF management (see Volume 1, section 3.1). The preferred alternative is Regionalization by fuel type.

The decision as to whether the preferred alternative is selected for implementation over other reasonable alternatives evaluated in the EIS will be made by the Secretary of Energy in the ROD. Based on the analysis in the EIS, all environmental impacts would small and there is no environmental discriminator that would clearly favor one alternative over another. Thus, DOE based its decision largely on programmatic management needs, known vulnerabilities, and the need to maintain maximum flexibility to stabilize SNF and meet criteria for ultimate disposition, when ultimate disposition is ready for decision in another EIS.

Under the preferred alternative, DOE management of SNF would be centered on activities at INEL, SRS, and Hanford. INEL could manage nonaluminum-clad types, and could receive nonaluminum- clad

nonproduction fuels from Hanford. SRS could manage aluminum-clad fuel types, and could receive aluminum-clad fuels from INEL. Hanford would manage defense SNF such as the N-Reactor graphite fuel, and would not receive any significant amount of SNF from other sites. Naval SNF would be managed in accordance with the Navy's preferred alternative, which was stated in the Draft EIS, and is consistent with DOE's preferred alternative. Foreign research reactor SNF would be managed at either INEL, SRS, or both. In a publicly available cost analysis (independent of this EIS), the DOE preferred alternative is estimated to cost between \$9 billion and \$18 billion over the 40-year interim management period between 1995 and 2035.

Under all alternatives (over a 40-year period), the estimated number of latent cancer fatalities to the public from DOE SNF management activities (facility operations plus transportation) would be less than two latent cancer fatalities. There are no significantly high and adverse impacts identified for minority and low-income communities under the preferred alternative.

04.04 (010) Preferred Alternative

COMMENT

The commentor notes that detailed evaluations of environmental and human exposure pathways are more appropriate when selected alternatives are detailed in a Final EIS and site-specific National Environmental Policy Act reviews are conducted.

RESPONSE

More specific analysis is possible when details about implementation of programmatic decisions are available. Many of the issues the commentor expressed interest in would be best directed to follow-up NEPA reviews of site-specific projects. Such NEPA analyses will be performed when and as appropriate.

04.04 (011) Preferred Alternative

COMMENT

The commentors are reluctant to have the Idaho National Engineering Laboratory play a major role in processing waste materials from other sites until a permanent storage site is available.

RESPONSE

After careful consideration of the results of the analysis of alternatives in the EIS and consideration of program needs, implementation of program needs, public comments, and the draft site treatment plan, DOE identified its preferred alternative for SNF management, environmental restoration, and waste management at INEL (see Volume 2, section 3.4). The preferred alternative is similar to the Ten-Year Plan alternative, but includes elements of other alternatives for same waste type. Ongoing SNF management, environmental restoration, and waste management activities would be continued and

enhanced to meet current and expanded needs. The amount of newly generated waste would increase to reflect regulatory requirements and environmental restoration activities. Transuranic and mixed low-level wastes received from other sites would be treated and the residues would be returned to the generating DOE site or transported to an approved off-site disposal facility, as negotiated under the INEL FFA/CO. Environmental Restoration activities would be conducted in accordance with FFA/CO and its action plan. Volume 2, section 3.4 and Chapter 5 show that the impacts of the preferred alternative would be small.

04.04 (017) Preferred Alternative

COMMENT

The commentor believes that a hybrid alternative being announced in the Record of Decision is unacceptable.

RESPONSE

Under NEPA and CEQ regulations, a hybrid of the alternatives discussed in the EIS may be chosen in the ROD. The alternatives examined in the EIS represent a range of reasonable alternatives, and the agency is allowed to choose among variations of those alternatives, as long as the hybrid alternative is still "qualitatively within courted spectrum of alternatives" that were discussed in the EIS. See the CEQ's *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, 46 FR 18026 (March 23, 1981).

4.4.1 Decision Process

04.04.01 (001) Decision Process

COMMENT

The commentor expresses the opinion that the Navy and DOE have already selected a preferred alternative.

RESPONSE

In accordance with NEPA, no decision on the alternative to be implemented has been made or will be made until the Final EIS is issued and a 30-day waiting period has passed. No actions are being taken in the meantime that would prejudice future decisions. The final decision and the basis for it will be documented in the ROD, which will be published in the *Federal Register* in June 1995.

At the time the Draft EIS was issued, DOE had not identified a preferred alternative. The Navy stated its preferred alternative in the Draft EIS and discussed how this alternative would support the Navy's mission, as established by Congress. Upon consideration of public comments received on the Draft EIS and other factors, DOE identified preferred alternatives. The decision process that led to the

identification of these preferred alternatives is provided in Volume I, Chapter 3, and Volume 2, Chapter 3.

04.04.01 (002) Decision Process

COMMENT

The commentor is of the opinion that the decision process represented by the Draft EIS suggests a rushed process with no vision, only fix-ups.

RESPONSE

NEPA, 42 USC Section 4321 et seq., and CEQ regulation at 40 CFR Part 1500 et seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed actions and alternatives. Volume 1 and 2 of this EIS meet these requirements.

Input was solicited from the public during a 90-day public comment period on the Draft EIS, which allowed commentors to provide comments and attend one or more of the 33 public hearings held in 20 locations around the United States. Comments were received from 1,430 individuals, agencies and organizations. Many comments resulted in enhancement to the EIS (see Volume 1, section 1.4 and Volume 2, section 2.1.5). Comments were also considered in the identification of DOE's preferred alternatives [see the response to comment 04.04 (008)].

Despite the aggressive schedule for completion, the environmental analyses presented in the EIS have been very carefully and thoroughly examined for completeness and accuracy. The decision to be made will provide a path forward for a effective DOE SNF management program and will establish an effective INEL program for the foreseeable future.

04.04.01 (005) Decision Process

COMMENT

The commentor recommends that specified criteria related to how waste material would be handled once onsite be considered in DOE's decision-making process.

RESPONSE

Information on technical options for managing SNF at SRS can be found in Volume 1, Appendix C. Environmental evaluation of waste management practices and options at SRS may be found in the DOE *Savannah River Site Waste Management Draft EIS*.

04.04.01 (006) Decision Process

COMMENT

The commentor states that past experience with spent nuclear fuel needs to be a criteria for spent nuclear fuel management decisions.

RESPONSE

SNF management experience was a factor used in determining DOE's and the Navy's preferred alternatives. See Volume 1, section 3.1.

04.04.01 (007) Decision Process

COMMENT

The commentor suggests that a hasty decision is being made with respect to the storage of spent nuclear fuel.

RESPONSE

DOE is devoting adequate time to evaluate a full range of reasonable alternatives for safely managing SNF, including the need for interim storage capabilities.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. Volume 1, section 3.1 discusses DOE's preferred alternative for managing SNF. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, they are not sufficient to distinguish between alternatives based on impact alone. See the response to comment 04.04 (008) regarding the preferred alternative for SNF management.

4.5 Miscellaneous

04.05 (001) Miscellaneous

COMMENT

The commentor states that because the EIS did not find important environmental impact differences among the alternatives to the proposed action, the final decision will be political.

RESPONSE

The content of the EIS follows CEQ and DOE regulations implementing NEPA, including factoring in topics of concern raised during the public scoping meetings. The analyses, data, and supporting conclusions in the EIS have been prepared and reviewed by subject-matter experts and critically reviewed by an interdisciplinary team to ensure that environmental factors are fully considered in the decision-making process. Other factors, including public comments, economic and technical considerations, and agency mission, will be considered.

04.05 (002) Miscellaneous

COMMENT

The commentor states that projects necessary to provide the infrastructure for spent nuclear fuel management at the INEL will divert limited resources from waste management and environmental restoration projects on the site. The commentor states that DOE's conclusion that the INEL compares favorably with other potential sites is not justified, and the suitability of the INEL should be compared in detail with other potential sites.

RESPONSE

INEL is one of eight sites originally selected as reasonable alternative sites for consideration in this EIS. INEL was selected because of the many years of DOE experience conducting large-scale SNF management operations at that site. The same is true for SRS and Hanford. Accordingly, these sites, as well as five other sites limited to Naval fuel only and with years of SNF management experience, were considered reasonable alternatives for consideration for various levels of programmatic SNF management activities.

In response to public comments during scoping for this EIS, DOE conducted a screening process to identify additional reasonable alternative sites. The screening was used solely to identify additional reasonable alternative sites for consideration and analysis in the EIS. Thus, the existing reasonable alternatives were not included in this process, because they had already been selected as reasonable potential sites by DOE. Pursuant to the screening process, ORR and NTS were added as reasonable alternatives for the full scope of SNF management activities, bringing the number of sites to be analyzed to 10. Other sites were not considered reasonable for analysis in this EIS.

Potential sites were identified based on such factors as land ownership or current use, current or former SNF management infrastructure, transportation, and relocation of SNF. Realistic sites then were evaluated considering statutory and regulatory restrictions, environmental factors, socioeconomic and transportation factors, and implementability. As a result of this screening process, based largely on the basic qualities and locations of the sites, a list of the seven most attractive sites was forwarded to the decisionmakers for consideration in the EIS as reasonable siting alternatives in addition to the eight sites already deemed reasonable. In addition to site qualities and location, the decisionmakers ultimately also considered such factors as programmatic needs, mission conflicts, timing, expertise, and infrastructure. The conduct of this process and its conclusions are documented in the *Alternative Site Selection Decision Process Report* and summarized in Volume 1, section 3.2.3 of the EIS.

Regarding the concern of diverting resources from waste management to SNF management, the Secretary of Energy has publicly affirmed that current DOE policy and practice emphasizes safety and

environmental considerations above other program goals. In this regard, DOE is working to remediate and eliminate adverse environmental impacts from past programs, as well as to safely manage waste and SNF today and in the future. The integration and relative emphasis between waste management, environmental restoration, and SNF activities for the INEL through the year 2005 is addressed in Volume 2 of the EIS for a range of alternatives. Although DOE will use the EIS as a basis for a decision regarding these site-wide programs, implementation of decisions is subject to processes such as funding and permitting.

04.05 (003) Miscellaneous

COMMENT

The commentor recommends reducing the mass of the existing spent nuclear fuel.

RESPONSE

The mass of spent nuclear fuel cannot be reduced. Radioactive long-lived nuclides can be separated from cladding and other fuel structural materials, but the total amount of radioactive material remains the same. General solutions proposed for managing nuclear waste are in Volume 1, section 1.1 and Appendix C, and Volume 2, Chapters 1 and 2, respectively. More specific descriptions of how wastes would be managed under the proposed alternatives are in Volumes 1 and 2, section 3.1. SNF management technology is discussed in Volume 1, Appendix J.

04.05 (004) Miscellaneous

COMMENT

The commentor expresses the opinion that, contrary to the conclusions in the EIS, nuclear waste storage has virtually no impact on anyone, common sense dictates that toxic substances, including spent nuclear fuel, should be managed to minimize potential exposure to people.

RESPONSE

The evaluation in this EIS indicates that all of the alternatives would result in extremely small impacts to the public. All the alternatives include actions to minimize exposure to people (for example, see Volume 1, section 5.7).

04.05 (007) Miscellaneous

COMMENT

The commentor objects to the term "No Action" alternative because people who support this alternative could be perceived as not caring about solving the problem.

RESPONSE

The No Action alternative is a specifically named alternative required under CEQ regulations for implementing the National Environmental Policy Act of 1969. Under the No Action alternative in this

EIS, DOE would limit actions to the minimum necessary to safely and securely manage SNF at or close to the generation site or current storage location.

04.05 (009) Miscellaneous

COMMENT

The commentor recommends that the legal and technical constraints at the Nevada Test Site, outlined in the commentor's letter, be included in DOE's decision-making process for selecting a preferred alternative.

RESPONSE

All comments received during the public comment period were carefully reviewed and considered by DOE in preparation of the EIS and identification of the preferred alternative.

Although NTS is evaluated in the EIS as an alternative for SNF management activities, DOE did not consider it to be a preferred site in the EIS, because Nevada is the host site for the Yucca Mountain Site Characterization Project and because of NTS lack of current SNF handling experience. As stated in Volume 1, Appendix F, section 3.1, NTS provides a contrast to other potential sites because it represents a site that has no existing SNF infrastructure and does not currently generate or store any SNF. See also the responses to comments 04.03.01 (28) and 04.04 (008).

04.05 (010) Miscellaneous

COMMENT

The commentor notes that environmental restoration and waste management activities have not been assessed separately for the INEL.

RESPONSE

Environmental restoration and waste management activities cannot be separated entirely because environmental restoration is a major waste generator. Reasonably foreseeable waste from environmental restoration will in part dictate waste management activities. Volume 2 of the EIS provides extensive detail on and analysis of these subjects.

The alternatives analyzed were designed to cover the spectrum of potential impacts, from maximum activities (the Maximum Treatment, Storage, and Disposal alternative) to minimum activities (the No Action alternative). As identified in Volume 2, section 2.1.2, environmental restoration and waste management activities discussed in the EIS are evaluated at both the site-wide level by waste stream management and project-specific levels. For environmental restoration, potential impacts at INEL are addressed only at the site-wide level. Project-specific impacts of these activities at INEL will be quantified and evaluated in the future, as appropriate, as part of the CERCLA process.

The comparison of impacts is in Volume 2, section 3.3. This brief comparison of impacts is presented to help decisionmakers and the public understand the potential environmental consequences of proceeding with each of the alternatives at INEL. In the ROD, DOE may also choose to combine projects and activities from more than one alternative.

04.05 (011) Miscellaneous

COMMENT

The commentor recognizes that the Savannah River Site may need to manage some spent nuclear fuel until ultimate disposition is available.

RESPONSE

Under all alternatives, some SNF would be managed at SRS for a number of years, even if the ROD selects the Regionalization or Centralization alternative at a non-SRS location.

04.05 (012) Miscellaneous

COMMENT

The commentor suggests that intermediate processing at multiple sites other than the final disposition site increases the potential for damage at multiple sites.

RESPONSE

The EIS evaluates the impacts of managing SNF at multiple sites; the impacts would be small.

04.05 (013) Miscellaneous

COMMENT

The commentor points out the benefits of the nuclear industry to U.S. citizens and the military and suggests it is time to recognize the responsibility of safely storing the "remnants of the industry."

RESPONSE

Volume 1, section 3.1 describes the preferred alternative for programmatic SNF management; Volume 2, section 3.4 describes the preferred alternative for SNF management, environmental restoration, and waste management at INEL. See also the responses to comments 04.04 (008) and 04.04 (011).

04.05 (014) Miscellaneous

COMMENT

The commentor wants information on efforts to scale back the production of nuclear waste.

RESPONSE

This EIS considers management of DOE SNF pending ultimate disposition. DOE believes the analyses in this EIS are adequate to support a decision on this subject. General discussions of waste management procedures and plans are covered in Volume 2, Chapters 1 and 2. DOE has committed to a strategy

emphasizing waste minimization and avoidance, where most new radioactive waste will be created during desirable cleanup activities and decommissioning of contaminated facilities that no longer serve essential missions. Most DOE SNF was generated in DOE production and experimental reactors that have ceased to operate, so considerable source reduction has already occurred.

04.05 (015) Miscellaneous

COMMENT

The commentor states that additional information is required to determine the extent to which the No Action alternative in Volume 2 would not meet current regulatory agreements in place at the INEL.

RESPONSE

The No Action alternative, as described in Volume 2, section 3.1, includes activities and projects that have been initiated or that may be initiated after June 1, 1995, and have been evaluated under the provisions of NEPA by June 1, 1995.

New activities would be limited to minor environmental safety and health activities needed to maintain safe operations. There would be no new major upgrades and the use of ICPP-603 storage pools would be phased out. The ICPP-603 fuel is being removed under the Court Order. Reracking at ICPP-666 is not necessary to accommodate that fuel. Other on-site fuel consolidation activities are continuing under separate NEPA documentation, as described in Volume 2, section 2.1.3 for other NEPA review activities at INEL. The No Action alternative, as described in Volume 1, section 3.1, represents a baseline for a comparison of the other alternatives. Projected impacts of alternative management schemes are compared in the EIS with those impacts projected for the existing conditions against plans involving both greater and lesser activities. DOE believes that the No Action alternative in this EIS satisfies the NEPA requirements to include a No Action alternative, and that the activities under the alternative are consistent with assumptions stated in Volume 1, section 3.1.

04.05 (016) Miscellaneous

COMMENT

The commentor states that the alternatives for the INEL EIS are poorly labeled and organized.

RESPONSE

The Summary describes the relationship between Volumes 1 and 2, as well as the relationship between the alternatives in the two volumes. The Summary also lists the key points in each of the Volume 2 alternatives.

04.05 (018) Miscellaneous

COMMENT

Commentors state that technologies and or proper storage sites for safe, long-term storage of nuclear waste may not exist.

RESPONSE

DOE has a program (including research, development, and demonstration activities) for safely managing and storing all radioactive materials at each of the sites considered in the EIS. General solutions for managing SNF, including storage, are discussed in Volume 1, section 1.1.3 and Appendix J. Current management practices for radioactive wastes are described in Volume 2, section 2.2.7, which is specific to INEL, but also generally applies to wastes at other DOE sites.

The potential impacts of storing SNF and associated mitigation measures are discussed in Volume 1, Chapter 5. Supporting information on types of SNF and their storage options is provided in Volume 1, Appendix J. Management and storage of radioactive wastes at INEL are described in Volume 2, Chapters 1 and 2. DOE's policy is to comply with applicable Federal, state, and local regulations and DOE Orders. All radioactive materials are managed to ensure protection of the environment and the health and safety of the public and site employees.

04.05 (019) Miscellaneous

COMMENT

The commentor emphasizes that the EIS and Record of Decision have the flexibility for a hybrid alternative.

RESPONSE

The programmatic action that DOE ultimately selects is not necessarily limited to one of the alternatives. A hybrid alternative could be developed that would, for example, incorporate actions from one or more of the five alternatives analyzed. Moreover, the programmatic decisions will not identify all site-specific SNF management options. If appropriate, the decisions would be made after additional site-specific NEPA evaluations.

04.05 (020) Miscellaneous

COMMENT

The commentor suggests that information on the No Action alternative in the Summary is contradictory.

RESPONSE

The Summary has been revised to clarify that the minimum facility upgrades necessary to ensure the safe interim storage of SNF would be completed.

04.05 (021) Miscellaneous

COMMENT

The commentor suggests DOE evaluate the railroad rights-of-way for temporary storage of spent nuclear fuel.

RESPONSE

Because railroad rights-of-way are privately owned and do not provide infrastructure for DOE SNF concerns, such as exposure to the public and potential for accidents, railroad rights-of-way are unattractive. This was not considered to be a reasonable alternative.

04.05 (022) Miscellaneous

COMMENT

The commentor requests specific information on secondary wastes to be produced from hypothetical activities or not-yet-existent facilities related to possible processing of spent nuclear fuel, specifically the radioactive scrap/waste facility. In addition, the commentor states that the EIS fails to discuss the alternatives cited in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities* and that continued avoidance of planning for the final disposition in a repository extends the risk and hazards of storage at the Idaho National Engineering Laboratory.

RESPONSE

Specific information is not available on facilities that have not been constructed or activities that have not been conducted to acquire a valid baseline. Generic projects have been included in the EIS as "placeholders" to present readers with as comprehensive a range of forthcoming projects as is currently possible. These projects or facilities would require additional analysis under NEPA. At such time, accurate information on secondary waste generation will be provided for an assessment of impacts on waste management. DOE acknowledges and discusses the vulnerability assessment in Volume 1, section 1.1.2. The action plans for the correction of the vulnerabilities identified are referenced in the EIS and are available in libraries and reading rooms that received this EIS.

04.05 (023) Miscellaneous

COMMENT

The commentor notes that Volume 2, Table 3.3-1 and section 5.19 need to be clearly linked. Also, specific discussion on safety requirements and other resources needed to implement the mitigation measures and monitoring for each alternative should be presented in the Final EIS.

RESPONSE

Volume 2, section 5.19 of the EIS has been revised to show clear links between the sections on mitigation and Table 3.3-1.

5. TECHNICAL ISSUES

5.1 Aesthetic and Scenic Resources

05.01 (001) Aesthetic and Scenic Resources

COMMENT

The commentor states that the EIS ignores the presence of unusually aesthetically pleasing landforms, particularly the buttes, on and adjacent to the Idaho National Engineering Laboratory. The commentor notes that the Middle Butte and other sites on the Idaho National Engineering Laboratory are significant to the Shoshone-Bannock Tribes. The commentor also states that visual impacts should not be analyzed based on what could be seen from the Idaho National Engineering Laboratory boundary or a road, but that the EIS should also analyze visual impacts for tribal members who have been granted a unique right of access to the site.

RESPONSE

Volume 2, section 4.2 identifies that portion of the Idaho National Engineering Laboratory (INEL) within the Big Butte Resource Area, which is administered by the Bureau of Land Management. Volume 2, section 4.5 has been revised to acknowledge that features of the natural landscape have special significance to the Shoshone-Bannock Tribes.

Volume 2, section 5.5 discusses the impacts of proposed projects on aesthetic and scenic resources at INEL for the various EIS alternatives. Most of the proposed projects would be confined to existing developed areas and be in size and shape to adjacent structures. The locations of some new facilities have not been determined for the Ten-Year Plan alternative; however, such facilities probably would be within 2 miles of existing facilities and at least 1/2 mile from public roads. Although no final siting for these projects is expected to occur on or near the buttes, the final siting determination will consider preservation of aesthetically pleasing landforms.

Volume 2, section 5.4 has been revised to state that the Shoshone-Bannock Tribes would be consulted before any project is developed that could impact resources of importance to the Tribes.

05.01 (002) Aesthetic and Scenic Resources

COMMENT

The commentor states that impacts to visibility and enjoyment of view at the Fort Hall Reservation, as well as effects on tourism, are not considered in the EIS.

RESPONSE

The Fort Hall Reservation is approximately 27 miles southeast of the southern boundary of INEL. Although a specific analysis was not performed for the Fort Hall Reservation, the analysis performed for the EIS concluded that the potential for impairment of the visual resource at Craters of the Moon National Monument, which is approximately 12 miles west of INEL's western boundary, could not be ruled out.

The analysis used very conservative methods, including assumptions that many of the important proposed sources of emissions would not incorporate emissions controls, and that pristine conditions currently exist at Craters of the Moon. However, DOE would not be able to obtain an air permit for these emissions sources unless it could be shown to the satisfaction of the Idaho Division of Environmental Quality that there would be no perceptible impacts on visibility at the Craters of the Moon National Monument, which is the nearest Class I area to INEL. The control measures that would be required to avoid any impacts at Craters of the Moon would also serve to prevent impairment of visibility or enjoyment of the view at the Fort Hall Reservation.

In addition, the Fort Hall Reservation lies outside the path of prevailing winds flowing across the INEL site. As noted in Volume 1, Appendix B, section 4.7, the mountain ranges bordering INEL normally channel the prevailing westerlies into a southwest wind, away from the reservation.

05.01 (003) Aesthetic and Scenic Resources**COMMENT**

Commentors urge that the beauty of Idaho be preserved.

RESPONSE

DOE agrees. In developing the alternatives for management of spent nuclear fuel (SNF) and environmental restoration and waste management at INEL, DOE was sensitive to the impacts that could be caused by disturbance of the natural landscape. Thus, for new facilities, DOE would use land that has already been disturbed or land that is adjacent to developed land. The amount of land required for new facilities would also be minimized. Even for the case in which all SNF would be shipped to INEL, only 31 acres (0.01 percent of the site land area) would be devoted to new facilities. In developing this land, there would be efforts to prevent degradation of views and prevent environmental damage that might cause the loss of natural flora and fauna.

5.2 Air Quality

05.02 (001) Air Quality

COMMENT

The commentor wonders about the effects on air quality of releases of polluting chemicals and radioactive materials to the air.

RESPONSE

DOE's policy is to comply with all applicable Federal, state, and local regulations and DOE Orders, and to protect human health and the environment. Where possible, potential concentrations of air pollutants from the various alternatives have been estimated, considering appropriate local meteorology and other data for each site. DOE employs pollution reduction techniques to minimize air releases when designing, constructing, and operating facilities.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts, including impacts to air quality, for all the alternatives considered in this EIS. The analyses show that the impacts for all alternatives would be small.

05.02 (003) Air Quality

COMMENT

The commentor states that the radiological risks of the various alternatives in the EIS are impressively low and are consistent with other studies that have concluded that the risks of handling the larger problems of defense high-level waste or commercial fuel are not large.

RESPONSE

The comment is consistent with the EIS, which shows that the radiological risks associated with the various alternatives would be low, including the risks of interim storage of high-level waste.

The risks of handling commercial SNF, with the exception of certain special-case fuels managed by DOE, are beyond the scope of this EIS.

05.02 (004) Air Quality

COMMENT

The commentor questions the appropriateness of the units of measure (picocuries per milliliter) used in Volume 1, Appendix C, Table 4-18 to describe tritium activity in air moisture.

RESPONSE

The title of Table 4-18 has been revised to "Tritium measured in air at the Savannah River Site (pCi/cc)" to more clearly reflect that a volume of air rather than water (or precipitation) was measured.

05.02 (005) Air Quality**COMMENT**

The commentor indicates that the Hanford Site is in a noncompliant area for particulates.

RESPONSE

The commentor is correct. According to Volume 1, Appendix A, Table 4.7-2, the maximum 24-hour average particulate concentration exceeds State of Washington standards. The EIS has been changed to reflect this fact.

05.02 (006) Air Quality**COMMENT**

The commentor states that a definition of 95 percent meteorology should be provided in Volume 2, section 5.14 or Appendix F-5. The commentor also notes that the definition given in Volume 2, Appendix F, section 5.3 is incorrect and should be replaced.

RESPONSE

The commentor is correct. The following definition of 95 percent meteorology has been added to Volume 2, section 5.14 and has replaced the incorrect definition in Volume 2, Appendix F: "95 percent meteorology is defined as stable weather conditions, unfavorable to atmospheric dispersion of contaminants, which are not exceeded more than 5 percent of the time."

05.02 (007) Air Quality**COMMENT**

The commentor cannot tell from the EIS analysis if susceptible populations, such as those in nursing homes, have been considered, or whether pollutant deposition on local food crops has been considered.

RESPONSE

DOE can determine no cases where susceptible subgroups, such as nursing home occupants, require specific evaluation. The basis for this statement is (1) air quality impacts at all populated (off-site) areas are well below health-based standards for all pollutants considered, and (2) the applicable standards are based on dose-response data, which have already accounted for susceptible subgroups.

Pollutant deposition on local food crops has been directly assessed in the case of radionuclides, and indirectly assessed in the case of criteria pollutants. In the latter case, all off-site concentrations of

criteria pollutants are below the secondary air quality standards, which have been established to prevent adverse effects to vegetation, property, or other elements of the environment.

DOE has added a better explanation of source terms and a description of the indirect exposure assessment and secondary pathways that were evaluated and included in the EIS. (See Volumes 1 and 2, Chapter 5.)

05.02 (008) Air Quality

COMMENT

The commentor considers the EIS presumptuous to claim that levels of all nonradiological pollutants, with the possible exception of hydrochloric acid, which results from the incineration at INEL of low-level and mixed low-level waste, are below applicable standards. The commentor states that only trial burns can confirm this, and it is impossible to be so positive about any proposed incinerator. The commentor also asks if this incinerator is being evaluated under the Environmental Protection Agency's new "Combustion Strategy."

RESPONSE

With respect to hydrochloric acid, the incinerator in question is the Waste Experimental Reduction Facility. This facility is included in Volume 2 for the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives for processing low-level and mixed low-level waste. However, it is not a "proposed incinerator," but rather an existing facility that has had several trial burns and has processed low-level waste and limited amounts of mixed wastes. Thus, a considerable amount of test data and operating experience exists. The Waste Experimental Reduction Facility has an air quality permit that has specific limitations for various pollutants. The facility can continue to operate with existing permits. The reviewing agency will evaluate all data under applicable standards and guidelines, which may include the Environmental Protection Agency's (EPA's) new "Combustion Strategy," and will apply all required restrictions and emissions standards designed to ensure compliance.

Other incinerators proposed under these alternatives (e.g., the Idaho Waste Processing Facility, the Mixed Low-Level Waste Treatment Facility, and the private-sector Alpha-Mixed Low-level Waste Treatment Facility) are early in the conceptual design stage of development, and the projects' emissions are less certain. Annual average increment levels, exclusive of baseline levels, should be used to compare recently promulgated State of Idaho standards for noncarcinogenic toxics, including hydrochloric acid. The analyses presented in the EIS used maximum 8-hour concentrations in accordance with previous State of Idaho guidelines. Due to the conservative approach used in these analyses, and the additional analyses and conditions that will be applied by the State of Idaho Division of

Environmental Quality as part of its permit review function, DOE can state with confidence that all pollutant levels would be well below applicable standards.

05.02 (009) Air Quality

COMMENT

The commentor objects to any promise of adding combustion controls to mitigate impacts. The commentor cites the case in which DOE received a permit for nitrogen oxide emissions from the Idaho Chemical Processing Plant in 1989, and although the permit contained a requirement to install abatement equipment for those emissions, the equipment has yet to be installed.

RESPONSE

The activity in question was the Fuel Processing Restoration (FPR) Project. The permit was contingent on operation of the FPR project and was not independently applicable. The FPR project did not proceed and the increases in nitrogen oxide emissions did not materialize. With regard to this EIS, DOE does not promise to add combustion controls to mitigate impacts. Rather, each new project would be evaluated to determine whether controls are required or warranted. In some cases, combustion controls may be required by the State of Idaho Division of Environmental Quality before a facility will be granted a construction permit.

05.02 (010) Air Quality

COMMENT

The commentor states that Idaho air quality rules should be specified as "Rules for the Control of Air Pollution in Idaho," and references to the Air Quality Bureau should be updated.

RESPONSE

The commentor is correct. References to Idaho air quality rules and the Air Quality Bureau have been updated in Volume 2.

05.02 (011) Air Quality

COMMENT

The commentor states that ambient air concentrations at the Idaho National Engineering Laboratory should be modeled at the inner boundary of the grazing area on the site, because the public is allowed access to that area.

RESPONSE

As defined in *Rules for the Control of Air Pollution in Idaho*, "ambient air" refers to that portion of the atmosphere to which the general public has access. This is not the case with grazing areas on the INEL site. Access to these areas is controlled and is restricted to certain individuals or groups; the general

public does not have access. DOE's position is that these grazing areas do not meet the definition of areas that contain "ambient air." Therefore, ambient air quality standards do not apply, and impact modeling is not required for these areas.

05.02 (012) Air Quality

COMMENT

The commentor asked DOE to explain why the latest version of the SCREEN air quality model (called SCREEN2) was not used.

RESPONSE

The EIS used air quality baseline data for some toxic air pollutants that had been generated by previous modeling efforts, which used the SCREEN model. Rather than repeat these analyses using SCREEN2, an approach was taken whereby: (a) for any screening level, baseline toxic results that approached about one-half an applicable standard were reassessed using the more refined Industrial Source Complex Short Term-2 (ISCST-2) model; and (b) comparison tests were run to determine if there were significant differences in the results obtained using SCREEN versus SCREEN2. For the manner in which the SCREEN model was applied, test runs indicated that no difference would be obtained by reassessing the baseline cases that had previously been performed. There is no requirement in Rules for the Control of Air Pollution in Idaho to perform the analyses that were done using SCREEN. The analyses to determine compliance with toxic increment standards were performed using ISCST-2.

05.02 (013) Air Quality

COMMENT

The commentor disagrees with the statement about krypton-85 being "by far, the radionuclide with the highest emission rate." The commentor also states that since reprocessing has been suspended, argon-41 is the radionuclide with the highest emission rate.

RESPONSE

The statement cited by the commentor is from Volume 1, Appendix B. Volume 2 makes it clear that krypton-85 has historically been the radionuclide with the highest emission rate, but that fuel reprocessing, the activity primarily responsible for krypton-85 emissions, ceased in 1992. The wording in Volume 1, Appendix B, section 4.7 has been changed to correspond to that in Volume 2, section 4.7.

05.02 (014) Air Quality

COMMENT

The commentor questions why Volume 1, Table 4.7-3 and Volume 2, Table 4.7-1 list noble gas emissions from Argonne National Laboratory-West that are higher than those listed in the 1991 *Radioactive Waste Management Information System* and the 1991 *Idaho National Engineering Laboratory National Emission Standard for Hazardous Air Pollutants, Annual Report*.

RESPONSE

As indicated in footnotes on the tables cited by the commentor, the emissions estimates include those from existing facilities and reasonably foreseeable increases to the baseline. Included in the latter category is the Fuel Cycle Facility at Argonne National Laboratory-West. This facility has significant emissions of krypton-85 (11,500 curies) and xenon-131m (127 curies), which account for the difference between the values listed in the tables and the values reported in the *Radioactive Waste Management Information System* and *1991 Idaho National Engineering Laboratory National Emission Standard for Hazardous Air Pollutants, Annual Report*.

05.02 (015) Air Quality

COMMENT

The commentor states that emissions and visibility impacts should be evaluated for fossil-fuel-burning equipment associated with plant services that would be needed to support the Regionalization or Centralization alternatives at Idaho National Engineering Laboratory.

RESPONSE

The specific projects associated with the alternatives for Regionalization or Centralization of SNF at INEL would not require additional fossil-fuel-burning equipment beyond that which is already installed, with the exception of one minor source, a diesel generator associated with the Fort St. Vrain Spent Fuel Storage Project. The emissions from this source would be very low, and the statement that these emissions would not add a measurable increment to emissions at INEL is accurate. Visibility impacts from this minor source would be small. A visibility impact analysis was also performed for the closest Class I area (Craters of the Moon National Monument) for the cumulative emissions of all applicable sources comprising each Volume 2 alternative.

05.02 (016) Air Quality

COMMENT

The commentor states that mercury is shown to slightly exceed the State of Idaho criteria for two of the alternatives. The commentor states that given the uncertainty known to exist in the Industrial Source Complex model, it is not possible to judge the health implications of this information.

RESPONSE

The mercury levels reported in the Draft EIS are the maximum 8-hour levels that would be expected. The EIS reflects State of Idaho standards effective May 1, 1994, for calculating the effect of mercury emissions on air quality. The State of Idaho now requires that state annual average levels should be used. As discussed in Volume 2, section 5.7, revised calculations show that mercury levels are now well below the Idaho standard. The revised mercury level is less than 3 percent of the state standard. These levels are predicted if mercury-bearing waste were processed at a very high rate. Feed rate limits or engineering controls could be employed to minimize and ensure that levels approaching the standard would not result.

The EIS has been changed from an 8-hour reporting level to a 24-hour reporting level.

05.02 (018) Air Quality**COMMENT**

The commentor makes the following recommendations: (a) use the same baseline year for radionuclides, criteria pollutants, and toxic air pollutants, (b) clarify the distinction between existing emissions and projected emissions for some cases, and (c) present air emissions for 1990, 1991, and 1992, and an analysis for each of these years.

RESPONSE

The rationale for using different baseline years for radionuclides, criteria pollutants, and toxic air pollutants follows: Generally, the most representative baseline year is the most recent year. However, at the time the analyses were performed, the availability of data varied for the three classes of airborne emissions. For radionuclides and criteria pollutants, 1991 was the most recent year for which data were available when the baseline studies were conducted, and these were the data that were used. However, some SNF processing took place that year at the Idaho Chemical Processing Facility. SNF processing is no longer performed at this facility and radionuclide emissions for this activity are therefore not representative of baseline conditions. Moreover, processing is an activity assessed in association with some of the alternatives, and inclusion of these emissions in both the baseline and alternative impact scenarios would cause double counting. That is why the 1993 radionuclide emissions were used for this facility. With respect to toxic air pollutant emissions, only 1989 data were and currently are available for analysis.

The only distinction made between existing emissions and a future baseline involves increases due to specific projects that are expected to become operational before June 1, 1995 (that is, before the time

period covered by the EIS alternatives). These projects are identified in Volume 2, sections 4.7 and Appendix F-3. The analysis is conservative in that no credit is taken for future reductions in emissions.

DOE does not agree that 3 years of emissions should be analyzed. Conservative emissions estimates were used for the baseline year, and all impacts based on these estimates represent an upper bound to the impacts that would actually occur. For example, the maximum emissions scenario used for criteria and toxic air pollutants exceeds actual emissions by a substantial margin (as illustrated in Volume 2, Figure 4.7-4) and bounds the baseline conditions.

05.02 (019) Air Quality

COMMENT

The commentor states that the only Air Quality Related Value considered was visibility, and no justification was given for not including other Air Quality Related Values, such as impacts to soils and plants.

RESPONSE

Air Quality Related Values other than visibility were assessed. Volume 2, section 5.7.4 discusses impacts to soils and vegetation and impacts due to secondary growth. All off-site concentrations of criteria pollutants are below the secondary air quality standards, which have been established to prevent adverse effects on vegetation, property, or other elements of the environment. Standards for protection of vegetation have also been established for fluorides, although impacts of fluoride emissions were modeled only for comparison to the Toxic Air Pollutant Increments. Fluoride emissions associated with the alternatives would be very low and would not be expected to result in any impact. Also, pollutant deposition on local food crops has been directly assessed for radionuclides; the results include the dose from ingestion of contaminated food products. With respect to other Air Quality Related Values, evaluations were performed and described for ozone formation, stratospheric ozone depletion, acidic deposition, and global warming.

05.02 (020) Air Quality

COMMENT

The commentor points out that the statement "emissions of volatile organic compounds would be expected to have a negligible effect on ozone formation" is incorrect. The commentor states that the 1990 emission inventory indicates emissions of more than 600 tons per year of volatile organic compounds. The commentor recommends that the amount of ozone formation be estimated.

RESPONSE

The 1990 emissions inventory for INEL quantifies the maximum potential emissions of volatile organic compounds (VOCs) as more than 600 tons per year. VOC emissions from actual operations are less than 100 tons per year. VOC emissions from the proposed projects would be less than 10 tons per year of the applicable State of Idaho standards' significant level of 40 tons per year that would necessitate an ozone formation analysis. From Volume 2, Table 5.7-2 it can be seen that volatile organic compound emissions range from 5,583 kilograms (6.1 tons) per year for the No Action alternative to 8,882 kilograms (9.8 tons) per year for the Maximum Treatment, Storage, and Disposal alternative. The low potential for ozone formation from the proposed projects precludes the need for a detailed assessment. For those projects requiring air quality permits, analyses for impacts resulting from specific pollutants, in this case VOCs, would be performed, contingent on regulatory requirements.

05.02 (021) Air Quality

COMMENT

The commentor states that releases of carbon tetrachloride, freon, and greenhouse gases are described as extremely small compared with global loading, and considers this an unreasonable comparison.

RESPONSE

The statement in question attempts to characterize emissions associated with the alternatives in terms of potential for stratospheric ozone depletion (carbon tetrachloride and freon) and global warming (greenhouse gases, including carbon dioxide, methane, nitrous oxides, and chlorofluorocarbons). These are global (not regional) effects, which are associated with global emissions. The emissions from alternatives represent an extremely small fraction of global levels, and it is reasonable to conclude that these emissions would have small impacts with respect to global effects. INEL has an ongoing program to reduce or eliminate the use of chlorofluorocarbon compounds

05.02 (022) Air Quality

COMMENT

The commentor requests that DOE demonstrate how the emission rates and concentrations for air pollutants summarized in Volume 2, section 4.7 were calculated.

RESPONSE

The methods used to calculate emission rates and concentrations are described in Volume 2, Appendix F-3. Additional details on these methods are provided in the *Technical Support Document for Air Resources*, which is referenced in Appendix F-3. For radiological releases and assessments, additional details are provided in *Estimated Radiological Doses Resulting from Airborne Radionuclide Released by Facilities at the Idaho National Engineering Laboratory*, and *Maximum Individual, Collocated Worker*,

and Population Doses from INEL Proposed Action and No Action Sources, which are also cited in Appendix F-3. The referenced reports are available for review in the reading rooms and information locations listed in the EIS.

05.02 (023) Air Quality

COMMENT

The commentor points out that previous documents have established that adequate upper air (mixing height) data are not available for the Idaho National Engineering Laboratory vicinity and asked DOE to describe the upper air meteorological data used for modeling.

RESPONSE

Verified measurements of on-site mixing height for the INEL vicinity are not available at this time. The original nonradiological analyses (modeling of the baseline concentrations and impacts of alternatives) conservatively assumed a mixing height of 100 meters for modeling of both short- and long-term (annual average) concentrations. The radiological modeling (which only involves annual averages) used a mixing height of 800 meters. Additional nonradiological modeling, which has since been performed to assess compliance with Prevention of Significant Deterioration (PSD) increment limits, used values of 150 meters for 3-hour and 24-hour averaging periods, and 800 meters for annual average assessments. These are considered more reasonable estimates for short- and long-term mixing heights. The basis for the short-term value is that 150 meters is reportedly the lowest mixing height ever observed at INEL (*Air Permitting Handbook*, Page 4-48). The 800-meter value is recommended by the National Oceanic and Atmospheric Administration as appropriate for long-term modeling (Sangendorf, J., U.S. Department of Commerce, National Oceanic and Atmospheric Administration, *Averaging INEL Mixing Depths*, Memo to M. Abbott, EG&G-Idaho, Inc., February 11, 1991). For short-term calculations, the same results are obtained whether 100 or 150 meters is used; this is because the highest short-term concentrations are predicted to occur during conditions of slight-to-moderate atmospheric stability (that is, stability classes E and F), in which cases mixing height data are not used by the Industrial Source Complex Short Term-2 model.

05.02 (024) Air Quality

COMMENT

The commentor points out that the toxic standards are now listed as increments and the New Source Review Toxic Policy was eliminated.

RESPONSE

Volume 2, Figure 4.7-2 has been revised to reflect recent updates to the *Idaho Toxic Air Pollutant Standards*. The *New Source Review Toxic Policy* was incorporated into the *Rules for Control of Air Pollution in Idaho*.

05.02 (025) Air Quality**COMMENT**

The commentor points out that the power of 10 is missing in the value of foreseeable increases in carbon tetrachloride emissions in Volume 2, Table 4.7-2.

RESPONSE

Volume 2, Table 4.7-2 has been corrected to show the value for foreseeable increases in carbon tetrachloride emissions as 4.5×10^{-5} kilograms per year.

05.02 (026) Air Quality**COMMENT**

The commentor notes that the correct characterization for the area around the Idaho National Engineering Laboratory site is "in attainment or unclassified" for all National Ambient Air Quality standards.

RESPONSE

The commentor is correct. Volume 2, section 4.7.4 has been revised to read: "The area around the Idaho National Engineering Laboratory site is in attainment or unclassified for all National Ambient Air Quality Standards."

05.02 (027) Air Quality**COMMENT**

The commentor states that the estimated impacts on air quality, especially on visual air quality, were not presented for operation of the New Waste Calcining Facility and questions whether this facility's impacts are included in Volume 2, Figure 5.7-4. The commentor states that NO_x reduction in the New Waste Calcining Facility plume should be evaluated.

RESPONSE

The impacts on air quality have been assessed for emissions associated with the New Waste Calcining Facility. These impact assessments included comparison with ambient air quality standards, but did not include potential impacts on visibility. Visibility impacts were indirectly assessed in that the background visual range used for the visibility analysis of alternative projects reflects conditions during which the New Waste Calcining Facility was operating. Volume 2, section 5.7 discusses impacts to visibility. The

Waste Immobilization Facility, which would eventually replace the New Waste Calcining Facility (and which also has similar projected NO_x emissions), has been evaluated for visibility impacts. There is currently no requirement to evaluate the New Waste Calcining Facility for NO_x reduction. Visibility impacts will be evaluated in conjunction with obtaining necessary permits.

05.02 (028) Air Quality

COMMENT

The commentor notes that: (a) the discussion of cumulative effects of airborne emissions at the Idaho National Engineering Laboratory omits discussion of visibility impacts and does not discuss the synergistic effects of exposure to multiple pollutants or long-term dose or risk from historic operations; and (b) operational accident scenarios do not seem reasonable.

RESPONSE

Visibility impacts from airborne emissions are discussed in the Volume 2, section 5.15. The impacts assessed for the alternatives are cumulative because the analysis determines the potential impairment of the visual resource over the existing background, which is representative of conditions resulting from existing emissions.

Potential synergistic effects from multiple chemical exposures are extremely difficult to assess quantitatively because there is insufficient data to indicate synergistic effects. However, the potential for synergistic effects is small where the concentrations for each individual compound are low, as is the case for the alternatives evaluated in this EIS. To ensure that potential impacts are bounded, conservatively high releases and exposure conditions were assumed. Further, the point of highest concentration for each chemical occurs at different times and places. It is unlikely that any one individual could be exposed to more than one chemical species at the concentrations reported in this EIS.

Radiation doses from historic operations are discussed in Volume 2, section 5.15.8. More information is available in referenced technical support documents, which are available for review in public reading rooms that received copies of this EIS. DOE is not aware of any generally accepted analysis methodology that has been developed to evaluate synergistic effects due to several airborne chemical constituents. DOE is aware that research into this area is continuing.

The evaluation of cumulative effects considers historic accidents only. The implementing regulations for the National Environmental Policy Act (NEPA) at 40 CFR Paragraph 1508.7 specifies "that cumulative impacts result from past, present, and reasonably foreseeable future actions..." For cumulative impacts, DOE has consistently interpreted "reasonably foreseeable" to include construction, operation,

maintenance, and other planned activities, but not to include future hypothetical accidents, inadvertent spills, and other unplanned activities. Potential chemical exposure resulting from an accident is evaluated in Volume 2, Appendix F-5.

05.02 (029) Air Quality

COMMENT

Referring to Volume 2, section 5.18.2, the commentor points out that application of refined modeling methods is not a mitigation measure.

RESPONSE

The commentor is correct. While the information derived from the application of refined modeling methods may eliminate the need for mitigation measures, the process is technically not a mitigation measure. The sentence in question has been revised. It clarifies what measures would be required if the results of refined modeling confirm the findings of the screening-level analysis; that is, visibility at the Class I area of Craters of the Moon would be perceptibly impaired as a result of projected emissions.

05.02 (030) Air Quality

COMMENT

The commentor points out that the key word "net" is missing from the description of when a Prevention of Significant Deterioration analysis must be performed.

RESPONSE

Volume 2, Appendix F, section F-3.3.1 has been revised to clarify that a Prevention of Significant Deterioration (PSD) review is required whenever any modification would result in a significant net increase of any air pollutant.

05.02 (031) Air Quality

COMMENT

The commentor states that trace elements such as nickel may also be emitted by combustion sources (e.g., generators and boilers) associated with the Pit 9 waste retrieval project.

RESPONSE

At the time the Draft EIS was prepared, no generators or boilers were proposed for the Pit 9 Retrieval Project. Since that time, however, the project has been expanded to include two boilers. The dispersion modeling now includes the projected emissions from these boilers, which include the trace elements of nickel, lead, and chromium. Emissions tables and dispersion modeling results in the EIS have been updated.

05.02 (032) Air Quality

COMMENT

The commentor notes that radiological assessment methodology for air impacts treats input data and output results as constants with no uncertainty or variability, which is not consistent with the state-of-the-art of environmental risk assessment. The commentor recommends that confidence statements be provided for estimates of the true, but unknown, value being calculated or the true, but unknown, distribution of values.

RESPONSE

The radiological assessment of air impacts used the GENII code to perform calculations of dose. The results represent best estimates for dose to an off-site individual, on-site individual, and the surrounding population. They are based on conservative release estimates, representative meteorology, and conservative assumptions regarding the location and habits of the receptors (especially for the maximally exposed off-site individual). The dispersion model algorithms are generally accepted as appropriate for this type of assessment (as opposed to research applications, in which a quantitative uncertainty analysis would be appropriate), and the computer code has been benchmarked as defined by the International Atomic Energy Agency. It can be said with confidence that the dose results, especially those for the maximally exposed off-site individual, overstate the doses that would actually occur, yet these results are still well below the most restrictive limit. Using a computer code that has been extensively tested and meets rigorous quality assurance requirements is considered sufficient for an assessment of this type under NEPA.

05.02 (033) Air Quality

COMMENT

The commentor recommends that the EIS clarify that a segment of past meteorological measurements has been chosen for the radiological assessments to be representative of average conditions to be expected for the 10-year period covered by the EIS.

RESPONSE

Volume 2, Appendix F-3.4.2 states that the meteorological data used for the radiological assessments were obtained at the various facility monitoring stations over the 5-year period 1987 through 1991. However, it was not explicitly stated that these conditions are assumed to be representative of the years covered by the EIS. Volume 2, Appendix F-3.4.2 has been revised to clarify this assumption.

05.02 (034) Air Quality

COMMENT

The commentor states that when comparing predicted concentrations of toxic air pollutants with the increment standards contained in the May 1, 1994, Idaho rules, the concentrations should be based on annual averages.

RESPONSE

The analyses in Volume 2, sections 4.7 and 5.7 compare predicted 8-hour concentrations with noncarcinogenic increments. The analyses for noncarcinogenic emissions have been revised to reflect annual average concentrations.

05.02 (035) Air Quality

COMMENT

The commentor questions the basis for $1.0 \times 10^{+04}$ curies of noble gases from the Idaho Chemical Processing Plant listed in Volume 1, Appendix B, Table 4.7-3, and Volume 2, Table 4.7-1.

RESPONSE

The value of $1.0 \times 10^{+4}$ curies represents an upper bound to the annual emissions of krypton-85 from the Idaho Chemical Processing Plant for a recent 1-year period. The actual releases for recent years have been classified. Actual baseline krypton-85 emissions from this facility are very much lower than this value. The value of $1.0 \times 10^{+4}$ curies was used in the radiological dose assessment. Because the dose from krypton-85 at these levels is not a large fraction of the overall dose, this release estimate is adequate for evaluation and comparison of alternatives required for a programmatic EIS.

05.02 (036) Air Quality

COMMENT

The commentor points out that Volume I, Appendix B, Table 5.7-1 lists ammonium hydroxide and hydrofluoric acid as toxic air pollutants (carcinogens), yet these substances are not listed in Idaho's Toxic Air Pollutants Increments.

RESPONSE

The commentor is correct. Ammonium hydroxide and hydrofluoric acid are not carcinogens and are not listed in Idaho's Toxic Air Pollutants Increments. Hydrofluoric acid emissions were listed in the table because total fluoride emissions are listed in Idaho's Toxic Air Pollutants Increments. Ammonium hydroxide emissions were assessed conservatively as ammonia, a substance that is listed in the Toxic Air Pollutants Increments. DOE has clarified that these pollutants are not carcinogens and the basis for their inclusion (as stated above) in the EIS.

05.02 (037) Air Quality**COMMENT**

The commentor states that current emissions and projected increases should be listed separately in Volume 2, and the basis for projected increases in baseline emissions should be explained.

RESPONSE

The comment concerns the listing of radionuclide emissions for potential projects. These emissions are considered reasonably foreseeable increases to the baseline. These increases currently are reflected in the data in Volume 2, Table 4.7-1, but are not listed separately. They are listed separately in the *Technical Support Document for Air Resources*, which is included as a reference for Volume 2.

Emission rates for these projects were estimated in the same manner as described for alternative projects in Volume 2, Appendix F-3.4.I.

05.02 (038) Air Quality**COMMENT**

The commentor states that analyses of air impacts should be compared with Prevention of Significant Deterioration limits, which are typically two to four times more stringent than National Ambient Air Quality Standards. The commentor points out that the Idaho National Engineering Laboratory has triggered the Prevention of Significant Deterioration baseline dates for nitrogen oxides, sulfur dioxide, and particulates and that the baseline conditions in Volume 2, section 4.7 are not Prevention of Significant Deterioration baseline conditions.

RESPONSE

The baseline date for a criteria pollutant establishes the date to start tracking consumed increments. Additional analyses have been performed to characterize the existing baseline conditions and impacts of alternatives in terms of the amount of PSD increment consumed. The methodology used was discussed with the Idaho Division of Environmental Quality, and a report documenting the methods and results has been completed and included as a reference in Volume 2. The results indicate that existing baseline conditions are within allowable increment consumption limits. When the contributions of emissions from the alternatives are added, the amount of increment consumption remains below the allowable limits for each of the alternatives. The PSD baseline analysis have been incorporated into Volume 2, section 5.7. Volume 2, Appendix F-3 has been revised to reflect the methods used to calculate PSD increment consumption.

05.02 (039) Air Quality

COMMENT

Commentors state that DOE should analyze the existing and potential air quality impacts to the Fort Hall Reservation using all wind roses that indicate possible contributions from the Idaho National Engineering Laboratory site.

RESPONSE

The air quality analyses in the EIS were based on meteorological data appropriate to the various facilities at INEL. The analyses used the hourly meteorological data obtained from three on-site monitoring stations for 1991 and 1992 and are graphically presented as wind roses in Volume 2, Figure 4.7-1. These stations are in the southeast, central, and northern sections of INEL. Similar analyses were performed for each facility. Maximum emissions concentrations from each facility were summed at specific receptor locations to determine the maximum baseline air quality impacts from present operations and the cumulative impacts from proposed actions. Additional analyses were performed to ensure that the impacts at points beyond the site boundary were less than those at the boundary (such as might occur if a facility with a tall stack were located in close proximity to the boundary). Similar analyses have been conducted to determine the air quality impacts to various locations on the Fort Hall Reservation. The air quality impacts to the Fort Hall Reservation can be found in Volume 2, sections 4.7 and 5.7, and all of these impacts would be small for the alternatives considered in this EIS.

05.02 (040) Air Quality

COMMENT

The commentor states that the Tribes object to any attempt to locate projects to avoid impacts at Craters of the Moon Class I area if such relocation results in impacts to the Tribes, especially where those impacts have not been evaluated.

RESPONSE

There are no specific proposals to relocate projects to avoid impacts at the Class I area of Craters of the Moon National Monument. However, in cases where visibility impacts to the pristine conditions at Craters of the Moon are shown to be a potential problem, all options, including changing or relocating the project in question, would be evaluated. Potential visual impacts must be further defined and resolved before projects can proceed. Additional emissions controls and relocation of projects may be required to reduce potential impacts below acceptable criteria. As changes in visual setting, particularly in the Middle Butte area located in the southern portion of the INEL site, are seen by the Shoshone-Bannock Tribes to be an adverse effect on an important Native American resource, the Shoshone-Bannock Tribes would be consulted before any project is developed that could have impacts to resources of importance to the Tribes.

05.02 (041) Air Quality

COMMENT

The commentor suggests that the impacts from fugitive dust emission modeling should differentiate between fugitive emissions from temporary and permanent sources.

RESPONSE

The text in Volume 2, Appendix F-3.4.3 has been revised to more clearly distinguish between fugitive sources that are temporary (such as construction and demolition projects) and those that are more permanent (such as unpaved roads and landfill operations). The specific fugitive sources analyzed have been identified.

05.02 (043) Air Quality

COMMENT

The commentor notes there seem to be variations in the application of models from one location to another, virtually no information regarding source terms is given, and it is difficult to know if fugitive emissions have been considered and what emissions data were used.

RESPONSE

In general, models were applied consistently between sites. However, site-specific conditions may have required a unique application. For example, the commentor mentions that site boundary impacts are assessed at some sites, but in other cases, off-site locations are considered. The EIS evaluation first identified the ambient air location of highest predicted impact to the public and then estimated the maximum pollutant concentrations at that location for comparison with applicable standards. In the case of INEL, the maximum impacted ambient air locations tend to be along public roads that traverse the site. At other sites, the nearest ambient air location may be the site boundary, because public roads do not traverse the site.

Temporary fugitive dust activities such as construction and demolition are exempt from compliance with air quality standards; nevertheless, fugitive dust impacts from construction activities were assessed and are reported in Volume 1, and Appendices A through F.

For the other DOE sites evaluated in Volume 1, source emission rates are provided, but source characteristics (e.g., elevations, velocity, temperatures) are not provided in all cases. This level of detail is more appropriate for a site-specific EIS. A discussion of the modeling and emissions is in Volume 1, Appendices A through F.

05.02 (044) Air Quality

COMMENT

Commentors assert that DOE cannot avoid responsibility for its past practices of contaminating the air by categorizing its past activities as irreversible commitments of resources. Commentors state that DOE has put forward no compelling argument for further degrading the air of both the occupied and unoccupied land surrounding the Idaho National Engineering Laboratory and object to any irreversible commitment of air quality resources that could affect the Tribes' air quality, and also tourism. Commentors further note that DOE provides no assurances that controls would be installed to avoid adverse impacts on the air quality and visibility.

RESPONSE

The air quality impact analyses have detailed the potential for air quality impacts at ambient air locations. The analyses, for the most part, have been conducted for the site boundary and roads that traverse the site. Additional analyses have been conducted for the Craters of the Moon National Monument and the Fort Hall Reservation. The analyses for criteria pollutant impacts have shown that impacts will be below all applicable ambient air quality standards. PSD standards, which have been established specifically to prevent the degradation of air quality, would be met. Toxic pollutant impacts would also be below all applicable criteria. Impacts to air quality and visual resources at the Fort Hall Reservation from INEL operations will be even less, and this should not impact tourism.

Visual resource screening analyses were conducted at Craters of the Moon National Monument. The analyses used a screening methodology to determine the potential for worst-case impacts (i.e., during maximum operating scenarios and adverse meteorological conditions). These analyses used very conservative assumptions, including that many of the important proposed sources of emissions would incorporate no or minimal emission controls. In many cases, projects are in conceptual design stages, and adequate design of emission controls is not yet available. However, impacts are not likely to be underestimated when conservative assumptions are used. A key aspect of the screening analysis is distance from the source to the potential impact area. The analysis showed some potential for adverse impacts during the worst-case conditions. Methods to decrease the impact have not been determined, but as discussed in the EIS, they will likely include controls to further reduce emissions of pollutants impacting visibility. Siting factors will also be considered, as will refined modeling analyses (in lieu of conservative screening analyses). Through the Idaho Division of Environmental Quality's Permit to Construct process, proposed projects are required to demonstrate that there will be no adverse impacts on the ambient air quality and on visibility at Craters of the Moon. Any controls needed to avoid adverse impacts to air quality and visibility would be specified in permits.

Impacts to visibility, as well as criteria and toxic pollutant loading, should not be considered irreversible and irretrievable commitments of resources, but rather short-term impacts over the life of each project. Volume 2, section 5.18 has been revised to state that impacts to air quality and visibility are not irreversible and irretrievable commitments of resources.

05.02 (047) Air Quality

COMMENT

The commentor points out that the model receptor grid spacing is very large, and that a more dense grid spacing is necessary in areas of maximum predicted impact.

RESPONSE

After the Draft EIS was completed, DOE performed additional analyses, primarily for PSD increment consumption. As part of this analysis, a finely spaced receptor array was developed. This array includes receptor points spaced at approximately 100-meter intervals in those areas where the maximum impact is predicted to occur. This dense array has since been used in the PSD analyses for existing increment-consuming sources, and for sources associated with the EIS alternatives. The additional analyses have been incorporated into the appropriate sections of the EIS.

05.02 (048) Air Quality

COMMENT

The commentor notes that statements in Volume 2 that ozone levels are "not recognized as a problem in the region" and that the Idaho Division of Environmental Quality has determined that "ozone levels within the state are well below the standard" inaccurately describe ozone levels. The commentor states the more correct situation is that the Idaho Division of Environmental Quality has no ozone monitoring data from the vicinity and is not aware of problematic ozone levels in the area.

RESPONSE

The statements cited by the commentor reflect verbal comments that were obtained by the authors from the Idaho Division of Environmental Quality. The authors acknowledge, however, that the current wording of the statements could be misinterpreted to mean that ozone levels are not a problem in the area; in fact, data to substantiate this claim may not be available. The statements in Volume 2 have been replaced with the following: "The Division of Environmental Quality has no ozone monitoring data from the vicinity and is not aware of problem ozone levels in the area."

05.02 (049) Air Quality

COMMENT

The commentor considers the statement that "no previous projects have consumed increments" (at Craters of the Moon National Monument) to be unreasonable.

RESPONSE

The commentor raises a valid question. Increment consumption is established by assessments that are submitted with PSD permit applications, and accepted by the Division of Environmental Quality. Although two PSD permit applications have been previously submitted for the INEL projects, the amount of increment consumption at Craters of the Moon National Monument, if any, had not been established. One of the two (the Fuel Processing Restoration Project at Idaho Chemical Processing Plant) has since been withdrawn and currently is being modified. The other application (for the Special Manufacturing Capability at Test Area North) had not been formally "closed out" at the time the Draft EIS was prepared. As a result of discussions with the Division of Environmental Quality, it was decided that analyses were required to firmly establish the amount of increment consumption at the time that the Special Manufacturing Capability permit application was submitted and accepted, as of May 1, 1994. Additionally, it was decided that further analyses showing increment consumption by sources associated with the EIS alternatives was also required. These analyses have been completed. The statement to which the commentor refers has been revised to reflect the updated results.

05.02 (050) Air Quality

COMMENT

The commentor points out that the assumption of Gaussian dispersion tends to break down over long distances, or where flow direction changes. The commentor further states that Gaussian models can seriously underpredict impacts in these scenarios, and predictions for the Idaho National Engineering Laboratory boundary locations may be low.

RESPONSE

While it is true that Gaussian models used to estimate upper bound levels of toxic and critical impacts may be subject to the shortcomings noted by the commentor, the Industrial Source Complex Short Term-2 (ISCST-2) model is generally regarded as appropriate for the type of modeling performed for this EIS. In virtually every nonradiological case modeled, the highest ambient air impact occurred at public road locations. In these cases, the transport distances are not long and are well within the distances for which the ISCST-2 model is considered appropriate. Results of calculations indicate 80 to 85 percent of a dose occurs in the first 20 miles. Computational assumptions selected by DOE were conservative to cover the uncertainties in calculational models.

05.02 (051) Air Quality

COMMENT

The commentor notes that there is a lack of any recent or reliable data about the effectiveness of the filtering and ventilation systems in the building where the Fort St. Vrain spent fuel would be stored at the Idaho National Engineering Laboratory. The commentor further states that the lack of these data creates uncertainty about the degree to which radionuclides emitted from the spent fuel might be vented to the environment through the storage facility's stack.

RESPONSE

There is no lack of recent reliable data about the effectiveness of the filtering and ventilation systems for the Irradiated Fuels Storage Facility where Fort St. Vrain spent nuclear fuel is stored at INEL. The facility is equipped with high efficiency particulate air (HEPA) filters having a verified filtration efficiency of 99.97 percent. Filter efficiency has been verified annually using standard Dioctyl Phthalate testing methodology. Records of these filter tests are available from 1979 to the present.

Regarding the commentor's statement about releases to the environment, stack releases are continuously monitored and records show that nearly all radioactivity has been below detectable levels. To more accurately assess historical releases to the environment, samples were obtained from the HEPA filters that have been in place since the facility was constructed. From the analysis of the filter samples, the average annual radionuclide emission rate and annual dose to a maximally exposed individual was calculated to be 4.8×10^{-6} millirem, which is significantly less than 1 percent of the limit of 10 millirem per year required for DOE facilities by the Federal National Emission Standards for Hazardous Air Pollutants.

05.02 (052) Air Quality

COMMENT

The commentor asserts that it is incorrect to state that the GENII code tends to overestimate actual doses. The commentor further asserts that neither the GENII code nor CAP-88 (with which it is compared) has undergone a comprehensive validation study in the Idaho National Engineering Laboratory environs.

RESPONSE

The commentor refers to a statement in Volume 2, Appendix F-3 to the effect that the dose results for the baseline assessment are not likely to underestimate actual baseline or future doses. Part of the basis for this statement is that baseline results in the EIS (which were modeled with GENII) were higher than results contained in the 1991 and 1992 National Emission Standards for Hazardous Air Pollutants Reports (which were modeled with CAP-88). A study benchmarking these models in INEL settings has been published recently (*Radioactive Waste Management Complex Low-Level Waste Radiological*

Performance Assessment) and is discussed in Volume 2, Appendix F-3. The point of the study is that the application of the model, including source-term and receptor-related assumptions, produces results that are likely to be conservative. The EIS has been revised to clarify this.

05.02 (053) Air Quality

COMMENT

The commentor notes that Volume 1, Appendix A, Table 5.7-1 does not show tritium releases from the K-basins.

RESPONSE

Tritium emissions from the K-basins have not been monitored because the emissions have been estimated to contribute a very small amount to the dose received by the maximally exposed individual from all airborne releases at the Hanford Site. In 1993, the average measured tritium concentration at the Hanford Site boundary was 0.90 picocurie per cubic meter and the maximum concentration was 9.9 picocurie per cubic meter. In 1993, the dose to the hypothetical maximally exposed individual from all Hanford Site emissions to the atmosphere was estimated to be 0.01 millirem. Volume 1, Appendix A, section 5.7 has been revised to reflect these data.

05.02 (054) Air Quality

COMMENT

The commentor suggests that releases from four thermal treatment facilities at the Idaho National Engineering Laboratory should be included in the EIS.

RESPONSE

The four facilities identified by the commentor are the Waste Experimental Reduction Facility, the Process Experimental Pilot Plant, the Idaho Chemical Processing Plant Denitration Facility, and the New Waste Calcining Facility. These facilities exist at INEL and are included in the baseline for emissions from the site. The Idaho Chemical Processing Plant Denitration Facility uses the main stack at the Idaho Chemical Processing Plant and is included in that source. Other thermal treatment facilities were analyzed in Volume 2, Appendix C. The sources of emissions from site facilities appear in Volume 2, sections 4.8 and 5.8, and are discussed in Volume 2, section 7.3.

05.02 (055) Air Quality

COMMENT

The commentor suggests that there is a lack of information concerning model use and input data, which hinders review and verification of the EIS.

RESPONSE

Volume 2, Appendix F-3 discusses air dispersion modeling data and assumptions and health effects for each INEL facility. Actual and foreseeable doses are a very small fraction of established DOE dose limits, and are well below the National Emission Standards for Hazardous Air Pollutants (40 CFR 61, Subpart H) limit of 10 millirem per year.

05.02 (056) Air Quality**COMMENT**

The commentor asks about the purpose of the comparison of hazard indices contained in Volume 1, Appendix B.

RESPONSE

Hazard indexes are compared to show that the data indicate no change from the baseline criteria pollutant hazard indexes under any of the alternatives. Volume 2, section 4.7 discusses the effects of INEL air emissions. DOE has expanded the language in Volume 1, Appendix B, section 5.12 to clarify the relationship between hazard indexes and reference concentrations or doses.

5.3 Cultural Resources**05.03 (001) Cultural Resources****COMMENT**

Commentors suggest that requirements under Section 106 of the National Historic Preservation Act be implemented early in the project planning process at the Idaho National Engineering Laboratory.

RESPONSE

DOE agrees that this evaluation should be done early enough to allow historic properties to be considered fully during site selection and facility design. Requirements of the National Historic Preservation Act are implemented during conceptual design if DOE proceeds with a proposed project.

05.03 (002) Cultural Resources**COMMENT**

Commentors assert that the EIS does not adequately address impacts on cultural resources from the various alternatives affecting the Idaho National Engineering Laboratory.

RESPONSE

The EIS identifies the number of known sites (approximately 1,500) on and percentage (4) of INEL surveyed only to indicate the magnitude of potential sites at INEL. Volume 2, section 4.4 discusses the use of predictive models and discusses the National Historic Preservation Act inventories that must be

completed prior to any actions. Volume 2, section 5.19 further discusses the National Historic Preservation Act Section 106 requirements concerning the evaluation of sites and mitigation of impacts.

A comprehensive inventory of prehistoric cultural resources within the boundaries of INEL is under way. To date, surveys to identify these resources have been focused on areas where adverse impacts are most likely to occur (i.e., facility perimeters, along major roadways and utility corridors, gravel pits, etc.). In addition, a preliminary predictive model has been developed to identify zones of prehistoric cultural resource density across the entire 890-square-mile facility. This model can be used by INEL project managers during the initial stages of project planning to avoid areas where prehistoric resources appear to be particularly dense, thus reducing the impact of INEL activities on sensitive cultural materials. Refinement and testing of this model are also under way through the INEL Cultural Resource Management Office. This office also maintains a complete record of all cultural resource investigations completed at INEL, as well as a database of all known cultural resources. Prior to conducting any ground-disturbing activities, INEL project managers are directed to consult with the INEL Cultural Resource Management Office to avoid damage to any sensitive materials. Under the 1992 *Working Agreement Between the Shoshone-Bannock Tribes of the Fort Hall Indian Reservation and the Idaho Field Office of the DOE Concerning Environment, Safety, Health, Cultural Resources and Economic Self-Sufficiency*, the Tribes are consulted and are given the opportunity to comment on any INEL project that has the potential to impact any cultural resource.

Based on public comments, DOE has expanded the EIS definition of cultural resources. For example, Volume 2, section 4.9 now includes a list of plants and vegetation important to the Tribes.

05.03 (003) Cultural Resources

COMMENT

The commentor expresses the opinion that there are not adequate agreements in place to protect the Shoshone-Bannock Tribes' archaeological artifacts and that options for removal of the artifacts for display and study should be considered, including executing a curation agreement.

RESPONSE

DOE has initiated the *Working Agreement, Policy on Native American Consultation* to ensure communication with the Shoshone-Bannock Tribe relating to treatment of archaeological sites during excavation, as mandated by the Archaeological Resources Protection Act, and protection of human remains, as required under the Native American Graves Protection and Repatriation Act. In keeping with DOE's Native American Policy (Memorandum EH-1: *Management of Cultural Resources at Department of Energy Facilities*, U.S. Department of Energy, Washington, DC, February 23, 1990), DOE consults

with Native Americans during the planning and implementation of all proposed alternatives. If human remains are discovered, DOE notifies all tribes that have expressed an interest in the repatriation of graves, as required under the Native American Graves Protection and Repatriation Act. The tribes then have the opportunity to claim the remains and associated artifacts. Also, the DOE Idaho Operations Office is preparing a curation agreement pursuant to the Archaeological Resources Protection Act and is also drafting a programmatic agreement for the protection of historic properties pursuant to the National Historic Preservation Act. The handling of Native American cultural resource items pursuant to the Native American Graves Protection and Repatriation Act will be addressed by both of these agreements. Mitigation measures will be developed after these agreements are implemented. Volume 2, section 4.3 has been changed to reflect these agreements.

05.03 (004) Cultural Resources

COMMENT

The commentor suggests that the EIS include mitigation measures in case cultural resources are inadvertently discovered during construction.

RESPONSE

This EIS is a programmatic document, based on current information and designed to provide decisionmakers a broad base of knowledge about the affected environment, any foreseeable impacts, and any potential mitigation measures for an identified environmental impact associated with a specific course of action. Providing specific, detailed mitigation measures, especially in areas where no environmental impact is foreseen, is beyond the scope of this document. Each DOE operations office is responsible for developing mitigation agreements, including actions to be taken in the event of discovery of archaeological resources or human remains during construction. Such agreements will be negotiated with appropriate tribes and State Historic Preservation Officers. These agreements would be referenced in future site-specific NEPA documentation when appropriate. The discussion in the EIS has been expanded to include this information.

05.03 (005) Cultural Resources

COMMENT

The commentor asserts that contamination resulting from transporting or storing SNF waste could affect hunting and gathering, which is as an irreplaceable part of the food supply and an important cultural and economic activity for the residents of the Fort Hall Reservation.

RESPONSE

There is a comprehensive environmental monitoring program at INEL, and the results are reported annually in the *INEL Site Environmental Report*. The monitoring conducted to date has not shown

contamination in game species or food stuffs that would preclude or limit hunting and gathering. The site environmental monitoring programs gather game species and food stuffs from a wide area in southeastern Idaho, extending well beyond the boundaries of INEL in all directions.

Volume I, Appendices D and I discuss impacts from both incident-free transportation and transportation accidents. The analysis shows that impacts from transportation activities for all alternatives would be small.

05.03 (006) Cultural Resources

COMMENT

The commentor objects to DOE's cultural resource impact analysis, because it minimizes impacts by fragmenting them and focuses solely on material culture.

RESPONSE

DOE performs an analysis first by looking at the individual parts. This approach allows experts on ecology, water use, land use, air quality, etc., to evaluate impacts specific to their disciplines. After these impacts are evaluated, the overall impacts to the resources are evaluated, thereby providing a holistic approach. DOE agrees that impacts to the Shoshone-Bannock Tribes include all discipline areas identified in the EIS; however, it is not feasible to include all these areas under cultural impacts.

DOE does not presume to know the locations, absence or occurrence of items, sites, or resources important to the Tribes over the whole INEL site. Nor would it be more protective of the items, sites, or resources to conduct a site-wide survey than to conduct a complete site-specific analysis in conjunction with a specific project prior to any surface- or subsurface-disturbing activities. Broadly, DOE's process is to identify a suitable site, conduct an initial survey, consult with the Tribes, and develop appropriate actions based on that consultation. The actions may include mitigation of impacts up to or including selection of another alternative site.

Volume 2, section 4.3 has been changed to discuss the Tribes' broad view of cultural resources. See also the response to comment 05.03 (002).

05.03 (007) Cultural Resources

COMMENT

Commentors assert that the EIS does not adequately address impacts on cultural resources from the various alternatives affecting the Idaho National Engineering Laboratory and that the EIS represents an opportunity for DOE to continue consultations with the Tribes.

RESPONSE

The number of known sites (approximately 1,500) and the portion (4 percent) of the INEL site that has been surveyed are identified in the EIS only to suggest the large number of potential sites at INEL.

Volume 2, section 4.4 discusses the use of predictive models and discusses the National Historic Preservation Act inventories that must be completed prior to any actions. Volume 2, section 5.19 further discusses the National Historic Preservation Act Section 106 requirements concerning the evaluation of sites and mitigation of impacts.

A comprehensive inventory of prehistoric cultural resources within the boundaries of INEL is under way. To date, surveys to identify these resources have been focused on areas where adverse impacts are most likely to occur (i.e., facility perimeters, along major roadways and utility corridors, gravel pits, etc.). In addition, a preliminary predictive model has been developed to identify zones of prehistoric cultural resource density across the entire 890-square-mile facility. This model can be used by INEL project managers during the initial stages of project planning to avoid areas where prehistoric resources appear to be particularly dense, thus reducing the impact of INEL activities on sensitive cultural materials. Refinement and testing of this model are also under way through the INEL Cultural Resource Management Office. This office also maintains a complete record of all cultural resource investigations completed at INEL, as well as a data base of all known cultural resources. Prior to conducting any ground-disturbing activities, INEL project managers are directed to consult with the INEL Cultural Resource Management Office to avoid damage to any sensitive materials. Under the 1992 *Working Agreement Between the Shoshone-Bannock Tribes of the Fort Hall Indian Reservation and the Idaho Field Office of the DOE Concerning Environment, Safety, Health, Cultural Resources and Economic Self-Sufficiency*, the Tribes are consulted and are given the opportunity to comment on any INEL project that has the potential to impact any cultural resource.

Based on public comments, DOE has expanded the EIS definition of cultural resources. For example, Volume 2, section 4.9 now includes a list of plants and vegetation important to the Tribes.

DOE has increased its consultation with the Shoshone-Bannock Tribes. A series of consultations involving management and technical personnel from the Tribes and DOE have resulted in a better understanding and resolution of mutual concerns. DOE continues to meet with the Tribes and plans to do so when implementing the actions proposed in the EIS.

5.4 Biological Resources

05.04 (002) Biological Resources

COMMENT

The commentor notes that many studies have been conducted by biologists, botanists, etc., around the Hanford Site and Idaho National Engineering Laboratory areas with intriguing results.

RESPONSE

Every effort has been made to review all pertinent studies for inclusion in the EIS. The public hearing moderator requested that the speaker identify any pertinent additional studies so that they may be evaluated. None was provided by the commentor.

05.04 (004) Biological Resources

COMMENT

The commentor suggests that the EIS considers the Arco desert to be a wasteland suitable for storage of spent nuclear fuel, which the commentor believes is a gross misunderstanding of the ecosystem and surrounding geography.

RESPONSE

DOE and the Navy consider sensitive ecosystems and habitats when designing and siting projects and comply with the laws and regulations protecting wildlife resources, including those protecting threatened and endangered species, to ensure the impacts of proposed activities are minimal. As described in Volumes 1 and 2, Chapter 5, measures for protecting ecological resources would be developed in consultation with the appropriate agencies if any sensitive ecosystems or habitats are identified on a project site. Preconstruction surveys would be conducted to determine the presence of these resources. DOE has designated INEL a National Environmental Research Park.

05.04 (005) Biological Resources

COMMENT

The commentor states that Idaho National Engineering Laboratory operations have caused minimal harm to animals and endangered species.

RESPONSE

DOE agrees with the commentor and notes that it has designated INEL a National Environmental Research Park. DOE considers threatened and endangered species and sensitive habitats when designing and siting its programs. It complies with the laws and regulations protecting wildlife resources, including those protecting threatened and endangered species, to ensure that the impacts of DOE activities are minimal. As described in Volume 1, section 5.7.7, measures to avoid or mitigate impacts to

ecological resources would be developed in consultation with the appropriate agencies if any threatened or endangered species or sensitive habitats are identified on a project site. Preconstruction surveys would be conducted to determine the presence of these resources.

05.04 (006) Biological Resources

COMMENT

The commentor asks about risks to the fragile ecosystem of marine waters near Seattle, Washington.

RESPONSE

Volume 1, Chapter 5, Appendices D and K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives.

05.04 (007) Biological Resources

COMMENT

The commentor states that the EIS must address wildlife management practices at the Idaho National Engineering Laboratory as well as the impacts to wildlife that could result from the alternatives, and that the Tribes should be afforded hunting rights on the site.

RESPONSE

While DOE manages the game habitat at INEL, the State of Idaho manages wildlife and has jurisdiction over hunting rights within the INEL boundary. Issues relating to wildlife management or requests for hunting rights must be addressed to the state.

Impacts to wildlife that could occur as a result of the various alternatives, and subsequent mitigation measures, are discussed in Volume 2, Chapter 5, sections 5.9 and 5.19.

05.04 (008) Biological Resources

COMMENT

The commentor states that Idaho National Engineering Laboratory impacts cannot be evaluated without specific sites selected for certain new construction projects, and that DOE should minimize impacts on wildlife habitat by clustering new facilities near currently disturbed areas.

RESPONSE

Volume 2, Appendix C specifies the location of potential disturbances. DOE has attempted to site proposed activities in the most environmentally benign locations that will meet health and safety requirements. Siting was considered in the following order of preference: (1) locate in existing

facilities, (2) locate in existing industrial areas on previously disturbed areas, (3) locate in industrial areas on undisturbed areas, (4) locate outside, but immediately adjacent to, industrial areas, and (5) locate outside and away from existing industrial areas.

The three projects that would cause most of the disturbance outside and separate from the current industrial areas are the Idaho Waste Processing Facility, the Alpha-Mixed Low-Level Waste Treatment Facility, and the Alpha-Mixed Low-Level Waste Disposal Facility. All three projects are still in the conceptual design phase and would require project-specific NEPA documentation before resources are committed. Because it is still in the design phase, the specific location for the Idaho Waste Processing Facility is not well defined. The EIS states that it may be located near the Radioactive Waste Management Complex (RWMC) or at other existing industrial locations on the INEL site. For purposes of analysis in the ecological consequences section of the EIS, the Idaho Waste Processing Facility was located 4 kilometers (2.5 miles) east of the RWMC. This is the most conservative siting method because it would result in the largest impact to ecological resources. Similarly, the Alpha-Mixed Low-Level Waste Treatment Facility and the Alpha-Mixed Low-Level Waste Disposal Facility may be located in or adjoining existing INEL facilities. The most conservative assumption was used for the analysis: that a private facility would be built 4 kilometers (2.5 miles) west of the RWMC.

As stated in the EIS, DOE would perform site-specific preactivity surveys to identify any sensitive resources on the site to ensure that impacts from the proposed actions are identified and that mitigation measures can be developed and integrated into the project.

05.04 (009) Biological Resources

COMMENT

The commentor states that Volume 1, Appendix F should include language to ensure that actions will preserve wetland resources, if such resources exist. The commentor also states that the presence of wetlands on a proposed construction site is not addressed.

RESPONSE

As discussed in Volume 1, Appendix F, Part Two, sections 4.9.2 and 5.9.1, there are no wetlands on the proposed SNF site at the Nevada Test Site (NTS); thus, no special preservation efforts are required.

Oak Ridge Reservation (ORR) wetlands are discussed in Volume 1, Appendix F, Part Three, sections 4.9.2 and 5.9.1. It is DOE policy to comply with Executive Order 11990, *Protection of Wetlands*, which directs government agencies to avoid any short- and long-term adverse impacts on wetlands wherever there is a practicable alternative. If ORR is chosen as a site for SNF management, the potential for

impacts on wetland resources on the site would be specifically analyzed, along with potential opportunities to avoid or otherwise mitigate impacts. Unavoidable impacts to wetlands would be mitigated according to DOE policy.

05.04 (010) Biological Resources

COMMENT

The commentor states that mitigation measures, including those for the desert tortoise, are not adequately addressed in Volume 1, Appendix F.

RESPONSE

A biological opinion concerning the desert tortoise has been issued by the U.S. Fish and Wildlife Service covering current projects at the NTS. (See Volume 1, Appendix F, Part Two, section 4.9.4.) As described in Volume 1, Appendix F, Part Two, section 5.9, recommended mitigation measures included preactivity surveys for the tortoises and their removal from affected areas, as well as periodic inspections and eventual backfilling, covering, or installation of tortoise-proof fencing around open construction trenches and excavations, and reducing speed limits on site roadways. After consulting with the U.S. Fish and Wildlife Service and the Nevada Division of Wildlife, similar recommendations would be implemented, as appropriate, if NTS were selected as the location for a SNF facility. Providing specific, detailed mitigation measures is beyond the scope of this EIS and will be addressed in tiering NEPA documentation when appropriate.

05.04 (011) Biological Resources

COMMENT

Commentors state that the EIS failed to consider potential impacts on fish and wildlife from transportation of spent nuclear fuel and other hazardous materials. This includes accidents, alternative route analysis, threat reduction, and mitigation of impacts to wildlife from transportation accidents.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small, including the impacts to fish and wildlife. While there would be differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives.

Volume 2, section 5.19 addresses mitigation for both operations and accident conditions. Volume 2, section 5.11 covers all transportation impacts, including incident-free transportation and transportation accidents. Regional traffic impacts are also covered. As noted in Volume 2, section 5.11, the increased

movements of materials and people due to all alternatives would result in no change to the level of service of U.S. Highway 20, the regional highway with the highest use around INEL.

An accident with a release of radionuclides or hazardous material into the environment could result in temporary exposures of biota. The impact would likely be localized and of short duration. State and U.S. Fish and Wildlife Departments and Natural Resource Trustees would be consulted to receive input for the most appropriate response for the specific accident and current conditions. The emergency response efforts would focus on cleaning the site and removing contaminants as completely and as rapidly as possible. While radiological impacts from accidents could result in loss of individual animals and plants, long-term losses or large-area losses would not be anticipated. Impacts to fish would depend on the material and quantity spilled into the aquatic environment, and must be evaluated on a case-by-case basis.

Volume 2, Chapters 4 and 5 have been modified to include information on threat reduction and evaluation of the impacts of collision accidents wildlife.

05.04 (013) Biological Resources

COMMENT

The commentor states big game kills by trains are not reported in the EIS, and increased risk of wildlife kills by train transport are not addressed in the EIS.

RESPONSE

Information was obtained from the State of Idaho Division of Wildlife Management concerning incidents involving trains killing large numbers of pronghorn antelope. This information has been included in Volume 2, section 4.11. See also the response to comment 05.04 (011) regarding changes in the EIS to evaluate impacts of transportation accidents.

05.04 (014) Biological Resources

COMMENT

The commentor asks about depredation problems associated with antelope and elk in the Idaho National Engineering Laboratory area.

RESPONSE

The alternatives would disturb up to 726 acres of land outside of current facility fences or boundaries. While depredation may increase, the increase is likely to be low because most of the disturbances would be located about 5 kilometers (3 miles) from the RWMC, which is located within the INEL boundary and

far from any croplands. Policies concerning restrictions on hunting at INEL are not within the scope of this EIS.

05.04 (015) Biological Resources

COMMENT

The commentor notes that a statement that no Federally listed species are expected to be affected by construction and operation of the spent nuclear fuel management facility is in conflict with Volume 1, Appendix F, Part 3, Table 4.9-1.

RESPONSE

Volume 1, Appendix F, Part 3, Table 4.9-1 lists species that "potentially occur on or in the vicinity of the Oak Ridge Reservation" but not necessarily on the project site. Volume 1, Appendix F, Part Three, section 4.9.4 describes the expectation of species occurrence on the proposed project site and identifies the species most likely to occur on the project site, none of which is Federally listed. None of the species listed in Table 4.9-1 has been observed on the proposed project site. No species listed as threatened or endangered by the U.S. Fish and Wildlife Service, in accordance with the Endangered Species Act, are expected to occur on the site and, thus, they would not be impacted. Impacts to state-listed and other special-status species are described in Volume 1, Appendix F, Part Three, section 5.9.1. There may be cumulative impacts on other special-status species, which consist of two plant and five raptor species. The cumulative effect to wildlife habitats is discussed in Volume 1, Appendix F, Part Three, section 5.16.1. Any loss of forested habitat would be a small percentage of the total forested area on or in the vicinity of ORR.

05.04 (016) Biological Resources

COMMENT

The commentor expresses the opinion that storing spent nuclear fuel at the Savannah River Site presents a potential ecological problem.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives.

For the Savannah River Site (SRS), potential effects from operations conditions would be primarily from disturbance of habitat, rather than effects from radionuclides. Potential effects from accidents would

result in exposures to biota. However, emergency response would limit the potential impacts to a small localized area.

05.04 (017) Biological Resources

COMMENT

The commentor suggests that terrestrial biota may be subject to more radiation exposure than humans, because human exposure can be limited by special clothing and protective equipment.

RESPONSE

Terrestrial biota are not subject to exposure under conditions that would require special clothing or protective equipment for humans. Work areas where potential radiation exposure is high and where monitored site workers use protective equipment have controlled access measures that limit entry by biota. So long as exposure limits protective of humans are not exceeded, no substantial radiological impact on biota would be expected as a result of waste management activities at the proposed spent nuclear fuel facility.

Volume 1, Appendix F, Part Two, section 5.9 has been modified to clarify that most waste management activities take place in enclosed environments and that outdoor radiation exposures are usually below regulatory requirements.

05.04 (018) Biological Resources

COMMENT

The commentor states that until surveys are conducted at the Oak Ridge Reservation facility, the status of sensitive flora, fauna, and habitat is in question and could be a factor in selection of a final management plan.

RESPONSE

The commentor is accurate in stating that until site surveys are completed, the status of the flora, fauna, and habitat remain in question and could be a factor in the selection of the specific sites at ORR. Site-specific analyses are not appropriate for a programmatic EIS and would only be performed if ORR is selected. The analyses in the EIS are based on existing documentation.

05.04 (019) Biological Resources

COMMENT

The commentor suggests that animals near proposed new or expanded facilities in Idaho should be relocated to a similar environment.

RESPONSE

Generally, it is not feasible to relocate all animals disturbed by construction activities. Most animal species that would be displaced include insects, reptiles, and small mammals. Preactivity surveys would be conducted to determine if any endangered species or sensitive habitats are in the area. Where practical, proposed facilities are clustered near existing facilities to minimize impacts to undisturbed areas. Measures to minimize impacts to wildlife at INEL are discussed in Volume 2, section 5.19.6.

05.04 (020) Biological Resources**COMMENT**

One commentor states that DOE and the Navy have failed to study the possibility that fish migrating up the Columbia and Snake Rivers to Idaho could pick up radioactive particles, contaminate pristine Idaho wilderness areas, and impact endangered species. Another commentor states that the Hanford Site would be a poor storage area unless the already "depleted salmon" are protected.

RESPONSE

Volume 1, Appendix A, sections 4.8 and 4.9 have been modified to address potential impacts on aquatic life in the Columbia River. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in the EIS. The analyses show that the impacts of all alternatives would be small.

All liquid effluents from Hanford Site facilities are monitored to ensure that aquatic resources are protected. Fish populations are safe for human consumption. Radionuclide levels in fish from the Hanford Reach are not significantly higher than those of fish found upstream. Fish migrating from the Columbia River up the Snake River to Idaho would not pass through the Hanford area, because the confluence of the two rivers is downstream from the Hanford Site. Fish inhabiting or moving through downstream areas would also not be expected to have elevated radionuclide levels.

Any new facility would be built using technologies to protect these resources, including leak detection and water-balance monitoring equipment. Excess process water from the proposed facility would be treated before it is released to surface water or groundwater.

In some accident scenarios, such as a seismic event at Hanford with a frequency of occurrence of once every 1,000 years, contamination could reach the Columbia River. Individual fish in the affected reach of the river could become contaminated. However, contamination spread by the fish, and any associated risk, would be small compared with the environmental risk posed by more direct pathways in an accident scenario. Monitoring at DOE facilities indicates the most critical pathways for environmental

contamination are generally through direct airborne and waterborne releases, rather than contamination spread through animals or fish.

05.04 (021) Biological Resources

COMMENT

The commentor states that impacts of transport, storage, and accidental releases on threatened, endangered, and sensitive species should be considered.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS, including those to threatened and endangered species. The analyses show that the impacts of all the alternatives would be small.

Threatened and endangered species and habitats are considered in the design and siting of programs and facilities. Volumes 1 and 2, section 7.2.1 identify all Federal environmental statutes and regulations, including the Endangered Species Act, that may apply to the programmatic alternatives for SNF management. DOE and the Navy comply with all applicable laws and regulations designed to protect wildlife resources to ensure impacts are minimal. These regulations include U.S. Department of Transportation (DOT) regulations on transport of hazardous and/or radioactive materials. Measures for minimizing impacts to sensitive species are described in Volumes 1 and 2, Chapter 5.

05.04 (022) Biological Resources

COMMENT

The commentor states that there are virtually no data or literature references to support the Idaho National Engineering Laboratory ecological analyses and conclusions.

RESPONSE

The *Environmental Resource Document for the Idaho National Engineering Laboratory* referenced in the EIS provides an extensive compendium of documentation concerning the Idaho National Engineering Laboratory (INEL) environment and ecology. Additionally, *Radioecology of the Idaho National Engineering Laboratory* (Draft) provides a literature search and an evaluation of radiological impacts of current INEL operations. Both of these documents are referenced in the EIS and are available in reading rooms and information locations listed in the EIS.

05.04 (023) Biological Resources

COMMENT

The commentor questions the effects on endangered species in the Twin Falls Thousand Springs area as a result of impacts to the Snake River aquifer.

RESPONSE

Under all alternatives considered, possible future sources of aquifer contamination would be small. Water quality in the aquifer would be expected to improve under current waste management practices under all alternatives. Increased water use at INEL would range from 1.3 percent under the No Action alternative to 4.0 percent for the Ten-Year Plan alternative; or approximately 0.43 to 1.3 percent of the total aquifer flow beneath INEL. Currently, a substantial portion of water pumped from the aquifer at INEL is discharged to the surface and eventually returned to the aquifer. The current water withdrawal rate is equivalent to 56 percent of a typical irrigation well pumped 365 days per year. Because of the small percentage of water consumed, there would be a small impact to water levels or quantities in the aquifer, or to threatened or endangered species in the Thousand Springs area. A discussion and evaluation of present and potential impacts to water quality and quantity under the alternatives analyzed is provided in Volume 2, sections 4.8 and 5.8.

05.04 (024) Biological Resources

COMMENT

The commentor states that it would be inappropriate to ship spent nuclear fuel through Puget Sound, a great natural area.

RESPONSE

The EIS evaluates potential environmental impacts of transporting SNF in the Puget Sound area. Naval Nuclear Propulsion Program shipments of Naval SNF are made in accordance with all applicable regulations. Shipments of radioactive materials associated with Naval SNF have never resulted in any measurable release of radioactivity to the environment, nor has there ever been an accident involving the release of radioactive material during shipment since the Naval Nuclear Propulsion Program began. The potential impacts to the local environment at Puget Sound from transportation of Naval SNF are discussed in Volume 1, Appendix D, Chapter 5 and Attachment A.

05.04 (026) Biological Resources

COMMENT

The commentor states that the EIS neither describes ongoing activities nor analyzes their impacts in association with past and future activities and is therefore not comprehensive.

RESPONSE

Volume 2, Chapter 4 describes the existing environment at INEL. Volume 2, Chapter 2 discusses the current activities, facilities, and missions at INEL. Site-specific impacts, including cumulative impacts are presented in Volume 2, Chapter 5 and Appendix F. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize all of the alternatives considered in this EIS. The analysis show that the impacts of all alternatives would be small.

05.04 (027) Biological Resources**COMMENT**

The commentor states that the Draft EIS should address loss of habitat at the Oak Ridge Reservation and the effects on the regions ecosystems by a change in land use.

RESPONSE

Both land use and habitat loss are considered in Volume 1, Appendix F. ORR occupies an area of 140 square kilometers (54 square miles). In 1980, DOE designated 54 square kilometers (21 square miles) of undeveloped ORR land to a National Environmental Research Park. Approximately 58 percent of the land on ORR [80 square kilometers (31 square miles)] can be classified as undeveloped due to its current land designation. By comparison, the SNF program would require about 0.36 square kilometers (0.14 square miles). Volume 1, Appendix F, Part Three, section 5.9 assesses impacts to ecological resources for both the Centralization and Regionalization alternatives. Neither alternative would present any significant impacts to ecological resources through alterations or loss of habitat.

5.5 Geology**05.05 (011) Geology****COMMENT**

The commentor notes that no geologists from the Oak Ridge area were used to help prepare Volume 1, Appendix F, Part Three.

RESPONSE

The document was prepared using existing references and currently published information. The references cited for the Volume 1, Appendix F, Part Three discussion of ORR include current information on geology in that area.

05.05 (012) Geology**COMMENT**

The commentor is of the opinion that the EIS is a coverup, especially regarding seismic hazards and geologic events.

RESPONSE

The best available information relative to seismic hazards and geologic events is provided in Volumes 1 and 2, section 4.6, the site-specific appendices to Volume 1, and associated references. The EIS provides sufficient information to allow independent evaluation of the seismic hazards and geologic events.

05.05 (013) Geology**COMMENT**

The commentor notes that the Knox Group is divided into five formations, not four. The five formations are the Copper Ridge Dolomite, the Chepultepec Dolomite, the Longview Dolomite, the Kingsport Formation, and the Mascot Dolomite.

RESPONSE

The EIS has been revised to incorporate the information.

05.05 (014) Geology**COMMENT**

The commentor states that the EIS does not address correcting current seismic deficiencies at Idaho National Engineering Laboratory facilities.

RESPONSE

DOE Order 5480.28, *National Phenomena Hazards Mitigation*, specifically requires facilities to be reevaluated when there is any change in design and construction standards. Existing facilities at INEL have undergone continual safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C are proposed by DOE to replace or upgrade facilities at INEL. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities, have resulted from the ongoing safety analysis and seismic design reviews. Volume 2, Table 2.2.1 addresses the correction of seismic deficiencies identified with fuel storage facilities at INEL.

05.05 (015) Geology**COMMENT**

The commentor states that storing radioactive material in a seismically active area like the Idaho National Engineering Laboratory could result in catastrophic consequences.

RESPONSE

Seismic hazards and geologic analyses can be found in Volume I, section 4.2 and Appendix B, section 4.6, and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. The results of accident analyses (including seismically induced accidents) indicate that the risk to the public from INEL operations is small. DOE takes seismic hazards very seriously, and INEL uses independently and extensively reviewed analyses to support the enforcement and implementation of DOE Orders and standards. An INEL seismic hazard assessment was completed in 1990. A more recent seismic hazard assessment for INEL is referenced in the EIS as *Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft). See also the response to comment 05.05.01 (040).

05.05 (017) Geology**COMMENT**

Several commentors state that geologic conditions at the Idaho National Engineering Laboratory could result in a sequence of events that would cause contamination of the Snake River Plain aquifer.

RESPONSE

An accident scenario resulting in maximum potential for groundwater contamination at INEL was analyzed in the EIS in Volume 2, section 5.14 and Appendix F to determine the effects of such an accident on the Snake River Plain aquifer. The hypothetical accident involves the instant failure of a high-level waste tank due to an earthquake. The groundwater analysis assumed failure of the containment and no mitigating measures to minimize flow from the waste tank into the soil immediately following the failure. This hypothetical scenario represents the situation with the maximum reasonably foreseeable impact on the aquifer. Maximum radionuclide concentrations would be predicted to reach the INEL boundary 300 years after the hypothetical accident in concentrations less than EPA maximum contaminant levels (MCLs) or DOE derived concentration guidelines (DCGs). See also the response to comment 05.08.01 (030).

05.05 (024) Geology**COMMENT**

Commentors express opinions that the selection of the Oak Ridge Reservation as an alternative site was performed in haste, and/or did not adequately consider the geology of the West Bear Creek Valley site.

RESPONSE

The selection of ORR and NTS as alternative sites resulted from public comments received during the scoping process for this EIS. Information about the site-selection process at ORR is provided in *Request for Support in Preparing the Spent Nuclear Fuel and Idaho National Engineering Laboratory*

Environmental Restoration and Waste Management Environmental Impact Statement, and Alternate Site Selection Decision Process Report.

The West Bear Creek Valley site was selected for evaluation and comparison in this EIS. Published geologic information was considered in making this selection. Adequate information is provided to make programmatic decisions and evaluate alternatives in this EIS.

05.05 (026) Geology

COMMENT

The commentor states that significant adverse geologic events could cause radioactive releases.

RESPONSE

The general geological features of the alternative sites are described in Volume I, Chapter 4 and potential impacts associated with geologic events are summarized in Volume I, Chapter 5, section 5.2.4. Details on the geological features and potential dangers associated with those features are in Volume I, Appendices A through F for the alternative sites. DOE recognizes the potential adverse effects that geologic events can have on facilities, and the EIS includes analysis of accidents and the potential consequences associated with geologic events, such as earthquakes. The accidents evaluated included those with an estimated probability ranging from once in 1 million years to once in 10 million years. As described in Volume I, section 5.1.6, the probabilities of accidents with the potential for significant impacts occurring would be small. The risks to the public from radioactive releases would be small for all of the impacts considered. See also the response to comment 05.05.01 (016).

05.05 (028) Geology

COMMENT

The commentor states that it is appropriate to acknowledge the zinc and fluorspar districts are to the northeast of Knoxville, Tennessee, and southwest of the Oak Ridge Reservation, respectively. The commentor also notes that zinc prospects and sulfide mineralization may occur in the Oak Ridge area.

RESPONSE

As required by Council on Environmental Quality (CEQ) regulations, the description of the affected environment is no longer than is necessary to understand the effects of the alternatives. No impacts to geologic resources are expected from any of the alternatives; therefore, impacts to remote mineral districts are not expected. If ORR is chosen as a site for new SNF management facilities, site-specific geologic studies would be performed as necessary to determine the full extent of geologic resources at the proposed site.

A discussion of the geologic resources at ORR is presented in the EIS in Volume I, Appendix F, Part Three, section 4.6.

5.5.1 Seismic Characteristics

05.05.01 (001) Seismic Characteristics

COMMENT

The commentor questions the adequacy and conservatism of seismic hazard studies at the Idaho National Engineering Laboratory.

RESPONSE

Seismic hazards and geologic analyses for INEL can be found in Volume I, section 4.2; Volume I, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5, and Volume I, Appendix B, section 5.15. The accident analyses (including seismically induced accidents) indicate that the risk to the public from INEL operations is small. DOE takes seismic hazards very seriously, and INEL uses independently reviewed analyses to support the enforcement and implementation of DOE Orders and standards.

Major DOE Idaho Operations Office-managed nuclear facilities currently in use at INEL were built or have been evaluated to design basis accelerations that exceed accelerations that would result from a 7.0 moment magnitude earthquake at the southern end of the Lemhi fault zone. There has been an extensive effort over the past several years to upgrade DOE Orders and standards related to natural phenomena hazards.

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, sets forth DOE procedures to design, assess, and operate DOE facilities so that workers, the general public, and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. This Order specifically requires facilities to be reevaluated when there is any change in design and construction standards. Existing INEL facilities have undergone substantial safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C of the EIS are proposed by DOE to replace or upgrade facilities at the site. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

The data and methods used in the seismic hazard report referenced in Volume 2, section 4.6 as *Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft)

were extensively and independently reviewed. This report includes graphs showing rate of occurrence versus acceleration for seismic events for each major facility at INEL. The seismic hazard curve for the Idaho Chemical Processing Plant was included as an example of the information contained in the INEL seismic hazard analysis [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft)]. The final versions of this report may be incorporated into the INEL architectural and engineering standards after review by the INEL Natural Phenomena Committee.

The previous INEL seismic analysis (*Earthquake Strong Ground Motion Estimates for the Idaho National Engineering Laboratory: Final Report*) was also extensively reviewed and incorporated into the INEL standards after review by the Natural Phenomena Committee in 1992.

This report is referenced in Volume 2, section 4.6 and Volume 2, Appendix F-2 and contains facility- and location-specific seismic hazard information.

The EIS summarizes current scientific evidence relevant to understanding the existing environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. The evaluation of impacts is based on methods generally accepted by the scientific community.

See also the response to comment 05.05.01 (007).

05.05.01 (002) Seismic Characteristics

COMMENT

The commentor states that the Basin and Range Province north of the Idaho National Engineering Laboratory lacks adequate seismic monitoring.

RESPONSE

During 1991 and 1992, DOE increased its network of seismic monitoring stations from 11 to 26 locations, including stations in the Basin and Range Province. This network supplements measurements continuing by U.S. Geological Survey (USGS) facilities. INEL regularly exchanges data with other seismic monitoring networks around the region, including data for earthquakes that occur between networks. INEL scientists currently are supporting studies of the 1994 Raney Peak earthquake sequence and have supported some of the 1983 Borah Peak earthquake studies.

05.05.01 (003) Seismic Characteristics

COMMENT

The commentor questions why the overall level of seismic hazard calculated in the EIS for Idaho National Engineering laboratory is lower than the seismic hazard curves for either the Hanford Site or the Savannah River Site.

RESPONSE

The possible reasons for the relatively low seismicity, with respect to the more seismic Basin and Range Province, for the Eastern Snake River Plain (ESRP) are discussed in Volume 2, section 4.6. The differences noted by the commentor result from the site-specific data used to assess seismic hazards. In particular, INEL has modeled ground motions based on site-specific analyses. Ground-motion attenuation characteristics result from using source parameters for Basin and Range Province earthquakes, lower stress drops, lower recurrence intervals for the southern segments of the Basin and Range Province faults (Lemhi, Lost River, and Beaverhead), and the unique subsurface geology (interbeds of basalt and sediment) that tend to deamplify ground motions.

Additional factors contributing to the relatively low seismic hazard for INEL are the distance from the facilities to Basin and Range Province faults, INEL-specific attenuation characteristics, and the low seismicity of the ESRP.

The Hanford Site models use empirical data derived from California earthquakes and considers a magnitude 9 subduction zone earthquake. SRS has a thicker layer of soil and subsurface geology that results in less scattering during transmission of seismic waves. Both of these conditions tend to amplify ground motions at SRS.

05.05.01 (004) Seismic Characteristics

COMMENT

The commentor notes that within 125 miles of the Idaho National Engineering Laboratory, 232 possibly active fault segments, including 20 with proven late Quaternary or younger displacement, exist. The commentor suggests that this observation is inconsistent with the relatively low seismic hazard for the Idaho National Engineering Laboratory presented in the EIS.

RESPONSE

In the Probabilistic Seismic Hazard Assessment studies [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft)] referenced in the EIS, DOE assessed and determined the major seismic sources in the vicinity of INEL. Because most of the seismic sources noted by the commentor are some distance from INEL, they are not significant contributors to the

seismic hazard. The closest and most significant seismic sources, the Beaverhead, Lost River, and Lemhi faults, are considered in INEL seismic hazard assessments. The Probabilistic Seismic Hazard Assessments used at INEL have been independently reviewed and are developed consistent with the requirements of DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*. The details of the characterization of the potential seismogenic sources, and how they are incorporated into seismic hazard assessments can be found in Volume 2, section 4.6 or its references.

The possible reasons for the relatively low seismicity, with respect to the more seismic Basin and Range Province, for the ESRP are discussed in Volume 2, section 4.6. The differences noted by the commentor result from the site-specific data used to assess seismic hazards. In particular, INEL has modeled ground motions based on site-specific analyses instead of empirical data. These curves result from using source parameters for Basin and Range Province earthquakes with lower stress drops, lower recurrence intervals for the southern segments of the Basin and Range Province faults, including the Lemhi, Lost River, and Beaverhead faults, and the unique subsurface geology of interbeds of basalt and sediment that tend to deamplify ground motions. Additional factors contributing to the low seismic hazard for INEL (relative to other DOE sites) are the distance from the facilities to Basin and Range Province faults, INEL-specific attenuation characteristics, and the low seismicity of the ESRP. See also the response to comment 05.05.01 (003).

05.05.01 (005) Seismic Characteristics

COMMENT

The commentor states that the coastal plain of South Carolina and Georgia is earthquake prone with "six faults in multiple directions" and is a poor site for temporary or long-term storage of spent nuclear fuel.

RESPONSE

The general geologic features of the alternative sites are described in Volume 1, Chapter 4 EIS and potential impacts associated with geologic events are summarized in Chapter 5, section 5.2.4. Details on the geologic features and potential dangerous events associated with those features are in Volume 1, site-specific Appendices A through F for the alternative sites. DOE recognizes the potential adverse effects that geologic events can have on facilities, and the EIS includes analysis of accidents and the potential consequences associated with geologic events, such as earthquakes. The accidents evaluated include those with an estimated probability ranging from once in 1 million years to once in 10 million years. As described in Volume 1, section 5.1.6, the probabilities of accidents occurring with the potential for significant impacts would be small. The accident analyses (including seismically induced accidents) indicate that the risk to the public from DOE operations would be small. Because DOE uses safety procedures and engineering design practices that minimize the effects of hazardous geologic phenomena,

coupled with emergency response measures, the risks to the public from radioactive releases are further reduced.

The site-specific response can be found in Volume I, Appendix C, section 4.6.3, which describes the region's geology, including fault systems and seismic history; section 5.8, which discusses the consequences of analyzed seismic events on both surface water and groundwater resources; and Volume I, Appendix C, Attachment A-2.1.3, which describes estimates of risk that consider both the probability of and the consequences from a wider range of seismic events, ranging from local and regional historically documented earthquakes to postulated lower probability events with potentially greater consequences.

05.05.01 (006) Seismic Characteristics

COMMENT

The commentor quotes a Woodward-Clyde study, commissioned by DOE, as having more realistic measures of likely ground motions and suggests that DOE adopt these standards as an interim measure.

RESPONSE

DOE has adopted this study (*Earthquake Strong Ground Motion Estimates for the Idaho National Engineering Laboratory: Final Report*) and has incorporated the resulting seismic ground motions into the architectural and engineering standards for INEL.

05.05.01 (007) Seismic Characteristics

COMMENT

The commentor states that a great deal more research, both onsite and in the surrounding regions, is necessary before the Snake River Plain can be declared "aseismic."

RESPONSE

Seismic hazards and geologic analyses can be found in Volume 1, section 4.2; Volume I, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. The accident analyses, including seismically induced accidents, indicate the risk to the public from INEL operations would be small.

The assertion that the Snake River Plain has a low rate of seismicity is supported by the evidence in Volume 2, Figure 4.6-3, which represents a summary of the best available data at the time the data for the EIS was compiled, and states the years over which the data were collected. The addition of subsequent seismic events in the region would not change the conclusion that the Snake River Plain has a

low rate of seismicity compared with the Basin and Range Province. The term "aseismic" has been avoided in the EIS to eliminate confusion.

Empirical evidence does not support the commentor's assertion that a major seismic event is likely to occur in the future on the ESRP. Studies of fault scarps on the ESRP indicate that a seismic event with a moment magnitude of 5.3 is the maximum event recorded in the rocks at the surface, which range in age from 1.2 million to 2,100 years old. Thus, there is long-term geologic evidence with respect to the ESRP geologic record with which to assess its magnitude of seismicity. The moment magnitude 5.3 estimate is conservative with respect to earthquake magnitudes observed in similar tectonic environments and the assumed instantaneous stress release. Further conservatism in the seismic hazard assessment cited in the EIS [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory (Draft)*] is introduced through the use of a random ESRP earthquake, which has been assigned a moment magnitude of 5.5 to 6.0. The methods and data used in this study have been independently reviewed. The random earthquake is used to analyze the potential effects of potential seismic events related to structures that do not have a surface expression.

Stress indicators show that the ESRP is subject to the same extensional stress as the adjacent Basin and Range Province. There is geologic evidence to support the hypothesis that the ESRP is extending at the same rate as the Basin and Range Province but by the different, less seismically intense mechanism of basaltic dike injection. The rate and magnitude assumed for the random earthquake is consistent and conservative with respect to these observations. These observations also indicate that elastic energy is not being stored for release in a major seismic event. Other possible explanations for the low seismicity of the ESRP can be found in Volume 2, section 4.6. The hypothesis that stored elastic energy will result in catastrophic brittle failure of the crust below INEL is not supported by published independently reviewed earth science literature or the local geology of INEL. Despite mapping of INEL and adjacent areas, such a catastrophic faulting event has not been observed in surface basalt flows that are up to 1.2 million years old.

The EIS summarizes existing credible scientific evidence relevant to understanding the existing environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. The evaluation of impacts is based on methods generally accepted by the scientific community. The analyses reported in the EIS evaluate the potential consequences of reasonably foreseeable events.

05.05.01 (008) Seismic Characteristics

COMMENT

The commentor states the potential for major earthquakes on the Plain exists, and that although earthquakes on the plain do not provide the clear threat to Idaho National Engineering Laboratory that earthquakes on the fault systems north of the plain provide, the possibility of events up to magnitude 6 on the plain cannot be discarded.

RESPONSE

DOE assumes the commentor is referring to the ESRP. Empirical evidence does not support the commentor's assertion that a major seismic event is likely to occur in the future on the ESRP. Studies of fault scarps on the ESRP indicate that a seismic event with a moment magnitude of 5.3 is the maximum event recorded in the rocks at the surface, which range in age from 1.2 million to 2,100 years old. Thus, there is long-term geologic evidence with which to assess the magnitude of seismicity of the ESRP. The moment magnitude 5.3 estimate is conservative with respect to earthquake magnitudes observed in similar tectonic environments and the assumed instantaneous stress release. The possibility of a magnitude 6 earthquake on the ESRP was not discarded and has been considered in the seismic hazard assessment cited in the EIS [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft)] through the use of a random ESRP earthquake, which has been assigned a moment magnitude 5.5 to 6.0. The data and methods used in this study have been independently reviewed. The random earthquake is used to analyze the effects of seismic events related to structures that do not have a surface expression.

05.05.01 (009) Seismic Characteristics

COMMENT

The commentor states that earthquake magnitudes used for seismic analysis in the EIS are too low and that more research, both onsite and in the surrounding region, is required to adequately quantify the maximum seismic shaking possible on the INEL site.

RESPONSE

The methods and data used in the *Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft) have been independently reviewed, and the analyses contained therein, including the analysis and earthquake magnitude estimates that resulted in Figure 4.6-4, are scientifically defensible. The important parameters for the seismic hazard assessment are discussed in Volume 2, section 4.6. More detailed discussions on INEL seismic hazard assessments can be found in Volume 2, Appendix F-2. Additional detail on parameter selection and the incorporation of uncertainty into the seismic hazard assessment can be found in the *Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft). In keeping with the recommendations

of CEQ, the EIS contains only enough information to support decisions required by the decisionmakers. To reduce the bulk of the document, references are cited that contain the relevant technical details.

Empirical evidence does not support the commentor's assertion that a moment magnitude 5.5 earthquake on the ESRP is too low for adequate seismic hazard analysis of ESRP earthquake sources. Studies of fault scarps on the ESRP indicate that a seismic event with a moment magnitude 5.3 is the maximum event recorded in the rocks at the surface, which range in age from 1.2 million to 2,100 years. Thus, there is long-term geologic evidence with respect to the ESRP geologic record with which to assess the magnitude of seismicity of the ESRP. The moment magnitude 5.3 estimate is mildly conservative with respect to earthquake magnitudes observed in similar tectonic environments and the assumed instantaneous stress release. Further conservatism in the seismic hazard assessment cited in the EIS [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft)] is introduced through the use of a random ESRP earthquake, which has been assigned a moment magnitude 5.5 to 6.0. The methods and data used in this study have been extensively reviewed. The random earthquake is used to analyze the effects of seismic events related to structures that do not have a surface expression. Seismic hazards and geologic analyses can be found in Volume I, sections 4.2; Volume I, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. DOE takes seismic hazards very seriously, and INEL uses independently reviewed analyses to support the implementation of DOE Orders and standards.

The accident analyses (including beyond reasonably foreseeable accidents with potential impacts greater than seismically induced accidents) indicate that the risk to the public from INEL operations would be small. Therefore, additional information on reasonably foreseeable seismic events with lesser potential impact would have no effect on the decision-making process.

No new analyses are required because, in accordance with NEPA (40 CFR 1502.22), the EIS summarizes current credible scientific information relevant to understanding the existing environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. The EIS uses the most up-to-date reviewed analyses available, and the evaluation of impacts is based on methods generally accepted by the scientific community.

See also the response to comment 05.05.01 (001).

05.05.01 (010) Seismic Characteristics**COMMENT**

The commentor expresses the opinion that the discussion of the Nevada Test Site is incomplete, because a magnitude 5.6 earthquake that occurred near Little Skull Mountain on June 28, 1992, may not have been factored into the analysis.

RESPONSE

The information in Volume 1 is an overview of the more detailed discussions contained within the Volume 1 appendices. In Volume 1, Appendix F, Part Two, section 4.6.3, the discussion on regional seismicity includes the Little Skull Mountain earthquake and the problems associated with recurrence statistics.

05.05.01 (011) Seismic Characteristics

The commentor states that the New Madrid Seismic Zone is close enough to the reactor at the University of Missouri to potentially cause damage should there be a large earthquake over magnitude 6.5, and that the seismic assessment for Missouri is based on outdated information.

RESPONSE

Research reactors are typically built to Uniform Building Code (UBC) requirements and are not required to meet Nuclear Regulatory Commission (NRC) requirements for power reactors. Because a more detailed seismic analysis is not likely to affect the assessment of impacts of the programmatic alternatives, no more seismic data are required in the EIS.

The data source for the research reactor at the University of Missouri was the document used to support the licensing of the research reactor in 1961. In 1974, a thorough evaluation of the seismic events in the vicinity was conducted for siting the Callaway commercial power reactor. The 1961 site-specific analysis is more appropriate than an analysis done specifically for another facility. The area is in UBC Zone 1, which demonstrates a low potential for seismic activity.

05.05.01 (012) Seismic Characteristics**COMMENT**

The commentor states that the seismic wave attenuation characteristics of the eastern United States are not adequately represented.

RESPONSE

The fact that strong-motion earthquakes are felt over wider regions of the eastern United States than their counterparts in the western United States is considered in DOE site-specific seismic hazard assessments for eastern United States sites. Any new DOE construction required by a decision supported by this EIS

would meet the stringent seismic hazard characterization requirements and design criteria of DOE Orders, which would include a detailed assessment of seismic attenuation characteristics.

05.05.01 (013) Seismic Characteristics

COMMENT

The commentor states that the EIS Glossary definition of seismicity is incorrect.

RESPONSE

A new definition of seismicity, which relates to the location, size, and rate of occurrence of earthquakes, has been included in the EIS Glossary.

05.05.01 (014) Seismic Characteristics

COMMENT

The commentor questions Volume 2, Figure 4.6-4 with respect to the relative magnitudes of acceleration in the seismic hazard curves describing ground motions at Idaho National Engineering Laboratory and the Savannah River Site.

RESPONSE

The reasons for a seemingly inconsistent seismic hazard at SRS with respect to INEL is, in part, due to the low attenuation characteristics of eastern bedrock, which makes sites in the eastern United States more susceptible to larger ground motions resulting from low-to-moderate magnitude earthquakes. Also, sediments of Quaternary age, which are appropriate for recording surface faulting earthquakes, are not widespread in the east. Typically, Precambrian to Mesozoic rocks are overlain only by Holocene deposits. Therefore, the number of late Quaternary surface faulting earthquakes in the eastern United States has great uncertainty, which results in conservative seismic hazard estimates. Accident analyses (including beyond reasonably foreseeable accidents with potential impacts greater than seismically induced accidents) indicate that the risk to the public from DOE operations would be small. Therefore, additional information on reasonably foreseeable seismic events with lesser potential impact would have no effect on the decision-making process. See also the response to comment 05.05.01 (003).

05.05.01 (015) Seismic Characteristics

COMMENT

The commentor maintains that the seismic hazards at the Nevada Test Site are severely understated in the EIS. The commentor states that the Nevada Test Site is in a high hazard area near major fault zones, and has experienced earthquakes triggered by other regional seismic events. Additionally, the commentor states that nuclear testing at the Nevada Test Site could have caused surface and subsurface faulting close to failure levels.

RESPONSE

The discussion of seismicity at NTS (Volume 1, section 5.2.4, and Volume 1, Appendix F, Part Two, section 4.6) will be revised to indicate that a moderate seismic potential exists at the proposed SNF management site. As stated in the 1993 Nevada Test Site Technical Site Information Report prepared by DOE, the southern Nevada region is generally characterized as an area of moderate seismic activity. NTS, including the proposed SNF management site, is located in Seismic Zone 2B, as defined in the Uniform Building Code of the International Conference of Building Officials. Zone 2B signifies areas with a moderate damage potential. Areas further to the west (western Nevada and California) are in Seismic Zones 3 and 4. Seismic Zone 3 signifies areas with a major damage potential. Seismic Zone 3 is near the western edge of NTS. Seismic Zone 4 signifies areas with a major damage potential that are near major faults. Zone 4 areas are well to the west of the site.

NTS has probably experienced earthquakes associated with regional seismic events. Some faults in the NTS region are oriented favorably for site seismicity to be influenced by other regional events. However, determining exact relationships between regional seismic events is difficult.

Nuclear testing has produced fresh fault scarps and surface cracks, generally localized in the vicinity of the nuclear tests. Recent geologic mapping of NTS shows faults that have ruptured in the Yucca Flat area, presumably as a result of testing. However, wave propagation from nuclear testing is hypothesized to relieve tectonic stress. The hypothesis regarding the triggering of local earthquakes by distant seismic events is still being evaluated and tested in the scientific community and is best regarded as a working hypothesis. Any new DOE facilities required by decisions supported by this EIS will be built consistent with the requirements of DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, which requires a rigorous, quantitative assessment and mitigation of natural phenomena hazards.

05.05.01 (016) Seismic Characteristics

COMMENT

One commentor notes that the high seismic hazard in the vicinity of Idaho National Engineering Laboratory demands that DOE commit to an ongoing program of geologic hazards studies. Commentors question how basalt flows will interact with nuclear waste and how the risks will be minimized.

RESPONSE

Seismic hazards and geologic analyses can be found in Volume 1, section 4.2; Volume 1, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. DOE takes seismic hazards very seriously, and INEL uses independently reviewed analyses to support appropriate implementation of DOE Orders and standards.

There has been an extensive effort over the past several years to upgrade DOE Orders and standards related to natural phenomena hazards. Studies have been under way for many years and are continuing at INEL to ensure that seismic hazard characterization is based on up-to-date information and state-of-the-art methods. New geologic information on seismic hazard characterization is reviewed to determine if additional geologic studies are needed.

DOE has analyzed the effects of a hypothetical lava flow event at INEL. The geologic potential of a lava flow is discussed in Volume 2, section 4.6.4, and the estimated consequences of such an event for the various alternatives are shown in Volume 2, section 5.14, Tables 5.14-3, -5, -6, -8, and -9. The methodology used for performing these analyses is documented in Volume 2, Appendix F-5 and in *Accident Assessments for the Idaho National Engineering Laboratory Facilities*. As stated in the analyses, DOE used conservative assumptions to account for the uncertainty in modeling the effects of an accident involving molten lava coming into contact with radioactive materials. The health risks to the public would be small and well below DOE's *Nuclear Safety Policy*.

DOE has considered the potential for a volcanic ashfall event at INEL in Volume 2, section 4.6.4 and Appendix F-2.1.2. As stated in section 4.6.4, potential ashfall events are not expected to impact the site. The risk associated with an ashfall event is bounded by the accidents evaluated in Volume 2, section 5.14. The impacts on the Hanford Site resulting from the Mount St. Helens eruption and ashfall were small. The *Assessment of Potential Volcanic Hazards for New Production Reactor Site at the Idaho National Engineering Laboratory* determined that hazards from volcanic events would be small for INEL. Therefore, a silicic ash-flow hazard at INEL does not represent a reasonably foreseeable significant adverse impact on the human environment.

A hypothetical accident involving the instantaneous release of the contents of a high-level waste tank represents the situation with the maximum reasonably foreseeable impact on the Snake River Plain aquifer resulting from geologic conditions at INEL and is discussed in Volume 2, section 5.14 and Appendix F-2. Under this scenario, maximum radionuclide concentrations are predicted to reach the INEL boundary 300 years after the accident and predicted concentrations will be less than EPA MCLs or DOE DCGs.

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, sets forth DOE procedures to design, assess, and operate DOE facilities so that workers, the general public, and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. This Order specifically requires facilities to be reevaluated when there is any change in design and construction standards. Existing

facilities at INEL have undergone substantial safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C of the EIS are proposed by DOE to replace or upgrade facilities at INEL. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

No new analyses are required for INEL facilities because the EIS summarizes existing credible scientific evidence relevant to understanding the existing environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. The evaluation of impacts is based on methods generally accepted by the scientific community.

See also the responses to comments 05.08.01 (014) and 05.08.01 (030).

05.05.01 (017) Seismic Characteristics

COMMENT

Commentors note that the Idaho National Engineering Laboratory is designated a Uniform Building Code Seismic Zone 2B and suggest that this area is not of low seismic potential as indicated in the EIS.

RESPONSE

The UBC seismic hazard zones range from 0 to 4, with 0 being designated the lowest seismic potential. The Snake River Plain of Eastern Idaho is currently classified as Zone 2B, based on regional voting at meetings of the professional engineering community. A small portion of the INEL site is in UBC Zone 3. No INEL facilities are located in Zone 3. The characterization of DOE sites as having low-to-moderate seismic potential is correct when taken in the context of UBC Zone 4, which includes regions of relatively intense seismic activity. In fact, the UBC accelerations are up to twice those shown on National Earthquake Hazard Reduction Program Maps for most of INEL. Likewise, United States Geological Service ground motion maps (1982 and 1990) show accelerations lower than UBC values of 0.20g. These comparisons point out that the UBC maps are extremely conservative for INEL and that the actual seismic hazard is less than shown on the UBC map.

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, requires that DOE facilities meet stringent natural phenomena hazards mitigation requirements. The UBC design basis acceleration for Zone 2B is 0.2g (the acceleration due to gravity is 1g). Most INEL moderate- or high-hazard facilities currently in use are designed to a design basis acceleration of 0.24g or higher. Low-to-moderate seismic hazard potential for INEL is further supported by the accelerations recorded at the site from the Borah Peak earthquake, which ranged from 0.078g to 0.017g. This earthquake had a moment magnitude of 6.9 (surface wave magnitude of 7.3).

Regardless of the adjectival characterization of the seismic hazard at the DOE sites as low or moderate, DOE Orders require a systematic quantification of the seismic hazard for its facilities. Quantitative probabilistic estimates of seismic hazards at other DOE sites have been used in the EIS when available. DOE has prepared, and INEL uses, an independently reviewed probabilistic seismic hazard assessment. This study estimates earthquake ground motions and how often they might occur. This study has been independently reviewed and will be incorporated into the INEL architectural and engineering standards after review by the site Natural Phenomena Committee per DOE Order 6130.1A, *General Design Criteria*. Included in this study is an estimate of ground motions at INEL facilities from a moment magnitude 7.0 earthquake occurring at the southern end of the Lemhi fault zone near the site boundary. These ground motions exceed those that would occur as a result of moment magnitude 7.0 earthquakes at the southern ends of the Lost River and Beaverhead fault zones. The 1983 Borah Peak earthquake had a moment magnitude 6.9. A study has also been performed for the Navy's Expanded Core Facility at INEL and presents detailed data and comparable results. See also the response to comment 05.05.01 (036).

Quantitative estimates of seismic hazards at INEL sites are in or referenced in section 4.6 of each of the Volume 1 appendices; Volume 1, Appendix D, section 4.2 ; and Volume 2, Appendix B, section 4.6. These estimates are more useful than adjectival or UBC characterizations for the decision-making process.

05.05.01 (018) Seismic Characteristics

COMMENT

The commentor indicates that the EIS is inadequate because no seismic hazard zone map is included. Specific reference was made to Volume 1, Appendix D, Part B.5.2 referring to seismic hazard maps as "zone maps" and that three of four waste water pits are not up to current earthquake codes. In addition, the commentor states that facilities should be reconstructed to meet current codes and that a seismic map of the Idaho National Engineering Laboratory with facility locations should be added.

RESPONSE

Seismic hazards and geologic analyses for INEL can be found in Volume 1, section 4.2; Volume 1, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. DOE takes seismic hazards very seriously, and INEL uses reviewed analyses to support the implementation of DOE Orders and standards.

Volume 1, Appendix D, Chapter 4 contains sections that describe possible seismic hazards at each Navy site, provide general background information regarding the seismicity at these sites, and provide

references for more detailed information. In addition, the current UBC seismic classification for each site is provided as a means for comparing the potential for seismic hazards among sites.

The effects of seismic failure of Naval SNF management facilities have been evaluated in this EIS. Volume I, Appendix D, Chapter 5 and Attachment F provide summary and detailed discussions of the analyses that were performed and the public health risks that might result from a seismic event at each site where Naval SNF would be stored. The seismic events considered in the analyses included both an earthquake of the magnitude used as the basis for the design of the facility (design basis earthquake) and an earthquake of a magnitude, which is more severe than that for which the facility must be designed (beyond design basis earthquake). These analyses show that the risks associated with seismic events involving Naval SNF would be small for all of the alternatives and sites considered.

The three water pits that the commentor refers to were built to standards that were the acceptable criteria at the time they were built. These water pits have been reevaluated under current seismic design standards and found to be structurally adequate. An existing facility's seismic strength and risk assessment depends on the building's specific characteristics as well as the seismic acceleration. Also, the accident analysis bounds any seismically induced failure.

The information on seismic hazards used in this EIS was obtained from the available credible data for each site. Because this information is specific to each site, it is more useful in understanding the potential seismic hazards than the classifications provided for large regions in the UBC maps. An up-to-date seismic evaluation was completed for all of the water pools at the Expanded Core Facility at INEL. The results show that they all can withstand earthquakes for both design basis events (peak ground acceleration of 0.24 g) and for beyond design basis events (peak ground acceleration of 0.4 g). The statement in Volume I, Appendix D, Attachment B that three of the water pools were designed to the seismic hazard zone classification in effect at the time they were built is correct, but does not mean that this is all they would withstand or that they do not comply with current building codes or other applicable requirements.

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, sets forth DOE policy to design, construct, and operate DOE facilities so that workers, the general public and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. This Order specifically requires facilities to be reevaluated when there is any change in design and construction standards. Existing facilities at INEL have undergone continual safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C of the EIS are proposed by DOE to replace or

upgrade facilities at the site. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

The data and methods used in the seismic hazard report referenced in Volume 2, section 4.6 of the EIS as *Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft) were extensively and independently reviewed. This report includes graphs showing rate of occurrence versus acceleration for seismic events for each major facility at INEL. This report may be incorporated into the INEL architectural and engineering standards after review by the site Natural Phenomena Committee. The previous INEL seismic analysis (*Earthquake Strong Ground Motion Estimates for the Idaho National Engineering Laboratory: Final Report*) was reviewed and incorporated into the site architectural and engineering standards after review by the site Natural Phenomena Committee in 1992 and is referenced in Volume 2, sections 4.6 and F-2 and contains facility- and location-specific seismic hazard information.

Most facilities currently in use at INEL are designed to withstand an earthquake acceleration of 0.24g or higher. All of the facilities at the site lie in UBC Zone 2B, which requires that buildings withstand earthquake accelerations of up to 0.2g. A small portion of the INEL site lies in UBC Zone 3, but there are no facilities in that portion of the site. DOE seismic design standards for moderate- and high-hazard facilities exceed the UBC seismic Zone 2B design criteria.

The EIS was prepared using existing references and currently published information. DOE prepared the EIS in a layered fashion and placed much of the technical details in appendices and supporting documentation. The references cited for Volume 1 and for Volume 2 include current information on existing environment and applicable environmental consequences for all sites evaluated. These original studies are referenced in Chapter 9 of both volumes and are available in reading rooms and information locations for review by the commentor and other interested members of the public.

Low-to-moderate seismic potential for INEL is further supported by the accelerations recorded at the site from the Borah Peak earthquake, which ranged from 0.078g to 0.017g. This earthquake had a moment magnitude of 6.9 (surface magnitude of 7.3).

The EIS summarizes all known credible scientific evidence relevant to understanding the environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. The EIS uses the most up-to-date reviewed analyses when available, and the evaluation of impacts is based on methods generally accepted by the scientific community. The analyses reported in the EIS evaluate the potential

consequences, including direct, indirect, cumulative, irreversible and irretrievable effects, and long-term productivity losses.

05.05.01 (019) Seismic Characteristics

COMMENT

The commentor states that the description of the Snake River Plain as having low seismicity is contradicted by the *Idaho National Engineering Laboratory's 1979 to 1981 Quarterly Seismic Reports*, which summarize data on earthquakes "registered on or originated on the Snake River Plain."

RESPONSE

The *INEL Quarterly Seismic Reports* cited by the commentor, available at the INEL Technical Library, show far fewer earthquakes originating on the Plain than recorded by INEL seismographs on or near the Plain. For example, the January 1982 report shows 470 earthquakes recorded by INEL seismographs on the Plain for the months October through December 1981 with magnitudes ranging from 0.4 to 3.5.

Out of 470 earthquakes, only one event, with a magnitude of 1.1, was possibly located within the Snake River Plain. These reports typically show one to two events per quarter originating in the Snake River Plain with magnitudes ranging from 0.1 to 1.3. When this data is compared with Figure 4.6-3, it is appropriate to describe the Snake River Plain as having a low-level of seismic activity with respect to the Basin and Range Province. The term "aseismic" has been avoided in the EIS to eliminate confusion.

Seismic hazards and geologic analyses for INEL can be found in Volume 1, section 4.2; Volume 1, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5.

The assertion that the Snake River Plain has a low rate of seismicity is supported by the evidence in Volume 2, Figure 4.6-3, which represents a summary of the best available data at the time the data for the EIS was compiled. The addition of subsequent seismic events in the region would not change the conclusion that the Snake River Plain has a low rate of seismicity with respect to the Basin and Range Province.

See also the response to comment 05.05.01 (007).

05.05.01 (020) Seismic Characteristics**COMMENT**

The commentor notes that the Borah Peak earthquake was a magnitude 7.3 and not a magnitude 6.9, as stated in an EIS reference.

RESPONSE

The Borah Peak earthquake, as stated in Volume 2, section 4.6.1, had a surface wave magnitude of 7.3. The moment magnitude for this earthquake was 6.9. Seismologists prefer to calculate and discuss earthquake energy in terms of moment magnitude because it is based on the physical properties of the earth and repeatable measurements (such as surface rupture length) as opposed to a surface wave magnitude, which is a one-time measure of a seismograph's response to an earthquake. Other measures of magnitude (such as Richter) cannot be determined for close, large events due to instrument saturation.

05.05.01 (022) Seismic Characteristics**COMMENT**

The commentor asserts that the EIS statement that the Hanford Site is historically of low seismicity is incorrect.

RESPONSE

The seismic hazards at the Hanford Site are described in Volume I, section 4.1, and additional detail is provided in Volume I, Appendix A, section 4.6.3. The area of the Hanford Site has historically experienced several moderate-sized earthquakes. The largest earthquakes near the Hanford Site include an approximate magnitude 4.5 event in 1918 near the town of Corfu, 35 kilometers (22 miles) north of the Hanford Site, and a second event with the same approximate magnitude and location in 1973. The largest earthquake within the Hanford Site occurred in 1971 near the location of N-Reactor on the Columbia River and had a magnitude of 3.8.

DOE Orders require rigorous quantification of seismic hazards. Seismic hazard studies have been conducted at the Hanford Site to incorporate geologic estimates for the frequency of occurrence of large earthquakes associated with geologic faults and tectonic zones, as reported in Volume 1, Appendix A. The Hanford Site is in a UBC Zone 2B (Zone 0 represents low risk and Zone 4 represents high risk), which leads to design requirements to withstand moderate earthquakes.

05.05.01 (023) Seismic Characteristics

COMMENT

The commentor states that the Idaho National Engineering Laboratory is subject to moderate seismic hazard and that other facilities at Puget Sound Naval Shipyard, the Hanford Site, Los Alamos National Laboratory, and Sandia National Laboratories have moderate-to-high seismic potential.

RESPONSE

Estimates of seismic hazards at the sites considered are in or are referenced in Volume 1, Appendices A through F, and Volume 2, Appendix F-2. Quantitative estimates are more useful than adjectival characterizations for the decision-making process. However, the comment is acknowledged and DOE has rephrased the description of seismic hazard at DOE sites.

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, requires that DOE facilities meet stringent natural phenomena hazards mitigation requirements. The UBC design basis acceleration for Zone 2B is 0.2g (the acceleration due to gravity is 1g). Most INEL moderate- or high-hazard nuclear facilities currently in use are designed or have been evaluated to a design basis acceleration of 0.24g or higher. Low-to-moderate seismic hazard potential for INEL is further supported by the accelerations recorded at INEL from the Borah Peak earthquake, which ranged from 0.078g to 0.017g. This earthquake had a moment magnitude 6.9 (surface wave magnitude 7.3).

Regardless of the adjectival characterization of the seismic hazard at DOE sites as low or moderate, DOE Orders require a systematic quantification of the seismic hazard for its facilities. Quantitative probabilistic estimates of seismic hazards at other DOE sites have been used in the EIS when available. INEL is preparing and the EIS uses a probabilistic seismic hazard assessment for facilities managed by DOE's Idaho Operations Office. This study estimates earthquake ground motions and how often they might occur. This study has been extensively and independently reviewed and will be incorporated into INEL architectural and engineering standards after review by INEL Natural Phenomena Committee per DOE Order 6130.1A, *General Design Criteria*. A similar process was used in 1992 to incorporate a scientifically reviewed seismic analysis of INEL into INEL architectural and engineering standards. Included in these studies are estimates of accelerations at INEL facilities that would result from a moment magnitude 7.0 earthquake occurring at the southern end of the Lemhi fault zone near the INEL boundary. These accelerations for INEL facilities exceed those that would occur as a result of moment magnitude 7.0 earthquakes at the southern ends of the Lost River and Beaverhead fault zones. The 1983 Borah Peak earthquake had a moment magnitude 6.9.

The Lemhi Fault and other seismic sources are discussed in Volume 1, Appendix B, section 4.6 and in Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. These accident analyses indicate that the risks to the public would be small from seismic initiated events.

Existing facilities at INEL have undergone substantial safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C are proposed by DOE to replace or upgrade facilities at INEL. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

All other major, moderate- and high-hazard facilities currently in use at INEL were built such that they can withstand accelerations from a moment magnitude 7.0 earthquake at the southern end of the Lemhi fault zone. This level of seismic safety is consistent with requirements contained in DOE Orders.

The accident analyses (including beyond reasonably foreseeable accidents with potential impacts greater than seismically induced accidents) indicate that the risk to the public from alternatives described in this EIS would be small. Therefore, additional information or characterization of reasonably foreseeable seismic events with lesser potential impact would have no effect on the decision-making process. The level of detail and characterization for seismic issues is appropriate for the programmatic decisions that will be made based on this document.

05.05.01 (024) Seismic Characteristics

COMMENT

The commentor questions why the overall level of seismic hazard calculated in the EIS for the Idaho National Engineering Laboratory is lower than the seismic hazard curves for either the Hanford Site or the Savannah River Site, and why U.S. Geological Survey data are not used.

RESPONSE

The differences perceived by the commentor result from the site-specific data and models used to assess seismic hazards. Each site used data and models judged to be appropriate to comply with DOE Orders and standards for that location. Regardless of differences in modeling approaches, steps were taken to ensure the professional and scientific integrity of these discussions and analyses for these sites. These analyses are adequate for evaluation and consideration of alternatives required for the programmatic EIS. See also the response to comment 05.05.01 (003).

DOE Order 5480.28, *Natural Phenomena Hazard Mitigation*, sets forth DOE procedures to design, assess, and operate DOE facilities so that workers, the general public, and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. INEL uses analyses to support the implementation of DOE Orders and standards.

U.S. Geological Survey (USGS) data are regional in scope and do not provide sufficient information for analysis of the programmatic alternatives discussed in this EIS.

05.05.01 (025) Seismic Characteristics

COMMENT

The commentor states that a design basis earthquake using a two-segment rupture and moment magnitude 7.0 earthquake on the Lemhi fault is not conservative enough.

RESPONSE

The Lemhi fault and other seismic sources are discussed in Volume I, Appendix B, section 4.6 and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. These accident analyses indicate that risks to the public would be small from seismic-initiated events.

Existing facilities at INEL have undergone substantial safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C of the EIS are proposed by DOE to replace or upgrade facilities at the site. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

All other major, moderate- and high-hazard facilities currently in use at INEL were built to withstand accelerations that would result from a moment magnitude 7.0 earthquake at the southern end of the Lemhi fault zone.

The probabilistic seismic hazard assessment is intended to capture the effects of the most likely type of high-intensity seismic events. Seismic events were the only identified common-cause initiators with the potential to initiate radioactive and toxic material releases to the environment. Seismically initiated releases and impacts from individual facilities were considered in the identification of the postulated accident scenarios analyzed in this EIS. These results are conservative and ensure scientific integrity.

The two-segment rupture model is consistent with observations to date on Basin and Range earthquakes in general and paleoseismic indicators near INEL in particular.

See also the response to comment 05.05.01 (001).

05.05.01 (034) Seismic Characteristics

COMMENT

The commentor states that seismicity at the Idaho National Engineering Laboratory is not mentioned in the EIS analysis.

RESPONSE

Volume 1, Appendix B, section 4.6 and Volume 2, section 4.6 discuss seismicity in relation to INEL. Volume 2, section 5.14 discusses how seismic events were used in the accident analyses. Details of the accident analyses, including seismicity assumptions, are found in *Accident Assessments for Facilities at the Idaho National Engineering Laboratory*.

05.05.01 (035) Seismic Characteristics

COMMENT

The commentor suggests that the seismic study in Volume 2, section 4.6 is incomplete because the peak ground acceleration curves for facilities other than the Idaho Chemical Processing Plant have not been included.

RESPONSE

The data and methods used in the seismic hazard report referenced in Volume 2, section 4.6 as *Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft) includes graphs showing rate of occurrence versus ground motion for seismic events for each major facility at INEL. The seismic hazard curve for the Idaho Chemical Processing Plant was included as an example of the information contained in the INEL seismic hazard analysis [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory* (Draft)]. This report may be incorporated into the INEL architectural and engineering standards after it is finished and reviewed by the INEL Natural Phenomena Committee. The previous INEL seismic analysis (*Earthquake Strong Ground Motion Estimates for the Idaho National Engineering Laboratory: Final Report*) was also extensively reviewed and incorporated into the INEL architectural and engineering standards after review by the INEL Natural Phenomena Committee in 1992. *Earthquake Strong Ground Motion Estimates for the Idaho National Engineering Laboratory: Final Report* is referenced in Volume 2, section 4.6 and Appendix F-2 and contains facility- and location-specific seismic hazard information.

05.05.01 (036) Seismic Characteristics

COMMENT

The commentor notes that the Idaho National Engineering Laboratory is in an area of seismic activity and specifically referred to the Beaverhead, Lemhi, and Lost River fault zones.

RESPONSE

Seismic hazards and geologic analyses can be found in Volume 1, section 4.6; Volume 1, Appendix B, section 4.6; and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed

in Volume 2, section 5.14 and Appendix F-5. DOE takes seismic hazards very seriously, and INEL uses independently reviewed analyses to support the enforcement and implementation of DOE Orders and standards.

DOE Order 5480.28, *National Phenomena Hazards Mitigation*, sets forth DOE procedures to design, assess, and operate DOE facilities so that workers, the general public, and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. This Order specifically requires facilities to be reevaluated when there is any change in design and construction standards. Existing facilities at INEL have undergone continual safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C of the EIS are proposed by DOE to replace or upgrade facilities at the site. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

INEL has prepared a probabilistic seismic hazard assessment for facilities at the site. This study [*Site-Specific Probabilistic Seismic Hazard Analysis for the Idaho National Engineering Laboratory (Draft)*] estimates earthquake accelerations and how often they might occur at facilities at the site. This study has been independently reviewed and will be incorporated into the INEL architectural and engineering standards after it is finalized and reviewed by the site Natural Phenomena Committee for use in conjunction with DOE Orders to design and build new facilities. Included in this study are vibratory ground motions at INEL facilities that would result from a magnitude 7.0 earthquake occurring at the southern end of the Lemhi fault zone near the site boundary. These ground motions would exceed those that would occur as a result of magnitude 7.0 earthquakes at the southern ends of the Lost River and Beaverhead fault zones.

Accident analysis results (including seismically induced accidents) indicate that the risk to the public from INEL operations would be small.

Major facilities currently in use at INEL were built to withstand accelerations that would result from a 7.0 earthquake at the southern end of the Lemhi fault zone.

05.05.01 (037) Seismic Characteristics

COMMENT

The commentor notes that the West Valley Demonstration Project facility is only about 30 kilometers from the probable causative structure for the 1929 Attica, New York, magnitude 5.8 earthquake.

RESPONSE

Volume 1, Appendix E, section 3.3.1 of the EIS has been revised to include seismic data that address the significance of seismic activity in the West Valley region.

05.05.01 (039) Seismic Characteristics

COMMENT

The commentor expresses the opinion that the geologic map in Volume 2, section 4.6 is inadequate because it does not define certain major geologic features; specifically, the Arco Volcanic Rift Zone, the Lava Ridge-Hell's Half Acre Volcanic Rift Zone, and the Axial Volcanic Zone.

RESPONSE

Rift zones at INEL, as discussed in the EIS, refer to volcanic rift zones in the region. The definition suggested by the commentor concerns continental or oceanic constructive tectonic plate margins, which, while correct, is not appropriate with respect to local conditions.

Important regional geologic features are included in Volume 2, section 4.6. A map showing the most significant volcanic rift zones in and near INEL can be found in the Engineering Design File referenced as *Water Resources Supporting Document for the INEL Environmental Restoration and Waste Management EIS (Draft)* in Volume 2, Appendix F. Many geologic maps of INEL and adjoining areas are available in the open literature. Some of this literature is cited and referenced in Volumes 1 and 2, including USGS reports and maps.

DOE added a more detailed geologic map of INEL to the EIS.

05.05.01 (040) Seismic Characteristics

COMMENT

The commentor suggests that analysis of seismic and volcanic hazards be fully reviewed by the Idaho Geologic Survey and other qualified experts.

RESPONSE

Consistent with DOE Orders and standards, INEL seismic hazards assessments and methods have been independently reviewed by many expert seismologists and geologists. These include the Senior External Events Review Group, a panel of seismic, geologic and structural engineering experts with expertise in seismic siting and design of high-hazard facilities; the Lawrence Livermore Volcanic Working Group; the Defense Nuclear Facilities Safety Board; Woodward-Clyde, Inc.; Risk Engineering, Inc.; Stanford University; University of Utah; State University of New York at Binghamton; Southern Methodist University; Idaho State University; the U.S. Geological Survey; and Boise State University. Given the extensive nature of this review, DOE believes additional review is not necessary.

See also the response to comment 05.05 (015).

05.05.01 (041) Seismic Characteristics

COMMENT

The commentor points out that the Uniform Building Code contains four Seismic Risk Zones and not three.

RESPONSE

The EIS has been revised to reflect that there are more than three Uniform Building Code zones.

5.6 Land Use

05.06 (001) Land Use

COMMENT

The commentor notes that the list of Federal outdoor recreation facilities in Volume 1, Appendix F, Part Three, section 4.2 should be expanded, and Figure 4.2-2 should be updated.

RESPONSE

The list of Federal outdoor recreation facilities identified in the text and figures of Volume 1, Appendix F, Part Three, section 4.2 is not intended to be all inclusive. However, the list of specific Federal outdoor recreation facilities has been revised to include other major facilities.

05.06 (002) Land Use

COMMENT

The commentor, referring to Volume I, Appendix F, notes that the acreage needed for proposed facilities, whether 90 or 120 acres, is unclear.

RESPONSE

Construction of SNF management facilities would require 90 acres. Under the Centralization alternative, an Expanded Core Facility would also need to be constructed; this would require an additional 30 acres. The data in Volume 1, Appendix F, Parts Two and Three, Table 3.2-1 for the Centralization alternative include the requirements of the Expanded Core Facility, which are discussed in Volume 1, Appendix D. To clarify the acreage requirements, a footnote has been added to Volume 1, Appendix F, Parts Two and Three, Table 3.2-1, and the text of Volume 1, Appendix F, section 3.2 has been revised.

05.06 (003) Land Use**COMMENT**

The commentor supports the banning of grazing on Idaho National Engineering Laboratory land to allow re-establishment of natural vegetation.

RESPONSE

Grazing policies are not within the scope of this EIS. The U.S. Department of the Interior, Bureau of Land Management is responsible for those policies.

05.06 (004) Land Use**COMMENT**

The commentor states that the EIS land-use analysis does not identify policies or the decision-making process, or provide an opportunity for public input on specific projects.

RESPONSE

The EIS identifies DOE land-use plans and policies applicable to INEL in Volume 2, section 4.2. Local land-use policies are also identified in Volume 2, section 4.2. For details of these plans and policies, the commentor is encouraged to consult the specific documents referenced in the EIS, which are available in reading rooms and information locations listed in the EIS. Also, DOE has established a Future Use Project Office, which is identifying stakeholder-preferred future use options at the 25 DOE sites by the end of 1995. Future use options are defined as a select range of preferred uses forged with consideration of stakeholder desires and DOE missions, and tempered by technical, and legal constraints and opportunities.

05.06 (005) Land Use**COMMENT**

The commentor requests an explanation of how percentages were calculated for acres disturbed for Idaho National Engineering Laboratory under each alternative.

RESPONSE

Calculations of the acreage that would be disturbed by proposed projects under each alternative were based on figures contained in individual project data sheets found in Volume 2, Appendix C. Volume 2, section 3.3 has been changed to show how the acreages disturbed were calculated.

05.06 (006) Land Use**COMMENT**

The commentor states that the EIS fails to consider impacts of the alternatives on the other current uses of Idaho National Engineering Laboratory land such as hunting, grazing, and tribal ceremonial and religious purposes.

RESPONSE

Volume 2, section 4.2 identifies the portions of INEL that are used for hunting and grazing. Volume 2, section 4.4 discusses traditional resources that are of cultural or religious importance to local Native Americans. All of these land uses are outside of the facility areas where the proposed actions of the various EIS alternatives would be implemented. Consequently, no impacts to hunting or grazing activities, nor to tribal ceremonial or religious uses, are expected. The future use of land would be coordinated with local Native Americans to assess any potential impacts of future proposed activities.

05.06 (007) Land Use**COMMENT**

The commentor requests that the EIS describe and identify the locations of specific actions, the process for making land-use decisions under the Federal Facilities Agreement and Consent Order, and that the EIS identify the role of regulatory agencies in making future land-use decisions under the Federal Facilities Agreement and Consent Order for Idaho National Engineering Laboratory.

RESPONSE

The specific location of proposed actions at INEL are identified in the project summaries. See Volume 2, Appendix C. The number of acres disturbed for each project is also provided in this portion of the EIS. The locations of projects not covered by this EIS will be identified in subsequent NEPA or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) documents.

The Federal Facilities Agreement and Consent Order (FFA/CO) process does not entail making land-use "decisions." Rather, assumptions for future land uses at INEL will be made for the purpose of determining the appropriate level of cleanup at each operable unit. In August, 1994, the DOE Idaho Operations Office issued for public comment the *Idaho National Engineering Laboratory Long-Term Land Use Future Scenarios*. This document set forth various land-use scenarios that could be assumed

for near-term and long-term activities at INEL. Public comments on the document were received, and currently are being reviewed and addressed as appropriate.

In accordance with CERCLA and the FFA/CO, the Idaho Department of Health and Welfare and EPA Region X will be part of the decision-making process on the appropriate level of cleanup at INEL. DOE requested comments on the *Idaho National Engineering Laboratory Long-Term Land Use Future Scenarios* from the State of Idaho and EPA Region X.

05.06 (008) Land Use

COMMENT

The commentor states that the EIS needs to address whether the impacts from land use at the Idaho National Engineering Laboratory are permanent or temporary.

RESPONSE

Volume 2, section 5.18 states that disposal of radioactive or hazardous wastes would cause irreversible and irretrievable (i.e., permanent) commitments of land resources under the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives. The affected acreage is also identified. Acreage used for waste treatment, storage, and disposal activities would be reserved for those purposes, and other uses of this land would be precluded during the time period addressed by the EIS.

05.06 (009) Land Use

COMMENT

The commentor states that the proposed placement of spent nuclear fuel facilities at the Nevada Test Site would be inconsistent with the DOE 1994 draft future land use plan for the Nevada Test Site, which designates that portion of Area 5 as a "nonnuclear test area."

RESPONSE

The NTS future land use plan has three area designations: underground nuclear weapons test area, proposed high-level radioactive waste repository area, and nonnuclear test area. These designations are broad, providing general guidance for future activities. The underground nuclear weapons test area has the general characteristics suitable for nuclear weapons tests, although some localized areas that are not suitable because of terrain, previous uses, local geologic features, or other reasons, may be used for other purposes. The proposed high-level radioactive waste area has been reserved to support the activities for the site characterization at Yucca Mountain, and is not available for other uses at this time. The nonnuclear test area is an area where weapons testing is not conducted and is available for other uses deemed appropriate by DOE, such as siting SNF management facilities.

05.06 (010) Land Use

COMMENT

The commentor states that DOE has summarily dismissed the alternative of restoring the Idaho National Engineering Laboratory to pristine conditions as unreasonable and that DOE is ignoring the Shoshone-Bannock Tribes' rights to hunt, fish, and gather on unoccupied lands of the U.S. Government.

Additionally, the commentor states that the presence of cultural resources on the Idaho National Engineering Laboratory should qualify the Idaho National Engineering Laboratory as a unique land resource, thereby requiring restoration of the site.

RESPONSE

Environmental restoration activities at INEL are being conducted in accordance with the FFA/CO dated December 4, 1991. Restoration activities will comply with the requirements of CERCLA. These laws do not require restoration to pristine conditions, but are designed to assure protection of human health and the environment in a cost-effective manner.

05.06 (011) Land Use

COMMENT

The commentor states that the analysis of land-use impacts is fundamentally flawed because it assumes that "there are no Native American treaty rights that would affect any future land use on the INEL site." The commentor states that the Fort Bridger Treaty expressly reserves the rights of the Shoshone-Bannock Tribes to use unoccupied lands of the U.S., and the Tribes will exercise these rights when the Idaho National Engineering Laboratory goes away or releases portions of land.

RESPONSE

The commentor is correct that the Fort Bridger Treaty of 1869 reserves certain future rights for the Shoshone-Bannock Tribes to use lands on the INEL site to the extent that those lands may sometime in the future become unoccupied. The analysis of land-use impacts in the EIS is limited to the time period and scope of the EIS. The time period for Volume 2 analysis is the 10 years from June 1, 1995, to June 1, 2005; the time period for Volume 1 analysis is 40 years, with detailed impact analysis conducted for actions occurring from June 1, 1995 to June 1, 2005. During the time periods covered by the EIS, DOE does not plan to relinquish ownership and control of the INEL site. Discussions of the Fort Bridger Treaty of 1869 in Volume 1, Appendix B and Volume 2 of the EIS have been changed to more clearly address this issue.

05.06 (012) Land Use

COMMENT

The commentor requests information be included in the EIS on the approach related to land ownership that would be used to transfer Idaho National Engineering Laboratory land to other agencies, or the private sector and DOE's and other agencies' responsibilities in the land transfer process.

RESPONSE

The lands and facilities that are evaluated under the alternatives in this EIS are not scheduled to be turned over to other government agencies or the private sector within the time considered in the EIS.

Consequently, the subject of transfer of government lands to other government agencies or to the private sector is outside the scope of this EIS.

05.06 (013) Land Use

COMMENT

The commentor objects to a land-use scenario projected by a draft DOE Idaho Operations Office document and states that Idaho National Engineering Laboratory lands should remain as wildlife habitat and should not be returned to the public for uses such as housing.

RESPONSE

This is in reference to a draft document entitled *Long-Term Land Use Future Scenarios for the Idaho National Engineering Laboratory*. The purpose of the land use scenarios document is to facilitate decisions regarding environmental restoration activities at INEL by projecting reasonable land use scenarios for the next 100 years. The current land use status, that is, Federal Government management of INEL, would not change under any of the alternatives analyzed in the EIS.

5.7 Utilities and Infrastructure

05.07 (001) Utilities and Infrastructure

COMMENT

The commentor asks whether recycling and the use of lined evaporation ponds have resulted in a relative increase or decrease in net consumptive water use at the Idaho National Engineering Laboratory.

RESPONSE

Currently, there are no major water recycling projects at INEL. Consumptive water use at INEL has probably increased since the use of lined evaporation ponds because water no longer recharges the aquifer. No studies have quantitatively evaluated the magnitude of increase since switching to lined ponds. However, it is likely that the increase is small with respect to total water use at INEL.

05.07 (002) Utilities and Infrastructure

COMMENT

The commentor questions why the electrical usage rate at the Idaho National Engineering Laboratory is expected to decline.

RESPONSE

Volume 1, Appendix B, section 4.13 describes the 1995 baseline electrical usage at INEL. Electrical usage at INEL is expected to decline when Navy prototype training at the Naval Reactors Facility is discontinued.

05.07 (003) Utilities and Infrastructure

COMMENT

The commentor notes that only sanitary waste water discharges are reported in Volume 1, Appendix B, section 4.13.4, and that additional waste water discharges from specific projects will impact the Snake River Plain aquifer. The commentor asserts that the EIS seriously underestimates the average annual waste water discharge from 1989 through 1991, based on a comparison of discharges reported in the Draft EIS (537 million liters per year) with those reported in *INEL Nonradiological Waste Management Information System* (6.8 billion liters/year). The commentor asks how this difference is accounted for and whether this will impact the analysis of impacts on the aquifer.

RESPONSE

As used in Volume 1, Appendix B, section 4.13.4, the term "waste water" refers primarily to sanitary wastes. DOE has clarified this in the EIS. As noted in Volume 1, Appendix B, section 4.8.3, water withdrawal from the aquifer by INEL is approximately 1.9×10^9 gallons per year. Of this amount, a substantial portion is discharged to the surface and is eventually returned to the aquifer. Water use impacts are presented in the EIS. Because of the small percentage of water consumed with respect to INEL water rights, and volume of water in the aquifer under INEL, there would be a small impact to water quantities in the aquifer under all alternatives considered.

05.07 (006) Utilities and Infrastructure

COMMENT

The commentor identifies a discrepancy in terminology between sections regarding the Idaho National Laboratory water rights.

RESPONSE

Volume 2, section 4.13 has been changed to refer to INEL water rights as a Federal Reserve Water Right.

05.07 (007) Utilities and Infrastructure

COMMENT

The commentor would like Volume 2, section 5.1.3 to clarify whether projected waste water quantities are limited to sewage.

RESPONSE

This discussion in section 5.13 has been modified as requested.

5.8 Water Resources

05.08 (001) Water Resources

COMMENT

The commentor states that the discussion in Volume 2 concentrates on radioactive wastes and omits nonradioactive effluents.

RESPONSE

Contaminants, including nonradioactive contaminants, are discussed in Volume 2, section 5.8. Nonradioactive contaminants at INEL were included in the analysis process performed for the EIS (*Predicted Consequences on the Snake River Plain Aquifer of Alternative Actions 1 and 2*,). The screening identified just three analytes, all radionuclides, with plumes above current EPA MCLs. These contaminants were selected for detailed analysis of potential consequences on the Snake River Plain aquifer and are the main constituents within the contaminant plumes. In addition, other contaminants, including nonradioactive contaminants, are discussed in Volume 2, section 5.8.

05.08 (002) Water Resources

COMMENT

The commentor suggests that there be more information on expected constituents and concentrations in waste streams for proposed actions at the Idaho National Engineering Laboratory in Volume 2, Appendix F of the EIS. The commentor expresses the opinion that a decision of "no impact" cannot be based on inadequately characterized waste streams or source terms.

RESPONSE

Anticipated projects have been included in the EIS to present readers with as comprehensive a range of forthcoming projects as is currently possible. These anticipated projects have been conservatively evaluated to attempt to bound reasonably foreseeable environmental impacts from such projects. NEPA review is performed on such activities when applicable, prior to initiation. At such time, accurate information on secondary waste generation would be available for an assessment of impacts on waste management. NEPA status of environmental restoration and waste management projects contemplated

for INEL is discussed in the Summary (see box titled Projects Related to Alternatives in the Volume 2 section of the Summary, and in Volume 2, Table 3.1-1.)

05.08 (003) Water Resources

COMMENT

The commentor notes that data exist that indicate other contaminants in perched water at the Radioactive Waste Management Complex, Test Reactor Area, Idaho Chemical Processing Plant, and Test Area North have been detected in perched water zones, and that these data should have been included in Volume 1, Appendix B, section 4.8.2.

RESPONSE

The EIS has been changed to address the comment by indicating the presence of other contaminants that have been identified in the perched water at INEL.

05.08 (006) Water Resources

COMMENT

The commentor states that in the Oak Ridge Reservation discussion, 914 meters (3,000 feet) from a source is inappropriately represented as being close to the source.

RESPONSE

The discussion of water resources for ORR in Volume 1, Appendix F, Part Three, section 4.8 has been revised.

05.08 (007) Water Resources

COMMENT

Commentors suggest addition of the location where Las Vegas currently gets its water and any future plans to the discussion on the Nevada Test Site in Volume I of the EIS.

RESPONSE

Water use at NTS will not impact Las Vegas water use because NTS obtains its water from aquifers in a groundwater basin that is separate from the Las Vegas groundwater basin. Additionally, Las Vegas obtains 70 to 80 percent of its water from the Colorado River. Volume I, Appendix F, Part Two has been changed to more accurately reflect where Las Vegas gets its water.

05.08 (008) Water Resources

COMMENT

A commentor states there is a need to clarify the assumption regarding the spent nuclear fuel facility's water supply from the Area 5 wells and distribution system at the Nevada Test Site. A commentor also

states that the increased use of an aquifer currently in overdraft should constitute a significant environmental effect, regardless of the user's right to that water.

RESPONSE

As indicated in Volume 1, Appendix F, Part Two, section 5.13, the water wells and pumping system in Area 5 of the NTS have sufficient capacity to meet the requirements for the proposed SNF facility. The proposed facility location is in the vicinity of the Area 5 water lines. Therefore, a tie-in to the existing site infrastructure would be adequate to supply SNF facility water.

The commentor correctly states that water rights should not be a factor in the determination of the significance of groundwater use impacts, and in fact, those water rights given to the Federal Government in the area of NTS were not considered in the impact determination made in the EIS. The information on Federal water rights was included in the EIS for information purposes only.

The discussion of groundwater quantity issues in Volume 1, Appendix F, Part Two, section 5.8 has been revised to include a more comprehensive analysis of potential impacts on groundwater quantity.

Because the estimated perennial yield of the Frenchman Flat subbasin has been exceeded for more than 30 years with no decline in static water levels, it is likely that increased water use for SNF management could be sustained. The overall impact of any groundwater withdrawal in Frenchman Flats is a decrease in the discharge in the deserts to the southwest of NTS. SNF operations would decrease this discharge by 0.04 percent of the approximated 1992 discharge; therefore, impacts to groundwater are expected to

be small from SNF operations. More detailed analysis, such as that proposed by the commentor, would be done if the NTS were chosen as a site for SNF management activities.

5.8.1 Groundwater

05.08.01 (001) Groundwater

COMMENT

Commentors state that a summary table of water used and water consumed be provided for each alternative, as well as a discussion of impacts in Volume 1, Appendix B, section 5.8.

RESPONSE

Volume 1, Appendix B, section 5.8 discusses the alternative that would represent the largest water use/consumption and provides water consumption in both gallons and cubic meters. If the alternative with the greatest projected water use is shown to have a small impact on the aquifer, then all others would likewise be small. There is additional detail in Volume 2, section 5.8.

05.08.01 (002) Groundwater**COMMENT**

The commentor states that reference should be made to the increased consumption of water at Idaho National Engineering Laboratory as a result of the alternatives analyzed.

RESPONSE

The use of groundwater by the alternatives analyzed in the EIS for INEL is discussed in detail in Volume 2, section 5.8 and Appendix C. In general, increased construction activity and new facility operations require a net increase in consumptive water use. The maximum increase in net consumptive water use under any alternative is expected to be less than 5 percent of current water use at INEL. The EIS has been changed to reflect more accurate water use estimates.

05.08.01 (003) Groundwater**COMMENT**

The commentor discusses the use of the term "aquitard" in Volume 1, Appendix F, Part Three of the EIS to describe certain geologic units on the Oak Ridge Reservation. The commentor notes that in several earlier published reports by State of Tennessee geologists, all the geologic units underlying the Oak Ridge Reservation were referred to as "aquifers" and it was stated that sufficient water supply for domestic use is usually obtained from wells at depths of 18 meters (60 feet) or less in the Conasauga Group. Some units, notably the Pumpkin Valley shale unit of the Conasauga Group, were noted to be poor aquifers, however.

RESPONSE

An aquifer is a body of rock or sediment in a formation, group of formations, or part of a formation that is saturated and sufficiently permeable to transmit economic quantities of water to wells or springs. An aquitard, on the other hand is a confining bed that will tend to retard, but does not prevent, the flow of water to or from an adjacent aquifer. It may serve as a storage unit, but will not readily yield water to wells or springs. The Geology Resources and Water Resources sections of the EIS were prepared by researching recently published material. No site-specific field study was conducted. Recent literature indicates that there are several formations beneath ORR with varying ability to store and transmit water to wells or springs. It is agreed that the Pumpkin Valley Shale could very well be referred to as a poor aquifer because it has been shown to have poor transmissivity capabilities. Recently published reports such as *Status Report: A Hydrologic Framework for the Oak Ridge Reservation*, and *Status Report on the Geology of the Oak Ridge Reservation* have all used the term "aquitard" to describe the Pumpkin Valley Shale and a number of the other geologic units beneath the ORR.

Pumpkin Valley Shale is the oldest of six formations within the Conasauga Group and is at the base of the group. No site-specific data are available to determine at what depth Pumpkin Valley Shale is encountered at the West Bear Creek Valley site. It is logical, however, to think that at depths of 18 meters (60 feet) or less on the site, the water-bearing unit most likely to be encountered would be an aquitard of the Conasauga Group. If the ORR is chosen as a site for new SNF management facilities, site-specific surface water and groundwater studies would be performed to identify and characterize the subsurface units.

The level of detail desired by the commentor for the data analysis is not appropriate for the decisions that will be based on this programmatic document, and would not provide any information that would assist decisionmakers. This broad environmental review document has been prepared in accordance with the provisions of NEPA and CEQ implementing regulations, which allow for a broad focus on issues related to the subject of the decision. Additional, more specific data, such as that proposed by the commentor, would be provided, if necessary, in further site-specific environmental documents.

Geology and water resources for ORR are discussed in the EIS in Volume 1, Appendix F, Part Three, sections 4.6 and 4.8.

05.08.01 (004) Groundwater

COMMENT

Commentors state that the EIS treats the complex fracture flow system in the elastic rocks and conduit system of carbonate rocks of the Oak Ridge Reservation simplistically, that the system is too complex to be modeled, and that the system is not well enough understood to support the broad conclusion that groundwater in the "aquitards" is essentially static or that these units are able to contain contaminants.

RESPONSE

DOE agrees that the ORR groundwater system is complex. It is difficult to characterize groundwater in highly fractured and folded complex geologic settings. However, a full and detailed examination of the complex fracture-contaminated flow processes on the ORR is beyond the scope of this EIS.

The EIS description and analysis of hydrologic conditions at ORR was developed from recently published hydrologic literature, including *Status Report: A Hydrologic Framework for the Oak Ridge Reservation*. Based on these sources, the EIS analysis of potential groundwater impacts of SNF storage at ORR did not assume that the aquitards "contain contaminants," but rather that these units are characterized by shallow, short-flow paths and that solute residence times increase sharply with depth. In the intermediate and deep intervals, estimates of residence times from carbon 14 measurements and

modeling are hundreds to tens of thousands of years as stated in *Status Report: A Hydrologic Framework for the Oak Ridge Reservation*. Volume I, Appendix F, Part Three, section 5.8.4 has been revised to more accurately present the basis for the EIS discussion of potential groundwater quality impacts.

Very little potential exists for contamination of the Knox aquifer from the operation of proposed SNF management facilities. These facilities would be constructed using technologies that include secondary containment, leak detection, and water-balance monitoring equipment. Therefore, no significant environmental consequences related to water resources are anticipated from the operation of SNF management facilities.

A detailed description of groundwater flow would require an in-depth site-specific field geology and hydrogeology study. If ORR is selected as a site for new SNF management facilities, such studies would be performed.

Geology and water resources for ORR are discussed in the EIS in Volume I, Appendix F, Part Three, sections 4.6 and 4.8.

05.08.01 (005) Groundwater

COMMENT

The commentor states that karst features at the Oak Ridge Reservation (e.g., sinkholes, large springs, caves, etc.), exist in certain geologic units within the Conasauga and Chickamauga Groups, indicating good aquifers within those units.

RESPONSE

This comment is addressed by statements included in the EIS, Volume I, Appendix F, Part Three, section 4.6. The EIS states that karst development is present to varying degrees in the carbonate rocks of the Conasauga Group, most notably in the Maynardville Limestone, part of the Knox aquifer. However, it also states that "Although no site-specific geologic characterization has been conducted at the West Bear Creek Valley site, it appears the proposed Spent Nuclear Fuel Management Facility is located over the lower Conasauga Group strata not normally characterized by karst development." Site-specific geologic and hydrogeologic investigations would be necessary to verify this if ORR is chosen as a site for new SNF management facilities.

05.08.01 (006) Groundwater

COMMENT

Commentors state they are concerned with the high cost to owners/operators of private and public water systems to conduct water quality testing due to the potential impact of past, present, or future waste management activities on the Snake River Plain aquifer.

RESPONSE

Independent assessments of the Snake River Plain aquifer water quality at INEL confirm DOE environmental monitoring results that indicate that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary. With improved management practices and remediation efforts planned or under way, it is likely that water quality in the Snake River Plain aquifer below the INEL will continue to improve. Therefore, there is no INEL-related cost to local water users for testing groundwater outside the INEL boundary, because independent assessments indicate that INEL-related aquifer contamination outside the INEL boundary is small with respect to EPA MCLs or DOE DCGs.

05.08.01 (008) Groundwater

COMMENT

The commentor states that the potential exists for a deeper, more active flow regime at the Oak Ridge Reservation.

The commentor states that it is erroneous to dismiss the possibility of deep contaminant transfer in groundwater at the Oak Ridge Reservation, suggesting that the reason there is little evidence for deep contaminant transfer is that there is little data on the deep aquifer.

RESPONSE

Information provided in Volume I, Appendix F, Part Three, section 4.8 was developed primarily from published hydrologic literature on the ORR including *Status Report: A Hydrologic Framework for the Oak Ridge Reservation* and recent site environmental reports. For the purpose of the EIS, such detailed information was beyond that which would be necessary to understand the effects of the alternatives. If ORR is chosen as a site for new SNF management facilities, site-specific groundwater studies would be performed.

The EIS discussion of groundwater conditions at ORR and the EIS analysis of potential hydrologic impacts, including the statement that there is little deep groundwater flow in the deep portions of the ORR aquitards, were based on information and analysis in published hydrologic literature on the ORR. (See Volume I, Appendix F, Part Three, section 4.8 and references cited there.) These sources do not

dismiss the possibility of deep flow, but state that water budget analyses and observations of shallow groundwater flow and near-surface conditions indicate that almost all groundwater flux occurs near the ground surface.

Geology and water resources for ORR are discussed in the EIS in Volume 1, Appendix F, Part Three, sections 4.6 and 4.8.

05.08.01 (009) Groundwater

COMMENT

The commentor notes that vadose zone conductivity values derived from slug tests at the Oak Ridge Reservation may be understated in the EIS.

RESPONSE

It is true that smearing of clays by the drill bit during well installations, and other effects during slug testing, could reveal conductivity values less than what actually exist in nature. The conductivity estimates quoted in the Water Resources section of the EIS were obtained from *Status Report: A Hydrologic Framework for the Oak Ridge Reservation*. This reference cites that saturated hydraulic conductivity measurements were in fact conducted using infiltration tests as well as packer tests in the vadose zone.

Geology and water resources for the Oak Ridge Reservation are discussed in the EIS in Volume 1, Appendix F, Part Three, sections 4.6 and 4.8.

05.08.01 (010) Groundwater

COMMENT

The commentor states that the discussion in Volume 1, Appendix B, section 4.8 on perching layers in the aquifer is incorrect. Perching layers are impermeable, not impervious, and so downward flows may still occur and impact the aquifer.

RESPONSE

Perching layers are relatively impermeable. While some small amount of water may percolate through the impermeable layer, the main flow is lateral until the edges of the impermeable bed are reached. Flow then continues downward. The section of the EIS cited by the commentor accurately describes the movement of water around and through these impermeable layers in the Snake River Plain aquifer.

05.08.01 (012) Groundwater

COMMENT

The commentor notes that the likely source of nitrates detected in springs that flow from the Maynardville limestone is the Conasauga Shales at the Oak Ridge Reservation. This contamination further shows the inability of the shales to keep contaminants from migrating to the Knox aquifer.

RESPONSE

Most of the Y-12 Plant is underlain by units included in the Conasauga aquitard. However, the Maynardville limestone (Knox aquifer) also underlies a portion of the Y-12 Plant. Regardless of the properties of these rock units, proposed SNF management facilities are designed to have no liquid release of waste water with hazardous chemical or radiological characteristics. These facilities would be constructed using technologies that include secondary containment, leak detection, and water-balance monitoring equipment. Therefore, no significant environmental consequences related to water resources are anticipated from the operation of SNF management facilities.

Detailed analyses of existing contaminant sources and transport pathways are beyond the scope of this EIS. If ORR is selected for new SNF management facilities, site-specific groundwater studies would be performed. The level of detail desired by the commentor for the data analysis is not appropriate for the decisions that will be made based on this programmatic document, and would not provide any information that would assist decisionmakers. This broad environmental review document has been prepared in accordance with the provisions of NEPA and CEQ implementing regulations that allow for a broad focus on issues related to the subject of the decision. More specific data, such as that proposed by the commentor, would be provided, if necessary, in further site-specific environmental documents.

Geology and water resources for ORR are discussed in Volume 1, Appendix F, Part Three, sections 4.6 and 4.8.

05.08.01 (014) Groundwater

COMMENT

Commentors discuss the porous nature of the Eastern Snake River Plain and the potential impact of past, present, or future DOE activities related to spent nuclear fuel management at the Idaho National Engineering Laboratory on water quality of the Snake River Plain aquifer.

RESPONSE

Water resources at INEL and impacts resulting from SNF alternatives are described in Volume 1, Appendix B, sections 4.8 and 5.8. There would be no significant impacts to the aquifer under operating conditions. Environmental monitoring shows that INEL operations have not contaminated the Snake

River Plain aquifer above EPA limits beyond the INEL boundaries. Liquid effluent monitoring and double containment construction would limit operational releases from a new facility to near zero. Groundwater modeling using assumptions, including scientifically defensible assumptions regarding porosity, designed to increase the potential impacts to the aquifer from past, present, and future activities described in the EIS show that groundwater quality will not be significantly impacted, because radioactive and other contaminant discharges to the soil or aquifer would not occur in concentrations above EPA MCLs or DOE DCGs. Furthermore, it is likely that overall aquifer water quality will continue to improve at INEL, regardless of the EIS alternative chosen for SNF management.

Water resources and impacts from all waste management and environmental restoration, including SNF alternatives, considered for the INEL are described in Volume 2, sections 4.8 and 5.8, respectively. Under all the alternatives considered, the possible future sources of contamination would be small compared with previous practices. This would be a result of waste management practices that include waste water discharge monitoring, as well as natural contaminant attenuation and radioactive decay for historical releases. Computer groundwater modeling using conservative parameters (discussed in Volume 2, Appendix F) indicates that existing contaminant plumes within the INEL boundary would continue to decrease at least through 2035. The modeling further indicates that overall aquifer groundwater quality would actually improve in that period and probably continue to improve after 2035.

A hypothetical accident involving the instantaneous release of the contents of a high-level waste tank due to a once-every-50,000-years seismic event represents the situation with the most potential impact on the Snake River Plain aquifer and is discussed in Volume 2, section 5.14 and Appendix F. Under this scenario, maximum radionuclide concentrations are predicted to reach the INEL boundary in concentrations less than EPA MCLs or DOE DCGs 300 years after the accident.

Independent assessments of the Snake River Plain aquifer water quality at INEL confirm DOE environmental monitoring results that indicate that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary. With improved management practices and remediation efforts planned or under way, it is likely that overall water quality in the Snake River Plain aquifer under the INEL will continue to improve.

As stated in Volume 2 Appendix F-2, the effects of porosity have been accounted for in the modeling described. The analysis shows that for all alternatives considered, impacts would be small.

05.08.01 (015) Groundwater

COMMENT

The commentor states the need for accuracy in modeling impacts of Idaho National Engineering Laboratory waste management activities on the Snake River Plain aquifer.

RESPONSE

A description of water resources and potential environmental consequences to water resources at INEL, including the Snake River Plain aquifer, is discussed in Volumes 1 and 2, sections 4.8 and 5.8. The analysis performed for the EIS integrated available data and technical information with computer modeling to evaluate contaminant transport and predict future trends in aquifer water quality. Computer modeling was completed through 2035 to add assurance to the conclusions reached in the document. Section 5.8 concludes that overall aquifer water quality would actually improve over this period. A discussion of the methodology and assumptions used for the computer modeling effort is in Volume 2, Appendix F.

05.08.01 (016) Groundwater

COMMENT

The commentor suggests that the reburial of plutonium in Pit 9 will pose a threat to the Snake River Plain aquifer.

RESPONSE

According to page 13 of the Pit 9 Demonstration Record of Decision (ROD), plutonium and other man-made radionuclides have been detected in sediments 34 meters (110 feet) below the surface of the Subsurface Disposal Area, but not in interbeds 9 meters (30 feet) or 73 meters (240 feet) beneath the surface. The presence of plutonium in the 34-meter (110-foot) sediment layer has been tentatively attributed to flooding of the Subsurface Disposal Area in 1969 from rapid thawing of local snow. Such flooding is now prevented by a 5-meter (15-foot) dike around the Subsurface Disposal Area.

Transport modeling was conducted for the less than 10 nanocuries per gram transuranic residuals that will be left in or returned to Pit 9 to evaluate potential contaminant migration to the Snake River Plain aquifer. Modeling results indicated that the Safe Drinking Water Act standard of 15 picocuries per liter for gross alpha radioactivity will not be exceeded anywhere in the Snake River Plain aquifer if a 0.6-meter (2-foot) layer of clean soil with a linear absorption coefficient of at least 500 milliliters per gram is added to the bottom of the pit and if the pit is backfilled to grade with clean soil. The *Pit Residual Risk Assessment* in the Pit 9 Administrative Record evaluated human health risks from 10 nanocuries per gram transuranic residuals left in the pit after cleanup. Modeling of radionuclide transport to the Snake River Plain aquifer indicates that no migration to the aquifer is expected within 1,000 years. Residual

contamination in Pit 9 will be reevaluated in the baseline risk assessment to be performed as part of the *Transuranic-Contaminated Pits and Trenches Operable Units 7-13 Remedial Investigation/Feasibility Study*.

05.08.01 (019) Groundwater

COMMENT

The commentor states that Volume I, Appendix B, Table 4.8-1 should include actual detection limits and background levels and asks if groundwater includes the vadose zone, perched water, and the regional aquifer.

RESPONSE

Table 4.8-1 did not include the detection limits and background values because this would unnecessarily complicate the table. The point being made by the table is that recent conditions at the site boundary are within background levels and detection limits. Detection limits and background levels are available in the references in Volume I, Appendix B, Table 4.8-1 and references in section 4.8. Groundwater, perched water, and the vadose zone are discussed separately in the EIS.

Volume I, Appendix B, Table 4.8-1 specifically refers to groundwater quality in the Snake River Plain aquifer. As discussed and defined in the EIS, locally saturated conditions above the water table result in perched water, while groundwater refers to usable quantities of water within an aquifer. Water contained in the vadose zone is referred to as vadose water. Because perched water occurs within the vadose zone, it is vadose water.

05.08.01 (020) Groundwater

COMMENT

The commentor notes that discussions in Volume I, Appendix B, section 4.8 should compare existing aquifer conditions with both Environmental Protection Agency existing and proposed water quality standards, and that proposed maximum contaminant levels are not appropriate for the discussion of water quality in Volume I, section 4.2 of the EIS.

RESPONSE

A comparison of each contaminant with existing EPA MCLs with proposed MCLs is in Volume I, Appendix B, Table 4.8-1. The summary material in Volume I has been enhanced to compare the contaminant levels, where established, with existing EPA MCLs.

For americium-241, plutonium-238, plutonium-239, and plutonium-240, comparisons have been made for gross alpha particle activity contaminant levels for drinking water.

The EIS includes comparisons with proposed EPA MCLs because the proposed standards provide a more comparative benchmark for comparison of radionuclide concentrations than do the existing standards.

05.08.01 (021) Groundwater

COMMENT

The commentor states he would like to see a single data base for Snake River Plain aquifer information and the development of a new model to analyze groundwater contaminant dispersion at the Idaho National Engineering Laboratory.

RESPONSE

Most of the Snake River Plain aquifer data collected historically at INEL is retained by the USGS. Since INEL became involved in environmental restoration, a significant quantity of additional groundwater data has been collected. Efforts have been made to integrate this data, with maintenance of a single data base within each contractor organization. With the realization that contractors would be consolidated and recognizing the advantage to both the public and INEL, the integration of data bases into a single repository is being evaluated by DOE and the new INEL contractor.

The modeling efforts conducted for the EIS used the latest information and developments available to INEL personnel. Details regarding this modeling effort are discussed in Volume 2, Appendix F-2.2. Additional efforts are under way to model contaminant transport and dispersion in support of environmental restoration activities associated with Waste Area Group 10 for the *Comprehensive Snake River Plain Aquifer Remedial Investigation/Feasibility Study*. This modeling effort has been and will continue to be reviewed by EPA, the State of Idaho, and DOE in accordance with the INEL FFA/CO.

05.08.01 (022) Groundwater

COMMENT

The commentor recommends further discussion of the extent to which contaminant migration in groundwater at the Idaho National Engineering Laboratory would differ as a result of changes in site remediation under each alternative.

RESPONSE

Remedial Action activities at INEL would not differ between the Ten-Year Plan; Minimum Treatment, Storage, and Disposal; and Maximum Treatment, Storage, and Disposal alternatives, as discussed in Volume 2, section 3.1.2. The only change in remediation activities occurs with the No Action alternative. Only ongoing remediation efforts would be continued under the No Action alternative. Impacts associated with this alternative have been analyzed and are discussed in the EIS.

The differences in groundwater contamination are minimal for each of the alternatives. Groundwater modeling conducted for this EIS indicates that under all alternatives, overall groundwater quality at INEL continues to improve. Volume 2, section 5.8 and Appendix C describe groundwater remediation projects and indicate that groundwater quality is likely to improve under each of the alternatives.

05.08.01 (023) Groundwater

COMMENT

The commentor states that increased water use at the Idaho National Engineering Laboratory will result in surface subsidence and collapse.

RESPONSE

High transmissivity (ability to transmit water) and productivity (ability to produce water with little drawdown or water level decline in or near the well) of the Snake River Plain aquifer at INEL ensure that a collapse of the surface above a producing well will not occur. Historically, ground collapse due to aquifer pumping has not been observed at INEL. Any potential increase to aquifer pumping under any of the alternatives is less than a 5 percent maximum increase in current production at the INEL.

Additional discussion and references on INEL groundwater can be found in Volume 1, Appendix B, section 4.8, and Volume 2, section 4.8 and Appendix F-2.

05.08.01 (024) Groundwater

COMMENT

The commentor asks that DOE specify the degree of certainty and scientific basis for conclusions reached in Idaho National Engineering Laboratory groundwater modeling predictions.

RESPONSE

High confidence in predicting future movement of existing contaminant plumes in the aquifer is based on decades of monitoring by the USGS and others that have provided good estimates of plume scale [1 to 10 kilometers (1 to 6 miles)] contaminant transport parameters and the importance of radioactive decay (a precisely known parameter) in contaminant reduction. For example, the tritium plume as measured from frequent samples in numerous wells has been receding in recent years. The position of the strontium-90 plume relative to the INEL boundary has been relatively stationary from 1980 to 1990 due to sorption on the rock and radioactive decay. The measured iodine-129 plume movement has been slowing and the area of the plume is shrinking. Predictive modeling of future contaminant movement is an extension of these quantitatively and independently measured trends. Parameters used in predictive modeling

reproduce past contaminant plume geometries as delineated in past monitoring results. Liquid effluent discharge monitoring and control (as discussed below) ensures that there is a high degree of certainty that these trends will continue.

INEL's decreasing impact on groundwater resources is verified by the results of groundwater monitoring conducted by independent agencies such as the USGS and the State of Idaho INEL Oversight Program. These independent assessments confirm DOE environmental monitoring results that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary. Together, with improved management practices and remediation efforts planned or under way, it is likely that overall water quality in the Snake River Plain aquifer below INEL will continue to improve and that contaminant plumes (areas in the aquifer with contaminant concentrations above EPA MCLs or DOE DCGs) will continue to recede.

05.08.01 (025) Groundwater

COMMENT

Commentors discuss cleanup of the aquifer at the Idaho National Engineering Laboratory. Some commentors state that cleanup of contaminated groundwater is not addressed in the EIS and that no rationale is presented for eliminating this alternative from further consideration, and that adverse impacts will result from failure to conduct complete cleanup. In addition, a commentor states that DOE will do nothing about radioactive contamination of the Snake River Plain aquifer.

RESPONSE

Volume 2, section 3.1.2 of the EIS describes the alternatives for SNF management and waste management and environmental restoration at INEL within the 10 years covered by the EIS. All alternatives (except the No Action alternative) include the completion of all remedial investigations/feasibility studies scheduled under the INEL FFA/CO. The draft ROD for the Waste Area Group 10 Comprehensive/Snake River Aquifer Remedial Investigation/Feasibility Study, scheduled for May 2001, will make decisions regarding the level of cleanup for the Snake River Plain aquifer.

Volume 2, Appendix C describes subsurface remediation projects at INEL. The evaluation in Volume 2 bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL generally are addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process integrating the remediation requirements of CERCLA and the corrective action requirements of the Resource Conservation and Recovery Act (RCRA) and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and

schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

DOE is committed to implementing RODs that result from this process. The EIS does not address alternatives for specific remedial projects because these are inherently project-specific decisions, and because it is DOE policy to use the CERCLA process to consider the environmental impacts of CERCLA actions.

05.08.01 (027) Groundwater

COMMENT

Commentors state that measurable effects on the Snake River Plain aquifer have occurred as a result of Idaho National Engineering Laboratory activities and these effects should be discussed even if they are not in excess of any water quality standard. Additionally, one commentor notes that water quality should be compared with existing, rather than proposed, standards.

RESPONSE

Volume 1, Appendix B and Volume 2 of the EIS discuss natural water chemistry, past and current disposal practices, resulting contamination levels in groundwater on the INEL site, at the site boundary, and beyond the boundary. Contamination levels are presented even when they are below existing drinking water standards. Because contamination levels are shown to be declining, and concentrations off site have never been above levels that would prohibit any water uses, the subject was given appropriate attention. In Volume 1, Appendix B, DOE compares the water quality with both the current and the proposed standards.

05.08.01 (029) Groundwater

COMMENT

The commentor states that an explanation of the reasons that increasing subsurface moisture enhances both attenuation and migration of localized contaminants is needed.

RESPONSE

The commentor is correct, and the text has been changed to address the comment. The reference to subsurface attenuation has been deleted from the text of Volume 2, section 4.8.

05.08.01 (030) Groundwater**COMMENT**

Commentors state they are concerned that geologic conditions and past practices at the Idaho National Engineering Laboratory could contaminate the Snake River Plain aquifer.

RESPONSE

An accident scenario resulting in maximum groundwater contamination at INEL was analyzed and the results are presented in Volume 2, section 5.14 and Appendix F. The analysis was performed to determine the effects of such an accident on the Snake River Plain aquifer. The hypothetical accident involves the instant failure of a high-level waste tank due to an earthquake with a probability of occurring on the order of once every 50,000 years. For comparison, DOE and commercial reactors are designed to withstand seismic events that might occur once every 5,000 to 10,000 years.

The groundwater analysis assumed total failure of the containment and no mitigating measures to minimize flow from the waste tank into the soil immediately following the failure. This hypothetical scenario represents the situation with the most potential impact on the aquifer. Maximum radionuclide concentrations would be predicted to reach the INEL boundary 300 years after the hypothetical accident in concentrations less than EPA MCLs or DOE DCGs.

DOE is committed to operating INEL in compliance with all applicable Federal, state, and local regulations and standards pertaining to protecting surface and groundwater resources. DOE acknowledges that previous waste discharges to unlined ponds and deep wells have resulted in the introduction of contaminants to the subsurface at INEL; however, because of improved waste management practices, these discharges have been reduced or eliminated and regional groundwater quality continues to improve. In Volume 2, section 5.8.6, the water resource impacts associated with the alternative actions are summarized. The conclusions are that implementation of any of the alternatives would result in small impacts to the quality of water leaving INEL.

The protection of water resources is verified by the results of groundwater monitoring conducted by independent agencies such as the USGS and State of Idaho INEL Oversight Program. These independent assessments confirm DOE environmental monitoring results, which indicate that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary and that there are no concentrations of contaminants that would cause impacts exceeding those impacts associated with accidents analyzed in Volume 2, section 5.14. With improved management practices and remediation efforts planned or under way, it is likely that water quality in the Snake River Plain aquifer below INEL will continue to improve.

05.08.01 (031) Groundwater

COMMENT

The commentor asks what value defined the plume boundary in Volume I, Appendix B, section 4.8.

RESPONSE

The plume boundary is defined by concentrations greater than or equal to 0.5 picocuries per milliliter. The discussion in this section has been changed to incorporate this information.

05.08.01 (032) Groundwater

COMMENT

The commentor states that the EIS does not address perched water associated with injection wells at the Idaho National Engineering Laboratory.

RESPONSE

The EIS in Volume 2, section 4.8, states that the occurrence of perched water bodies at INEL is generally related to the presence of disposal ponds and other man-made surface-water features. These are the largest perched water bodies and are the ones of most concern. However, the EIS was modified to add vadose zone disposal wells to the discussion.

05.08.01 (033) Groundwater

COMMENT

The commentor suggests that the EIS incorrectly states that only tritium and nitrate in groundwater exceed Environmental Protection Agency drinking water standards at the Hanford Site. There are other contaminants that exceed EPA numeric standards or risk-based thresholds used when establishing standards.

RESPONSE

The commentor is correct. The discussion in the document has been modified to address the comment.

05.08.01 (035) Groundwater

COMMENT

The commentor suggests evidence of long subsurface flow paths beneath the Oak Ridge Reservation can be found by reviewing data from Martin Marietta Energy System's Offsite Well Monitoring Program, which has reported tritium levels in excess of background in wells south of the Oak Ridge Reservation.

RESPONSE

Adequate information is provided in Volume I, Appendix F, Part Three, section 4.8, which was developed primarily from published hydrologic literature on the ORR, including *Status Report: A Hydrologic Framework for the Oak Ridge Reservation*, and other recent site environmental reports. The

status report states that no evidence of contaminant migration along deep, long subsurface flow paths exists at ORR. Interpretation of ORR off-site groundwater monitoring results is beyond the scope of this EIS.

The commentor also suggests that elevated concentrations of tritium would not necessarily indicate subsurface transport, but might be due to atmospheric or surface water transport of tritium released from past ORR operations. Additional information on the off-site monitoring program has been added to the groundwater discussion in Volume I, Appendix F, Part Three, section 4.8.2. However, the extent and schedule of environmental monitoring at ORR and the amount of data produced by the program is outside the scope of this EIS. See also the response to comment 05.08.01 (003).

05.08.01 (037) Groundwater

COMMENT

The commentor notes that the EIS states the existence of one instance of a groundwater contaminant crossing the Oak Ridge Reservation boundary and then cites two. The commentor also seeks to clarify the references in the paragraph.

RESPONSE

Discussion of the solvent plume east of the Y-12 Plant is included in Volume 1, Appendix F, Part Two, section 4.8.2 as additional supporting evidence of the one strongly suspected instance of groundwater flow across the ORR boundary. This reference is not intended as a second instance of groundwater flow across the ORR boundary. The discussion in the document has been modified to clarify the intended meaning.

Geology and water resources for the ORR are discussed in the EIS in Volume I, Appendix F, Part Three, sections 4.6, 4.8, and 5.8.

05.08.01 (039) Groundwater

COMMENT

Comments were received concerning DOE making a decision on the proposed alternatives when information on the effect of aquifer heterogeneities on modeling to assess the extent of impacts to the Snake River Plain aquifer is not complete.

RESPONSE

The heterogeneities referred to in the comment are important locally, on the scale of 10 to 100 meters (33 to 330 feet) with respect to calculating the distribution of contaminants from a point source of contamination. Local heterogeneities in contaminant distribution are averaged out at intermediate, 100

to 1,000 meters (330 to 3,300 feet) and regional, 100 to 1,000 meters (330 to 3,300 feet) distances from the point source. Intermediate and regional scale parameters were used to calibrate flow and contaminant transport models. The model parameter values chosen were calibrated with contaminant plume distribution time and space and data from INEL. This data is equivalent to long-term tracer test data and serves as the best empirical data for intermediate and regional parameter estimation and model calibration.

INEL water resources and potential impacts resulting from the alternatives considered by the EIS are described in Volume 2, sections 4.8 and 5.8 and Appendix F. In accordance with the provisions of NEPA at 40 CFR 1502.22, the EIS summarizes all known existing credible scientific evidence relevant to understanding the existing environment, identifies reasonably foreseeable impacts, and evaluates potential consequences. Assumptions and limitations in the groundwater analysis are identified in Volume 2, Appendix F. As stated in the analyses, DOE used conservative assumptions to account for the uncertainty in modeling the effects of proposed actions on groundwater quality. Results indicate that there will be no contaminants above EPA MCLs at the INEL site boundary as a result of operations under any of the proposed alternatives.

05.08.01 (040) Groundwater

COMMENT

The commentor states that groundwater contamination should be stated in absolute terms (metric tons per year) and concentration differences from background for activities at Idaho National Engineering Laboratory, and that perched water quality data should be included in the EIS.

RESPONSE

The effects of INEL operations on the Snake River Plain aquifer within the INEL boundary are shown in terms of concentration, picocuries per liter for radionuclides, and milligrams per liter for nonradioactive contaminants. Absolute values of contaminant mass (metric tons per year, for example) are not useful for comparison with regulatory guidelines, such as the Safe Drinking Water Act, which contain water quality standards in terms of concentration. Because the concentrations of contaminants resulting from INEL operations detected in the Snake River Plain aquifer outside the INEL boundary are below EPA MCLs or DOE DCGs, regional groundwater quality is compared with background levels for those contaminants that occur naturally and detection limits for those that do not.

In accordance with the provisions of NEPA and CEQ implementing regulations at 40 CFR 1502.22, the EIS summarizes existing credible scientific evidence relevant to understanding the existing environment, identifies reasonably foreseeable impacts, and evaluates potential consequences.

The net effects of INEL operations on groundwater resources are reflected in Snake River Plain aquifer monitoring results. Snake River Plain aquifer monitoring well data from wells in the vicinity of the RWMC and other areas where contaminated perched aquifers may exist was included in the analysis that resulted in Table 4.8-1. The data indicate that no significant impacts at the INEL boundary have resulted from the RWMC or other contaminated perched aquifer releases to the Snake River Plain aquifer. Perched water is not independently discussed in this EIS because Snake River Plain aquifer water quality impacts from INEL discharges are adequately evaluated in Snake River Plain aquifer monitoring conducted by DOE and independent agencies. Evaluating additional perched water information would not be relevant to evaluating reasonably foreseeable adverse impacts. This conclusion is further supported by the results of modeling conducted for this EIS, which included analyses for the most likely initial sources for contaminated water in perched water zones (percolation ponds and injection wells) on the Snake River Plain aquifer. Furthermore, the CERCLA ROD for the perched aquifer at the Test Reactor Area indicates that no remedial action will be required because the perched water contaminants will not result in unacceptable risks or consequences to the Snake River Plain aquifer. Characterization of some contaminated perched water is proceeding under CERCLA. The regional effects of contaminated perched water on the Snake River Plain aquifer are bounded by the high-level waste tank failure scenario analyzed in the Accident Analysis section. This analysis indicates that there will be no significant impact at the INEL boundary from the failure of containment of a high-level waste tank.

The curie content, volume, and rate of release of the source term used in this analysis probably exceed source term parameters that could be reasonably used to characterize contaminated perched aquifers at the INEL. Independent groundwater monitoring results, groundwater modeling results, and improved effluent discharge control and monitoring suggest that contaminants in the Snake River Plain aquifer are likely to decrease with time. Snake River Plain aquifer monitoring results are discussed in Volume 1, Appendix B, section 4.8 and shown in Table 4.8-1. Additional detail on subsurface water monitoring and modeling can be found in Volume 2, Appendix F-2.

No discernible water quality impacts are expected, since under normal operating conditions, there will be no discharges of contaminants to the soil or directly to the aquifer above EPA MCLs. The discussion on the hypothetical release due to an accident is discussed in Volume 2, Appendix F-5 and provides potential release amounts and modeled impacts in absolute terms and bounds any impacts from normal operational releases. Additional detail for the INEL is in Volume 2, section 5.8.

05.08.01 (041) Groundwater

COMMENT

The commentor suggests that certain perched aquifer groundwater monitoring data be included in the EIS and that groundwater quality comparisons with proposed maximum concentration levels are misleading.

RESPONSE

The data on water quality are provided in Volume 2, section 4.8. Data presented in the EIS are compared with EPA MCLs, although MCLs are drinking water standards, not groundwater standards. There is no requirement to report contaminants in the Snake River Plain aquifer relative to MCLs for drinking water, although this is usually done. The EIS used proposed MCLs because, for comparison purposes, this is the best available tool for individual radionuclides not having current MCLs. Other MCLs for radionuclides are either adjusted gross alpha, or a calculated 4 millirem-per-year dose, with the exception of tritium, strontium-90, and radium-226/228, which have specific MCLs. Volume 2, section 4.8 has been revised to clarify that while the proposed MCLs may change, they are used for groundwater quality comparison purposes.

The net effects of INEL operations on groundwater resources are reflected in groundwater monitoring results presented in the EIS. Monitoring well data were included in the analysis that resulted in Table 4.8-1. These data indicate that to date no significant impacts at the INEL boundary have resulted from INEL contaminant releases to the Snake River Plain aquifer. Independent groundwater monitoring results suggest that contaminants in the Snake River Plain aquifer are likely to decrease with time. These results are discussed in Volume 1, Appendix B, section 4.8 and are shown in Table 4.8-1.

A description of water resources and potential environmental consequences to water resources at INEL, including the Snake River Plain aquifer, are discussed in Volumes 1 and 2, sections 4.8 and 5.8. The analysis performed for the EIS integrated available data and technical information with computer modeling to evaluate contaminant transport and predict future trends in aquifer water quality. Computer modeling using conservative assumptions was completed through 2035 to add assurance to the conclusions reached in the document. Section 5.8 concludes that overall aquifer water quality would actually improve during this period. A discussion of the methodology and assumptions used for the computer modeling effort is in Volume 2, Appendix F .

Key contaminants were selected by comparing the contaminant data with the current 40 CFR 141 and proposed EPA 1991 MCLs and contamination guidelines found in DOE Order 5400.5, *Radiation Protection of the Public and the Environment*, derived concentration guides, radionuclides only.

Contaminants with concentrations 50 percent of either of the regulatory limits were considered to be key contaminants. More detailed data on the results of groundwater monitoring at INEL are available in public reading rooms and the INEL Technical Library.

The data indicate that no significant impacts at the INEL boundary have resulted from INEL contaminant releases to the Snake River Plain aquifer. Current independent groundwater monitoring results show that contaminants in the Snake River Plain aquifer are generally decreasing with time. The large concentrations cited by the commentor, which are reported to be thousands of times above the MCLs, either cannot be found in any reference such as gross alpha at Test Area North, or apply only to perched water at Test Reactor Area. The EIS did not attempt to assess perched water, but rather concentrated on the Snake River Plain aquifer. The CERCLA ROD for Test Reactor Area indicates that no remedial action will be required, because the perched water contaminants will not result in unacceptable risks or consequences to the aquifer.

Other perched water is not independently evaluated, because Snake River Plain aquifer water quality impacts from INEL discharges are adequately evaluated in Snake River Plain aquifer monitoring conducted by DOE and independent agencies. Evaluation of additional perched water information would not be relevant to evaluating reasonably foreseeable adverse impacts. This conclusion is further supported by the results of modeling conducted for this EIS that included analyses for the most likely initial sources for contaminated water in perched water zones (percolation ponds and injection wells) on the Snake River Plain aquifer .

05.08.01 (042) Groundwater

COMMENT

The commentor states that the discussion in Volume I, Appendix B, section 4.8 on exceeding maximum contaminant levels in groundwater at Test Area North is misleading because the EIS infers that contaminants first exceeded standards at a time when the commentor says they should have been declining.

RESPONSE

The discussion in Volume I, Appendix B, section 4.8 has been changed for clarification. The EIS focused on showing recent trends in groundwater quality at INEL. Any long-term accumulation would be apparent from these trends. Contaminant concentration data were reviewed for the period 1987 to 1992. Both modeling and sampling data have indicated that Snake River Plain aquifer contamination attributable to INEL is decreasing with time.

05.08.01 (044) Groundwater

COMMENT

Comments were received asking if any radioactively contaminated water has been found outside the Idaho National Engineering Laboratory boundaries.

RESPONSE

Extremely low concentrations of iodine-129 and tritium have migrated outside the INEL site boundaries. In 1992, iodine-129 concentrations were measured in two wells south of the INEL site boundary below EPA MCLs, as follows: (a) 1.0×10^{-5} picocuries per liter in Well No. 11, located approximately 6 kilometers (4 miles) beyond the boundary, and (b) 3.0×10^{-5} picocuries per liter in Well No. 14, 13 kilometers (8 miles) beyond the boundary (Mann, L.J., U.S. Geological Survey, personal communication with A.L. Lundahl, Science Applications International Corporation). Tritium concentrations were observed much below MCLs just south of the INEL site boundary in 1985. By 1988, the tritium plume had receded to within the INEL site boundary, and its size has continued to decrease (*Hydrologic Conditions and Distribution of Selected Chemical Constituents in Water, Snake River Plain Aquifer, Idaho National Engineering Laboratory*). Cobalt-60, strontium-90, cesium-139, plutonium-238, plutonium-240/241, and americium-241 have not been detected outside the INEL site boundaries.

05.08.01 (047) Groundwater

COMMENT

The commentor notes that the geology of the Oak Ridge Reservation would result in severe health effects if a leak were to occur.

RESPONSE

A conservative analysis of the potential effects of a leak from an SNF storage facility at ORR is described in Volume I, Appendix F, section 5.8.2. The analysis found that exposures would be small.

There is very little potential for contamination of the Knox aquifer from the operation of SNF management facilities. The proposed SNF facilities are designed to have no liquid release of waste water with hazardous chemical or radiological characteristics through the use of modern technologies, including secondary containment, leak detection, and water-balance monitoring equipment.

05.08.01 (048) Groundwater

COMMENT

The commentor states concern that vadose zone contaminants and other buried waste constituents at the Idaho National Engineering Laboratory Radioactive Waste Management Complex were not included in

the EIS groundwater model and may constitute a significant source of future contamination to the Snake River Plain aquifer.

RESPONSE

Vadose zone contaminants at the INEL RWMC were not included in the groundwater model. Vadose zone contaminants and other buried waste constituents at the INEL RWMC were included in the INEL FFA/CO. Characterization of these constituents is in progress as part of ongoing or planned remedial investigations.

The net effects of INEL operations on groundwater resources are reflected in groundwater monitoring results. Snake River Plain aquifer monitoring well data from wells in the vicinity of the RWMC were included in the analysis that resulted in Table 4.8-1. These data indicate that, to date, no significant impacts to the Snake River Plain aquifer at the INEL boundary have resulted from RWMC contaminant releases to the Snake River Plain aquifer. Independent groundwater monitoring results indicate that contaminants in the Snake River Plain aquifer are likely to decrease with time. These results are discussed in Volume 1, Appendix B, section 4.8 and shown in Table 4.8-1.

Recently completed flood and erosion control construction at the RWMC will reduce the rate of transport through the unsaturated zone by minimizing surface flooding at the RWMC. This reduced rate of transport effectively increases natural contaminant attenuation processes that occur in the subsurface and decreases impacts on aquifer water quality.

It is likely that the effects of RWMC contaminants on the Snake River Plain aquifer are bounded by the hypothetical accident scenario referenced in the EIS in Volume I, Appendix B, section 5.8. The hypothetical accident, representing a reasonably foreseeable accident, includes groundwater modeling of a major contaminant release to the subsurface. The analysis indicates that the hypothetical accident would cause small impacts to the aquifer, with no contaminants above MCLs at the INEL boundary.

05.08.01 (049) Groundwater

COMMENT

The commentor requests additional information on impacts from groundwater contamination.

RESPONSE

The purpose of this EIS is to evaluate the potential environmental impacts from proposed activities. For this reason, assumptions were made to ensure that estimated doses are conservatively high and represent an upper bound of potential impacts. The EIS is not intended to substitute for the assessments required by regulations. Any facilities constructed or operated under the chosen alternative will comply with

applicable regulatory requirements. In the example cited by the commentor, further discussion of chromium concentrations in groundwater at INEL is in Volume 1, Appendix B and in the Water Quality sections of Volume 2.

Volume 2, section 5.12 discusses the potential health effects for on-site workers and the public. The analyses show that impacts would be small. The major impacts have been from past practices. The impacts are projected to decrease because of changes in facility procedures. Subsurface water quality and contaminant distribution are discussed in Volume 2, Appendix F-2.

05.08.01 (050) Groundwater

COMMENT

The commentor states the Brookhaven National Laboratory is in the Long Island Nassau-Suffolk Aquifer System, and the West Valley Demonstration Project is in the Cattaraugus Creek Aquifer System. The commentor also states that these have been designated as sole-source aquifers pursuant to the Safe Drinking Water Act and asks that the sensitivity and importance of these sole-source aquifers should be considered in the selection of the interim alternative. Specifically, that National Environmental Policy Act documentation should include a detailed assessment of the potential groundwater impacts.

RESPONSE

Volume 1, Appendix E, sections 3.1.1 and 3.3.1 have been revised to acknowledge sole-source aquifer designations for aquifers underlying these sites. More detailed aquifer characterization data for these sites will be incorporated by reference. Detailed sole-source aquifer characterization data is not required because this is a programmatic EIS. Potential impacts from alternatives considered in this EIS on water quality are expected to be small. Subsequent actions that may result from this EIS will require site- and project-specific NEPA reviews and compliance, but impacts from previous activities are not within the scope of this EIS.

05.08.01 (051) Groundwater

COMMENT

The commentor states that the discussions of groundwater occurrence, movement, use, and contamination are not consistent between all sites. Without consistent information, there is little basis for comparison. The commentor also states that consistent data probably does exist through investigations required for CERCLA and RCRA, state and Federal permitting, and engineering design studies for buildings at all sites.

RESPONSE

For the analysis of impacts at a programmatic level, the hydrological information provided in Volume I and its site-specific appendices is sufficient for purposes of the EIS. Additional NEPA reviews at the site or project level will provide more specific information as needed. While it appears that there is an inconsistency among the various sites on hydrologic information summarized in Volume I of the EIS, this is largely a reflection of the differences in water uses, availability, water sources, and water quality issues that are important at each site. The appendices do, with minor exceptions, include all pertinent information on lithology, water use, contamination, well yields, and consumption. When there is an exception, a reference for further detail is provided, and additional information from the appendices is included in Volume 1 to balance the discussion.

05.08.01 (052) Groundwater**COMMENT**

The commentor suggests that the elevated nitrate, chloride, and sulfate levels found in groundwater in the vicinity of the Idaho Chemical Processing Plant are not the result of agricultural activities, as discussed, but might be attributable to the Naval Reactors Facility.

RESPONSE

The discussion in Volume I, Appendix B, section 4.8 has been revised to state that the elevated levels of nitrates, chlorides, and sulfates are the result of the disposal well and infiltration ponds at the Idaho Chemical Processing Plant. The related sections of Volume 2 of the EIS have also been revised. There is no evidence to substantiate the suggestion that the contaminant levels at the Idaho Chemical Processing Plant are caused by the Naval Reactors Facility.

05.08.01 (053) Groundwater**COMMENT**

The commentor states that in Volume 2, Appendix F-2.2.2 of the EIS, source terms for discharge of liquids from SNF storage uses Idaho Chemical Processing Plant Building 666 as the generic example. The commentor states that the facility is not generic or typical for the Idaho National Engineering Laboratory. Rather, the Idaho Chemical Processing Plant is atypical because it is the only facility that meets current standards. The commentor also states that because the other storage facilities will remain in service for the near future and pose the greatest risk of discharge, the EIS must use one of these for the source term generic case.

RESPONSE

Volume 2, Appendix F-2.2.2 referenced by the commentor states that Idaho Chemical Processing Plant discharge and a hypothetical discharge from a generic facility were used to generate discharge data. This

bounding postulated leak scenario is greater than releases from any facilities at INEL, including the Expanded Core Facility. Results indicate that there will be no contaminants above MCLs at the site boundary resulting from a postulated operational leak.

05.08.01 (054) Groundwater

COMMENT

The commentor points out that contamination of the Dublin-Midville aquifer (a regional source of drinking water) underlying the Savannah River Site is more widespread than the text of the Draft EIS indicates. As is, the text notes that evidence of contamination has been found in only one production well. The commentor also notes that there may be an inconsistency in the discussion of contamination of the Gordon aquifer.

RESPONSE

The text in Volume I, Appendix C, section 4.8 has been revised to indicate that contaminants (i.e., trichloroethylene and tetrachloroethylene) have been detected above Primary Drinking Water Standards at another well completed in the Dublin-Midville aquifer system.

Regarding contamination of the Gordon aquifer, there are several plumes of contamination on SRS, but none has moved offsite and none is available to off-site users of this aquifer. Current SRS remediation efforts are intended to prevent off-site movement of this contaminated groundwater.

05.08.01 (055) Groundwater

COMMENT

The commentor suggests DOE sum the pumping rates for all production/potable wells on the Idaho National Engineering Laboratory to produce an estimate of maximum pumping capacity.

RESPONSE

While it is true that the capacities of all pumps could be summed to produce a maximum possible pumping rate, the likelihood of all pumps operating at one time is very small. Even during recovery from an extended power outage, it is unlikely that all pumps would be operating simultaneously; hence, the maximum pumping capacity would not be reached. Maximum pumping capacities are therefore not relevant to assessing potential impacts from pumping.

05.08.01 (056) Groundwater**COMMENT**

The commentor states that contaminants released to the subsurface from the West Bear Creek Valley location at the Oak Ridge Reservation could reach the Knox aquifer, either directly, through macropores that could rapidly transmit contaminants to areas underlain by carbonates, or indirectly, following macropores to Grassy Creek and entering the aquifer through losing reaches of the creek.

RESPONSE

Full resolution of these concerns would require detailed investigation of site conditions and groundwater pathways. If ORR were chosen as a site for new SNF management facilities, site-specific geologic and hydrologic studies would be performed. Available information provides a sufficient basis, however, for an assessment that no significant environmental consequences related to water resources would be anticipated from the operation of SNF management facilities.

As discussed in the EIS, proposed SNF management facilities are designed to have no liquid release of waste water with hazardous chemical or radiological characteristics. Facilities would also be constructed to prevent and minimize the impacts of leaks, including secondary containment, leak detection, and water-balance monitoring equipment. The potential impacts on Grassy Creek and the Clinch River of an undetected subsurface release are, however, analyzed in the EIS (see Volume 1, Appendix F, Part Three, section 5.8.2). The analysis indicates that most radiological constituents would be below drinking water standards at the point of release, and that additional substantial reductions in the concentrations of constituents would occur as a result of dilution with groundwater and the receiving body of surface water. The worst-case undetected release is estimated to constitute less than 0.0003 percent of the estimated average discharge of Grassy Creek at its confluence with the Clinch River. Any contaminants reaching the Knox aquifer via the losing reaches of Grassy Creek would undergo a similar degree of dilution, such that there would be little, if any, impact on water quality in the aquifer.

It is not likely that macropores would provide a direct connection to the Knox aquifer at the site of the proposed SNF management facility, because available information indicates that the site is over lower Conasauga Group strata that are not normally characterized by karst development or not hydraulically well-connected to the Knox aquifer. (The only Conasauga Group information included in the Knox aquifer is the uppermost formation in the group, the Maynardville Limestone). If a direct macropore connection did exist and allowed an undetected release to reach the aquifer, dilution in the stormflow zone and in the aquifer would significantly reduce the potential for impacts on water quality. See Volume 1, Appendix F, Part Three, sections 4.6 and 4.8 for further discussion of site geology and hydrology.

5.8.2 Surface Water

05.08.02 (001) Surface Water

COMMENT

The commentor states that past waste management activities have resulted in contamination of water in the Clinch River and lakes near the Oak Ridge Reservation.

RESPONSE

Natural resources and impacts associated with the SNF management alternatives at ORR are specifically discussed in Volume I, Appendix F, Part Three. Current waste management problems, past contaminant releases, and environmental restoration activities for cleanup of contaminated sites at ORR are not within the scope of this EIS. Contact public affairs personnel at ORR for information on these topics or for upcoming opportunities for public comment.

05.08.02 (002) Surface Water

COMMENT

The commentor states that the EIS did not mention storm water runoff and storm water injection at Idaho National Engineering Laboratory wells as a source of waste water.

RESPONSE

The EIS does address the use of storm water injection wells used at INEL. This discussion can be found in Volume I, Appendix B, section 4.8; Volume 2, section 4.8; and Volume 2, Appendix F-2.2. Further discussion of this subject also can be found in the *Water Resources Supporting Document for the INEL Environmental Restoration and Waste Management EIS*, a reference used for the EIS, available in reading rooms and information locations listed in the EIS.

05.08.02 (003) Surface Water

COMMENT

The commentor discusses the production of toxic materials upstream from the town of Hilton Head, and the South Carolina coast, particularly impacts to watersheds, such as the Savannah River watershed, and local and regional aquifers.

RESPONSE

Potential impacts to surface water and groundwater of the various SNF management alternatives proposed for SRS are evaluated in Volume I, Appendix C, section 5.8. Cumulative impacts to water resources are presented in Volume I, Appendix C, section 5.16.4. DOE expects the impact on water quality from implementation of any of the alternatives under consideration to be small. Each of the

alternatives would contribute to the very small releases of radionuclides that normal SRS operations discharge to the surface water through Federally permitted waste-water outfalls. In the unlikely event of an accidental release of contaminants to either the ground or directly into the subsurface, DOE does not expect any adverse impacts to surface water or drinking water aquifers under SRS.

Cleanup of groundwater resources from past waste management practices at SRS are not within the scope of this EIS. However, environmental restoration activities at DOE sites are performed in accordance with agreements negotiated with the appropriate regulatory agencies and in compliance with applicable DOE guidance and environmental regulations.

05.08.02 (004) Surface Water

COMMENT

The commentor states that Volume I, Appendix B of the EIS erroneously assumes that surface water flow at the Idaho National Engineering Laboratory over the last 8 years is indicative of what can be expected in the future.

RESPONSE

Volume I, Appendix B, section 4.8.1 has been changed to address this concern. The last 8 years include very dry years at INEL, which may not be indicative of the future. The new discussion addresses that in dry years, surface water in the Big Lost River does not usually reach the western boundary of INEL. Also, because INEL is in a closed drainage basin, surface water never flows offsite.

05.08.02 (005) Surface Water

COMMENT

The commentor expresses concern that, following the December 1991 tritium leak into the Savannah River, individuals in Savannah received a high dose of radiation from drinking the water.

RESPONSE

The maximum dose to the public resulted from individuals who drink Savannah River water. The nearest public drinking water supplies that use Savannah River water are at Port Wentworth, Georgia, and Beaufort-Jasper, South Carolina, both near Savannah, Georgia, the residence of the commentor. The maximum dose to an individual consuming 2 liters of water per day from the Port Wentworth system was 0.030 millirem. The maximum dose from the Beaufort-Jasper system was 0.0096 millirem. These values are 0.8 percent and 0.2 percent, respectively, of the EPA drinking water standard for radioactivity (4 millirem per year). The maximum dose from this release to a hypothetical individual at the U.S. Highway 301 bridge just downstream of SRS was 0.035 millirem. There are no known consumers of

Savannah River water at that location. The City of Savannah does not use the Savannah River as a source of drinking water.

The low dose received by individuals consuming water from the two public systems mentioned would not result in adverse health effects. The values are very much less than the variations in background radiation that normally results from day to day and from place to place within any city. Radioactive liquid releases from both normal and off-normal occurrences from storage of SNF at SRS are projected to be lower than that from the December 1991 tritium release.

05.08.02 (006) Surface Water

COMMENT

The commentor notes that Volume 1, Appendix B of the Draft EIS does not address local basin flooding at the Idaho National Engineering Laboratory.

RESPONSE

Local basin flooding at INEL is discussed in Volume 2, section 4.8.1 and Appendix F. Volume 1, Appendix B has been changed to discuss local basin flooding at INEL.

The DOE Idaho Operations Office recently completed constructing new flood and erosion control features at the RWMC, which will reduce the potential of localized flooding at the complex.

The INEL accident assessment summarized in Volume 2, section 5.14 considers flooding and other natural phenomena as potential initiators of facility accidents. Some potential accident initiators were selected for detailed analysis because they were considered reasonably foreseeable, and some initiators were selected for detailed analysis because of their large potential consequences. The consequences of a seismic failure of the high-level waste tanks were selected for detailed analysis over a flooding scenario because the large radioactive inventory in the high-level waste tanks could have a larger potential for consequences to water resources than a flood. The impact evaluations show that the risk to workers and the public from DOE operations would be small for all alternatives.

05.08.02 (007) Surface Water

COMMENT

The commentor notes that past waste management activities have resulted in contamination of the Snake and Columbia Rivers.

RESPONSE

No significant impacts to the Snake River and the Columbia River have resulted from INEL activities. Surface water drains internally into natural sinks at or near INEL. No surface water drains directly from INEL into the Snake River. The protection of water resources is verified by the results of groundwater monitoring conducted by independent agencies such as the USGS and State of Idaho INEL Oversight Program. These independent assessments confirm DOE environmental monitoring results, which indicate that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary. With improved management practices and remediation efforts planned or under way, it is likely that overall water quality in the Snake River Plain aquifer under the INEL will continue to improve. Therefore, no future impacts to the Snake and Columbia Rivers resulting from INEL past, present, or future operations are likely to occur.

As discussed in Volume I, Appendix A, section 4.8, tritium, iodine-129, and uranium are found in slightly higher concentrations downstream of the Hanford Site than upstream, but well below concentration guidelines established by DOE and EPA drinking water standards. Cobalt-60 and iodine-131 were not consistently found in measurable quantities during 1989 in samples of Columbia River water from Priest Rapids Dam, the 300-Area water intake, or the Richland city pumphouse. In 1989, the average annual strontium-90 concentrations were essentially the same at Priest Rapids Dam (upstream of the Hanford Site) and the Richland pumphouse.

05.08.02 (009) Surface Water**COMMENT**

Commentors express concern about existing contamination of the Clinch River and management of flow in East Fork Poplar Creek.

RESPONSE

Existing contamination of the local surface-water bodies is acknowledged in the EIS. The Clinch River and other surface waters have been affected by activities at ORR as well as by other activities upstream from ORR. Water quality in the Clinch River is routinely monitored by the Tennessee Valley Authority, the USGS, and the Tennessee Department of Environment and Conservation.

The *Oak Ridge Reservation Environmental Report for 1992* summarizes 1992 Clinch River monitoring results at the Gallaher and Kingston water treatment plants. While radionuclides exist in concentrations significantly greater than zero in the treated water for a number of radioactive analyses, maximum concentrations are not greater than the EPA primary drinking water standards for any analysis at either

plant. The environment affected by water resources at ORR is discussed in Volume I, Appendix F, Part Three, section 4.8.

The addition of Clinch River water to East Fork Poplar Creek is required by the Tennessee Department of Environment and Conservation in order to guarantee a minimum base flow as the limitations in the Y-12 Plant discharge permit are based on flow management in the creek. The purpose of the Flow Management Project is to maintain a consistent flow in the creek of 7 million gallons per day to protect the stream for its intended uses.

It is DOE policy to consider the protection of water resources in the design, construction, and operation of its facilities, and to comply with Federal, state, and local regulations and standards pertaining to protection of water resources. The proposed SNF management facilities are designed to have no liquid release of waste water with hazardous chemical technologies, which include secondary containment, and leak detection and water-balance monitoring equipment. Therefore, no significant environmental consequences related to water resources are anticipated from the operation of SNF management facilities. Impacts to water resources at ORR are discussed in Volume I, Appendix F, Part Three, section 5.8.

05.08.02 (010) Surface Water

COMMENT

The commentor notes that the EIS should include a discussion of the impacts to the ports and Puget Sound.

RESPONSE

The environmental consequences associated with storage of Naval SNF at Puget Sound Naval Shipyard are discussed in Volume I, Appendix D, section 5.1.1. The environmental consequences for the alternatives analyzed are based on estimates of the amount of SNF that would be stored at the shipyard through 2035 and current knowledge of the design features associated with SNF storage systems. The environmental consequences for foreign fuel shipments are bounded by the analyses included in this EIS. The impacts at ports for shipment of Hanford N-Reactor fuel for overseas processing are discussed in this EIS as an example for evaluation of reasonably foreseeable impacts. The review of the environmental consequences associated with the alternatives shows that impacts on the environment from these activities would be very small. Foreign research reactor (FRR) fuel shipments and their impacts to the Ports in Puget Sound are covered in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft)*.

05.08.02 (012) Surface Water

COMMENT

The commentor states that DOE would be required to apply for water rights to withdraw Columbia River water for new spent nuclear fuel storage and management activities at the Hanford Site.

RESPONSE

As discussed in Volume 1, Appendix A, section 4.8.2, DOE withdraws water from the Columbia River under DOE's Federally reserved water rights. From a programmatic impact standpoint, the maximum SNF alternative would use approximately 1 percent of the baseline of total Hanford usage (Volume 1, Appendix K). In general, new SNF facilities, if any, would use less water than existing facilities. Site-specific NEPA analysis for any new SNF storage or treatment facilities would address water usage in detail.

5.8.3 General

05.08.03 (001) General

COMMENT

The commentor asserts that the EIS assumes no surface water flow onsite and that this assumption greatly affects the evaluation of Snake River Plain aquifer recharge at Idaho National Engineering Laboratory.

RESPONSE

The EIS does not make this assumption. Volume 1, Appendix B, section 4.8.2 discusses regional and local hydrogeology, which includes summary text regarding recharge of the Snake River Plain aquifer. Infiltration along stretches of the Big Lost River, Little Lost River, and Birch Creek on the INEL site are discussed in greater detail in Volume 2, section 4.8.1 and Volume 2, Appendix F-2.2.1. The EIS cites the reference (*Streamflow Losses and Groundwater Level Changes Along the Big Lost River at the Idaho National Engineering Laboratory*) referred to by the commentor.

05.08.03 (003) General

COMMENT

The commentor states that water tables at the Idaho National Engineering Laboratory, the Hanford Site, and Nevada Test Site are contaminated with radioactive waste and that the Columbia River has been contaminated by Idaho National Engineering Laboratory and Hanford Site waste.

RESPONSE

DOE evaluated the impacts to groundwater quality of proposed actions, where appropriate. The effects of past practices have been analyzed to determine cumulative impacts. These analyses are included in Volume 2, Appendix K and Volume 1, Chapter 5, Appendices A, B, and F.

05.08.03 (004) General**COMMENT**

The commentor suggests clarification of the discussion of the depth of excavation in the vadose zone at the Nevada Test Site.

RESPONSE

As indicated in the preliminary design (*Description of a Generic Spent Nuclear Fuel Infrastructure for the Programmatic Environmental Impact Statement*), the cask loading and unloading pools in the SNF receiving and canning building are the deepest structures in the facility and are 13 meters (44 feet) deep. Allowing another 2 meters (6 feet) for secondary containment, leak detection system, and construction needs results in an estimated excavation depth of 15 meters (50 feet). As indicated in Volume 1, Appendix F, Part Two, section 4.8.2, the depth to the water table in Area 5 is 244 meters (800 feet), although perched water tables have been reported at 21 meters (70 feet) in some locations of Area 5. Given the programmatic nature of the EIS and the preliminary status of the facility design, this analysis is sufficient to demonstrate that the excavation is expected to occur within the vadose zone at NTS.

05.08.03 (005) General**COMMENT**

The commentor has concerns about seismic safety and the contamination of water resources at the Hanford Site.

RESPONSE

Volume 1, Appendix A, sections 4.8 and 5.8 discuss water resources at the Hanford Site. Geology of the site, including seismic hazards, is discussed in Volume 1, Appendix A, section 4.6. As summarized in Volume 1, section 5.2.6, the proposed alternatives for SNF management would have small impacts on water resources. Impacts of management SNF at K-basin at the Hanford Site will be analyzed in a separate EIS.

05.08.03 (006) General**COMMENT**

The commentor suggests that tougher water quality standards from the Clean Water Act should be applied in the EIS, rather than limits based on the Safe Drinking Water Act.

RESPONSE

The Clean Water Act (CWA), 33 USC Section 1251 et seq., protects surface waters by requiring that any discharge of pollutants to surface waters of the United States be controlled or prevented. Under the CWA, EPA sets nationwide, industry-by-industry effluent standards. The CWA standards are set out in industry-by-industry permits that are based on technology development. In contrast, the Safe Drinking Water Act (SDWA), 42 USC Section 300(f) et seq., ensures that water out of the tap is fit to drink. Under the SDWA, EPA is responsible for setting national standards that must be met by the persons who deliver water to the tap. The drinking water standards under the SDWA are specifically set to protect against adverse health effects to persons from the consumption of drinking water. Drinking water standards have become the key Federal reference point for prevention and cleanup decisions under both RCRA and CERCLA.

For a number of reasons, it is difficult to conduct a simple comparison of SDWA standards and CWA standards. First, for any one contaminant, CWA standards vary greatly from state to state, industry by industry. The quality of the "receiving waters" for any given facility also affects the standards that will be imposed under a CWA permit. Whether the facility analyzed in the EIS is a new facility or an existing facility also impacts the CWA permit standards. For some constituents, from some industries, in some states, with a new facility, the CWA permit standards might be more stringent than for the same constituent under the SDWA. But it is definitely not a correct generalization that CWA standards are more stringent than SDWA standards, and in fact in many instances, the opposite is true.

Because the national standards set under the SDWA are more uniformly applicable to all the DOE sites analyzed in this EIS, and more important, because the SDWA standards are consistent in that they are human-health based, rather than technology based, they were used in this EIS as a comparative reference point.

05.08.03 (007) General**COMMENT**

The commentor states that DOE's activities at Idaho National Engineering Laboratory will irreversibly and irretrievably impact water resources.

RESPONSE

Irreversible and irretrievable effects on resources are discussed in Volume 2, section 5.18. Activities at INEL have resulted in chemical and radioactive contaminant plumes in the Snake River Plain aquifer as discussed in Volume 2, section 5.8.6. Water use and liquid effluent discharges at INEL would have a minimal effect on Snake River Plain aquifer water quality and quantity.

Water resources and impacts resulting from all waste management and environmental restoration (including SNF) alternatives considered for INEL are described in Volume 2, sections 4.8 and 5.8. Under all the alternatives considered, the possible future sources of contamination would be small compared with previous practices. This would be a result of waste management practices, including waste-water discharge monitoring, as well as natural contaminant attenuation and radioactive decay for historical releases. Computer groundwater modeling using conservative parameters (discussed in Volume 2, Appendix F) indicates that existing contaminant plumes within the INEL boundary would continue to decrease at least through 2035. The modeling further indicates that overall aquifer groundwater quality would actually improve in that period and probably continue to improve after 2035.

INEL's commitment to DOE policy regarding the protection of water resources is verified by the results of groundwater monitoring conducted by independent agencies such as the USGS and State of Idaho INEL Oversight Program. These independent assessments confirm DOE environmental monitoring

results that indicate that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary. With improved management practices and remediation efforts planned or under way, it is likely that overall water quality in the Snake River Plain aquifer below the INEL will continue to improve.

Recent improvement in groundwater quality at INEL is documented in report (e.g., *Hydrologic Conditions and Distribution of Selected Chemical Constituents in Water* of the U.S. Geological Survey and *A Review of the Production, Use, and Disposal of Groundwater and the Generation, Storage, and Processing of Radioactive Liquid Waste at the Idaho Chemical Processing Plant* of the INEL Oversight Program) as referenced in the EIS. Although small irretrievable impacts to groundwater quality are possible, recent sampling results, computer modeling using mildly conservative assumptions, and improving liquid effluent discharge management ensure that impacts from current and future activities will be small and future effects of past practices have a decreasing effect on aquifer water quality.

05.08.03 (009) General

COMMENT

The commentor states that a full mass balance of water pumped from the aquifer and waste discharge volume analysis must be conducted for the entire history of the Idaho National Engineering Laboratory.

RESPONSE

The net effects of INEL operations on groundwater resources are reflected in groundwater monitoring results. Monitoring-well data were included in the analysis that resulted in Volume 1, Appendix B,

section 4.8, Table 4.8-1. This data indicates that to date no significant impacts at the INEL boundary have resulted from INEL contaminant releases to the Snake River Plain aquifer. Independent groundwater monitoring results and groundwater modeling conducted for this EIS indicate that contaminants in the Snake River Plain aquifer are likely to decrease with time. These results are discussed in Volume 1, Appendix B, section 4.8 and shown in Table 4.8-1. Additional evaluation would not be useful in evaluating reasonably foreseeable adverse impacts. Water usage is described in Volume 2, section 4.13.1.

A description of water resources and potential environmental consequences to water resources at INEL, including the Snake River Plain aquifer, are discussed in Volumes 1 and 2, sections 4.8 and 5.8. The analysis performed for the EIS integrated available data and technical information with computer modeling to evaluate contaminant transport and predict future trends in aquifer water quality. Computer modeling was completed through 2035 to add assurance to the conclusions reached in the document. Volume 2, section 5.8 concludes that overall aquifer water quality would actually improve over this period. A discussion of the methodology and assumptions used for the computer modeling effort is in Volume 2, Appendix F of the EIS.

In accordance with NEPA regulations at 40 CFR 1502.22, the EIS summarizes all known existing credible scientific evidence relevant to understanding the existing environment, identifies reasonably foreseeable impacts, and evaluates potential consequences.

A full mass balance and waste discharge volume analysis conducted for the entire history of INEL would not change the conclusions reached in the EIS.

05.08.03 (013) General

COMMENT

The commentor states that the EIS de-emphasizes impacts on water resources by categorizing water resources as an "Issue Not Discussed in Detail" and ignoring water resources in the cumulative impacts analysis. The commentor further states there is an overemphasis on water usage, rather than radiological groundwater contamination, in addressing water resources in Volume 1.

RESPONSE

In response to public comments, section 5.3.2.6 has been added to Volume 1 to address the cumulative impacts on water resources. Based on the site-specific analysis in appendices to Volume 1, section 5.2.6, addressing water resources under "Issues Not Discussed in Detail" has been enhanced to state that the radiological impact to water resources at each candidate site is small.

05.08.03 (014) General

COMMENT

The commentor states that site-specific discussions on water resources and hydrological complexities should be compared, rather than just scattered throughout six appendices.

RESPONSE

Volume I, Chapter 4 summarizes the pertinent characteristics of the affected environment at the alternative sites under consideration in the EIS. Detailed water resource and hydrological characteristics of the 10 alternative sites under consideration are in Volume I, Appendices A, B, C, D and F, and Chapter 4. Although not specifically provided in discussion or tabular form, a side-by-side comparison can be made between the information in the site-specific appendices. Due to the complexity and dissimilarity of the hydrogeologic characteristics between sites, such comparisons are subjective and depend on the specific interests of the reviewer, as well as decisionmakers.

05.08.03 (015) General

COMMENT

The commentor states that water resources, and in the context of the comment perhaps other natural resources, would be unavoidably adversely impacted because only limited remediation is proposed.

RESPONSE

The environmental restoration actions under the alternatives considered in this EIS would occur under the provisions of the CERCLA. CERCLA procedures provide for ecological risk assessment and identification of injury or potential injury to natural resources resulting from past releases of hazardous substances. The alternatives include projects for protecting the vadose zone and cleaning groundwater, and cleaning up and/or retrieving buried wastes. In keeping with DOE's Native American Policy (Memorandum EH-231: *Management of Cultural Resources at Department of Energy Facilities*, U.S. DOE, Washington, DC, February 23, 1990), DOE will consult with the Tribes during the planning and implementation of all proposed alternatives. Additionally, DOE has implemented the *Working Agreement, Policy on Native American Consultation* to ensure communication with the Shoshone-Bannock Tribes concerning the treatment of archaeological sites as mandated by the National Historic Preservation Act, Archaeological Resources Protection Act, and the protection of human remains under the Native American Graves Protection and Repatriation Act.

The prediction of unavoidable adverse impacts to groundwater was based on analyses that considered the extent of known contamination and potential effectiveness of existing and reasonably foreseeable treatment technologies. Note that the impacts will not be caused in the future but will be residual impacts from past actions and operations. CERCLA and the National Contingency Plan contain

provisions for addressing residual injury to natural resources and natural resource damage assessment. In a letter dated July 7, 1992, the DOE Idaho Operations Office notified the State of Idaho, the Shoshone-Bannock Tribes, and the U.S. Department of the Interior of potential injury to trust resources caused by past releases.

05.08.03 (016) General

COMMENT

The commentor states that the spent nuclear fuel portion of the EIS does not discuss environmental restoration at Oak Ridge Reservation, and the adverse impacts for the Y-12 Plant have not been assessed.

RESPONSE

Detailed analysis of existing contaminant sources and transport pathways are beyond the scope of this EIS. If ORR is selected for new SNF management facilities, site-specific groundwater studies would be performed.

Geology and water resources for ORR are discussed in Volume 1, Appendix F, Part Three, sections 4.6, 4.8, and 5.8.

5.9 Cumulative Impacts

05.09 (001) Cumulative Impacts

COMMENT

The commentor states the EIS does not adequately discuss the direct, indirect, or cumulative impacts of transporting spent nuclear fuel and other radioactive and hazardous materials.

RESPONSE

DOE believes the EIS and reference documents contain an adequate discussion of direct, indirect, and cumulative impacts of transporting SNF and other radioactive materials. Incident-free transportation of hazardous materials results in essentially no impacts, as discussed in Volume 1, section 5.1. A discussion of highway, railway, and barge transportation impacts and potential accident impacts is in Volume 1, section 5.1.

The cumulative impacts analyses are discussed in Volume 1, section 5.3 and Volume 2, section 5.15. Cumulative impacts of radioactive and hazardous materials transportation have been enhanced in Volume 1, section 5.3.2.

DOE conducted a comprehensive transportation cumulative impacts analysis, evaluating past, present, and future shipments of radioactive material, which include radioactive waste and SNF. The transportation cumulative impacts analysis include past transportation activities, transportation activities related to actions in this EIS, reasonably foreseeable future transportation activities, and general transportation activities.

The analyses described in Volume 1, section 5.3 and Volume 2, section 5.15 show that the potential for exposing the public to radiation hazards is low, and the overall impacts under all of the alternatives analyzed in this EIS would be small.

05.09 (002) Cumulative Impacts

COMMENT

The commentor expresses an opinion that DOE hides behind a claim of national security and is keeping information from the public, and thus prevents an accurate assessment of impacts.

RESPONSE

In recent years, DOE has released a significant amount of previously classified data and will continue to release additional information as it is declassified. Most environmental monitoring data are not classified, and significant amounts of information are available to the public, such as the annual environmental reports published for each site. Some data on DOE activities remains classified until released by the Secretary of Energy. Volumes of publicly available data were used in the preparation of this EIS, as evidenced by the list of references for each volume and the associated appendices. This EIS contains sufficient information for members of the public to interpret and evaluate impacts.

05.09 (003) Cumulative Impacts

COMMENT

The commentor is of the opinion that the EIS should evaluate the impacts and conditions anticipated many generations from now.

RESPONSE

The time periods being considered in this EIS are 40 years for the programmatic management of SNF until ultimate disposition, and 10 years for environmental management and waste management activities at INEL. The EIS evaluates reasonably foreseeable impacts associated with the proposed actions and alternatives analyzed in the EIS. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Because of the speculative nature of and uncertainties associated with projecting actions and impacts many years in the future, meaningful analysis beyond this

horizon is not possible. Whereas this EIS addresses interim actions until ultimate disposition of DOE SNF, analysis of disposition options such a geologic disposal will entail analysis of potential impacts centuries into the future. Such analysis will likely be part of a future EIS.

05.09 (004) Cumulative Impacts

COMMENT

The commentor states that the EIS does not address the environmental impacts of bringing spent nuclear fuel into Idaho.

RESPONSE

The environmental consequences of all SNF alternatives, including those that involve bringing additional SNF to INEL, are extensively discussed in Volume 1, Chapter 5. This discussion is supported by Volume 1, Appendices B and D. Volume 2, Chapters 4 and 5 further discuss environmental impacts at INEL relative to waste management and environmental restoration projects.

05.09 (005) Cumulative Impacts

COMMENT

The commentor states that specified matters are not adequately addressed as required by the National Environmental Policy Act and pursuant to Council on Environmental Quality regulations implementing the Act. The matters specified by the commentor are the different types of SNF storage, whether wet or dry; the need for potential SNF processing; cumulative impacts, similar impacts, and residual impacts, including future permanent disposal; a monitoring and safety program that provides independent oversight of storage conditions; and activities and past problems associated with SNF management.

RESPONSE

Decisions regarding wet or dry storage and processing will be based on future NEPA documentation. Cumulative impacts, including impacts from connected or similar actions are addressed in Volume 1, section 5.3 and Volume 2, section 5.15; residual impacts, assuming this term applies to adverse effects that cannot be avoided, are addressed in Volume 1, section 5.4 and Volume 2, section 5.16. DOE does provide monitoring and safety programs that are open to public review. Activities including past problems associated with SNF management are discussed throughout Volume 1 and its appendices when relevant to issues being considered.

05.09 (006) Cumulative Impacts

COMMENT

The commentor objects to DOE making a decision on the proposed alternatives when information on the extent of impacts to the Snake River Plain aquifer is not complete.

RESPONSE

The commentor refers to Volume 2, section 5.8.1. A sentence specifically refers to the status of the analysis for the impacts of a hypothetical leak to the soil from an SNF storage facility. Another sentence in Volume 2, section 5.8.1 states that based on the bounding accident scenario for impacts to the Snake River Plain aquifer discussed in Volume 2, section 5.14, the impacts to the Snake River Plain aquifer are expected to be small. These hypothetical impacts are assessed with respect to EPA MCLs and DOE DCGs. Subsequent analysis of the hypothetical SNF storage facility leak and documentation supporting groundwater modeling for the EIS have been referenced in and are available with the EIS. These analyses are consistent with conclusions stated in the EIS regarding the impacts of alternatives on water quality.

Water resources at INEL and potential impacts from the alternatives considered in the EIS are described in Volume 2, sections 4.8, 5.8, and Appendix F. In accordance with NEPA regulations at 40 CFR 1502.22, the EIS summarizes all known existing credible scientific evidence relevant to understanding the existing environment, identifies reasonably foreseeable impacts, and evaluates potential consequences. Assumptions and limitations in the groundwater analysis are identified in Volume 2, Appendix F. DOE used conservative assumptions to account for the uncertainty in modeling the effects of proposed actions on groundwater quality. Results indicate that under all the alternatives considered, there would be no contaminants above EPA MCLs at the INEL site boundary as a result of operations under any of the proposed alternatives. This would be a result of waste management practices, including waste water discharge monitoring, as well as natural contaminant attenuation and radioactive decay for historical releases.

Independent assessments of the Snake River Plain aquifer water quality at INEL confirm DOE environmental monitoring results that no contaminants in concentrations above EPA MCLs or DOE DCGs exist beyond the INEL boundary. With improved management practices and remediation efforts planned or under way, it is likely that overall water quality in the Snake River Plain aquifer below the INEL will continue to improve.

05.09 (007) Cumulative Impacts

COMMENT

The commentor asserts that the conclusions on potential impacts are flawed and that the EIS, being based on these conclusions, fails to pick the best solution.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives.

Volume 1, section 3.1 and Volume 2, section 3.4 describe DOE's preferred alternatives for programmatic SNF management, and SNF management, environmental restoration, and waste management at INEL.

05.09 (008) Cumulative Impacts

COMMENT

Many commentors state that the EIS needs to provide cumulative impact assessments for past and future activities at the Idaho National Engineering Laboratory.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts, including cumulative impacts, of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Each alternative includes the appropriate projects listed in Volume 2, including decontamination and decommissioning

Volume 2, Chapter 4 discusses the current environment at INEL, including impacts from past activities. Waste streams and emissions from INEL facilities, including characterization data and radionuclide inventories, are referenced in Volume 2, Appendix F.

Volume 2, Appendix C discusses 49 proposed projects and ongoing activities at INEL. These projects are analyzed under each of the alternatives discussed in Volume 2, section 3.1 and include reasonably foreseeable actions. These actions are subject to the outcome of negotiations with the State of Idaho under the FFA/CO.

Mitigation measures are discussed in Volume 1, section 5.7 and in Volume 2, section 5.19.

See also the response to comment 04.01 (001).

05.09 (009) Cumulative Impacts

COMMENT

The commentor states that while measuring small quantities, DOE loses sight of overall impacts to people, geology, and the national budget.

RESPONSE

DOE used the process described in regulations to ensure that the procedural requirements of NEPA were satisfied. The scope of Volume 1 of this EIS is to evaluate impacts directly related to SNF management activities across the United States. The scope of Volume 2 is to evaluate impacts directly related to SNF management, environmental restoration, and waste management activities at INEL. Larger-scale impacts from the activities associated with the proposed action, plus past, current, and other reasonably foreseeable activities are evaluated in Volume 1, section 5.3 and Volume 2, section 5.15. The EIS

includes an evaluation of the overall impacts to the human and natural environment, including people and geological resources. Costs of the alternatives are summarized in Volume 1, section 3.3.6.

05.09 (010) Cumulative Impacts

COMMENT

The commentor states that the EIS violates the National Environmental Policy Act because cumulative impacts do not include an evaluation of supply and demand; for example, the demand to store additional waste will increase.

RESPONSE

Volume 2 considers the potential consequences of a range of levels of waste and SNF management activity. Under the Maximum Treatment, Storage, and Disposal alternative, INEL would respond to significantly increased demand for management of waste and SNF. The assessment found that the impacts of this and other alternatives would be small. Cumulative impacts are included in the assessment. The EIS addresses these impacts in Volume 2, section 5.1.5.

05.09 (011) Cumulative Impacts

COMMENT

The commentor states that the EIS does not provide historical data on radioactive releases and states that National Environmental Policy Act requirements must be met in the EIS by providing a comprehensive evaluation of cumulative impacts for past and proposed activities at the Idaho National Engineering Laboratory.

RESPONSE

Waste streams and emissions from INEL facilities, including characterization data and radionuclide inventories, are included as references in Volume 2, Appendix F. Volume 2, Chapter 4 discusses the current environment at INEL, including impacts from past activities. The effects of all current operations at INEL, as discussed in Volume 2, Chapters 2 and 4, and potential effects of the proposed action and reasonably foreseeable actions not associated with the proposed action, have been evaluated in Volume 2, Chapter 5.

05.09 (012) Cumulative Impacts**COMMENT**

The commentor takes the position that all projects included in the Nevada Test Site's master plan must be considered in the cumulative impact analysis for that site.

RESPONSE

A site's master plan identifies all the projects desired to fulfill the current site mission at the maximum level without regard to budgetary constraints, priorities, or current direction. It represents the first stage of the planning process, and remains relatively static. Projects are not well defined in the master plan. In contrast, the site 5-year plan presents more thorough development and definition of those projects in the master plan that might be initiated or implemented over a 5-year period. In the 5-year plan, which is updated annually, projects are prioritized in light of the current site needs, budgetary constraints, and current policy and direction. Because the 5-year plan identifies the mission-critical projects, which are most likely to be funded and completed, it is a better indicator of planned activities at the site than the master plan. Due to the nature of the planning and budget cycle, the 5-year plan is not limited to projects that are likely to be implemented in a 5-year period, but provides a longer perspective. For these reasons the 5-year plan is considered to be an appropriate basis for identifying projects for analysis of cumulative impacts. Additional discussion of the site master plan and relation to the 5-year plan and cumulative impacts were added to Volume 1, Appendix F, Part Two.

Due to the nature of the planning and budget cycle, the 5-year plan is not limited to projects that are likely to be implemented in a 5-year period, but provides a longer perspective. For these reasons, the 5-year plan is considered to be an appropriate basis for identifying projects for analysis of cumulative impacts.

Appropriate sections of the Nevada Test Site's Master Plan Projects are summarized in Volume 1, Appendix F, Part Two.

05.09 (013) Cumulative Impacts

COMMENT

The commentor asks that the EIS address the cumulative impacts from existing waste and waste proposed over the next 40 years at the Idaho National Engineering Laboratory. In addition, the commentor asks that the EIS address the cumulative impacts from the waste at the Hanford Site and the past, present, and future waste from the Trojan Nuclear Power Plant in the Columbia River basin.

RESPONSE

Volume 1, Chapter 5 Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show the impacts of all alternatives would be small. The EIS addresses the cumulative impacts from current and future waste at INEL in Volume 2, section 5.15.

The EIS addresses the cumulative impacts from waste at the Hanford Site on the Columbia River in Volume 1, Appendix A, section 5.8. The Trojan Nuclear Power Plant has operated with an NRC license in accordance with 10 CFR 20. Operation ceased on November 9, 1992. On January 4, 1993, Portland General Electric Company announced that the plant would not restart, and the plant was defueled by January 27, 1993. The decommissioning plan was submitted to NRC on January 26, 1995, and includes spent fuel management for the Trojan plant. This is outside the scope of this EIS.

05.09 (014) Cumulative Impacts

COMMENT

In supporting the preference for the Planning Basis alternative, the commentor states that the EIS does not fully address the cumulative impacts (specifically to public health and safety) of adding new missions at many different proposed sites under the various alternatives, and states that adding new functions and duplicating them at several sites may negatively impact safety.

RESPONSE

This EIS evaluates 10 sites as reasonable siting alternatives for some level of SNF management activity. The analysis in the EIS includes environmental considerations, socioeconomic impacts, potential risks to the public from operations and reasonably foreseeable accident conditions, site-specific cumulative effects, and other environmental factors for a number of options for managing SNF. Cumulative effects, involving site-specific projects or missions that are planned to occur simultaneously with SNF management activities are discussed in Volume I, Appendices A through F. The EIS concludes that the alternative sites are environmentally suitable for management of SNF, and that risks to the public or the environment due to managing SNF at any of the 10 sites under consideration would be small even when new missions are involved.

Discussions on public health and safety can be found in Volume 1, sections 5.1 and 5.3 and the associated site-specific Appendices A through F, and in Volume 2, section 5.12.

05.09 (015) Cumulative Impacts

COMMENT

The commentor states that socioeconomic impacts are not fully addressed from a cumulative perspective; therefore, socioeconomic impacts are underestimated. The commentor suggests that, at a minimum, the point be included under "cumulative effects" that there are large socioeconomic impacts, rarely mitigated, before the project starts. Further, the commentor suggests that the EIS not assume that there will be a mitigation measure of payments in lieu of property taxes unless a specific plan is proposed. The commentor states that DOE does not pay property taxes and rarely makes payments in lieu of property taxes.

RESPONSE

The commentor is correct that DOE facilities generally do not pay local or state property taxes. However, various mechanisms exist for DOE to compensate state or local governments in the form of payments in lieu of taxes or "special burden" payments. Special burden payments help offset increases in employment and population caused by DOE facility construction and/or operation (which may put additional burdens on local services, utilities, and infrastructures). Each situation requires an independent evaluation to determine whether such payments would be authorized to the appropriate state or local jurisdiction. When assessing socioeconomic impacts, the EIS does not presume that payments in lieu of taxes would be paid to states or local communities, but only discusses the possibility of such payments as a measure to mitigate adverse impacts.

Volume 1, Appendix F, Parts Two and Three, section 5.16 discuss potential socioeconomic impacts from a cumulative perspective. These sections do not explicitly "identify large socioeconomic impacts that have occurred before the start of the proposed project." Rather, potential cumulative socioeconomic impacts are discussed in terms of "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." In this context, socioeconomic impacts from the SNF management alternatives are compared with baseline economic and demographic forecasts. The effects on these regional economic growth rates from programmatic SNF management are relatively insignificant. DOE would evaluate the need to implement measures to mitigate adverse socioeconomic impacts on a site-specific basis.

Impact avoidance measures discussed in Volume 1, section 5.7.2 of the EIS could be further evaluated on a site-specific basis when more detailed socioeconomic analyses are conducted. Although DOE does

not pay property taxes to local jurisdictions, Federal and civilian employees working at sites, or indirectly employed by sites, do. Infrastructure projects such as roads and other capital expenditures on DOE sites are financed by the Federal Government, reducing the fiscal impact on public financial resources of local jurisdictions.

05.09 (016) Cumulative Impacts

COMMENT

The commentor states that the EIS is defective because Volume 2 does not adequately address the cumulative effects of shipping, receiving, processing, and storing nuclear waste at the Idaho National Engineering Laboratory; nor does it address the cumulative impacts of past disposal and storage practices, present management actions, and reasonably foreseeable actions regarding spent nuclear fuel. The commentor expresses concerns about the cumulative impacts to the Snake River Plain aquifer underlying the Idaho National Engineering Laboratory and the level of detail in project summaries regarding cumulative impacts, and cites an example.

RESPONSE

Volumes 1 and 2 of the EIS comply with CEQ regulations regarding assessing the cumulative impacts of programmatic SNF management and SNF management, environmental restoration, and waste management at INEL, respectively. The regulations at 40 CFR 1508.7 define "cumulative impacts" as impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts of SNF management activities at INEL are discussed in Volume 1, Appendix B, section 5.16. Impacts of past practices and present conditions at INEL are described in Volume 2, Chapter 4. This serves as a baseline to add incremental cumulative impacts from proposed actions, as in Volume 2, Chapter 5. The projects described in Volume 2, Appendix C are each included in one or more of the alternatives considered in Volume 2; their combined impacts are, therefore, included in the analyses of environmental consequences in Volume 2, Chapter 5. Volume 2, section 5.15 is a comprehensive discussion of cumulative impacts (including the Snake River Plain aquifer) at INEL from past, present, and future actions of DOE and others. Topics addressed include land use, socioeconomics, cultural resources, air, water, transportation, health and safety, waste management, and ecological resources. To aid in readability, many of these impacts have also been described in tables.

The detail in Volume 2, section 5.15 is commensurate with the current state of planning, design, or development of such potential activities, including the example cited by the commentor. This detail is presented only to the extent known or reasonably foreseeable. Table 5.15-1 describes the largest projects, both onsite and offsite, that are not part of the proposed action but that have been included in

the cumulative impact analysis. Volume 2, presents nonhealth-related transportation and health-related cumulative impacts from the proposed, connected, and similar actions. See also the response to comment 05.09 (011).

See also the response to comment 05.09 (006) regarding impacts to the Snake River Plain aquifer.

05.09 (017) Cumulative Impacts

COMMENT

The commentor states that the EIS is inadequate because it fails to address the cumulative impacts of spent fuel shipments as they pertain to Idaho National Engineering Laboratory-specific proposals.

RESPONSE

The impacts due to SNF shipments are described in Volume I, Appendices D and I. Cumulative impacts from SNF shipments are described in Appendices D and I for both radiological impacts and vehicular accident impacts. Cumulative impacts due to past activities are presented for each site for the period from the start of operations at a site to 1993. Impacts through 2035 are in a range for the Centralization alternative as an upper bound, which lends conservatism to the evaluation for alternatives with less transportation. No other cumulative impacts are related to transportation; thus, this analysis is adequate.

05.09 (018) Cumulative Impacts

COMMENT

The commentor states that longshoremen, sailors, and the general public will receive significant exposure if commercial shipping lanes are used and waste casks are off loaded in Portland, Oregon, or Seattle, Washington, and trucked to the Hanford Site or Idaho National Engineering Laboratory. Children stuck in traffic in cars alongside or behind these waste shipments could receive a significant dose.

RESPONSE

DOE believes the EIS and reference documents contain an adequate discussion of direct, indirect, and cumulative impacts of transporting SNF and other radioactive materials. Incident-free transportation of hazardous materials results in essentially no impacts as discussed in Volume I, section 5.11. A discussion of highway, railway, and barge transportation impacts and potential accident impacts is in the Environmental Consequences of Key Disciplines and Offsite Transportation of SNF sections of the EIS.

The cumulative impacts analyses are discussed in Volume I, section 5.3 and Volume 2, section 5.15.

DOE conducted a comprehensive transportation cumulative impacts analysis, evaluating past, present, and future shipments of radioactive material, which include radioactive waste and SNF. The transportation cumulative impacts analysis includes past transportation activities, transportation activities related to actions in this EIS, reasonably foreseeable future transportation activities, and general transportation activities.

The analyses described in Volume 1, section 5.3 and Volume 2, section 5.15.7 show that the potential for exposing the public to radiation hazards is extremely low and the overall impacts under all of the alternatives analyzed in this EIS would be small.

05.09 (019) Cumulative Impacts

COMMENT

The commentor notes that the second sentence in Volume 2, section 5.7.4.3.2 incorrectly states that cumulative impacts from all major sources after the baseline date must be below Prevention of Significant Deterioration increment limits. Increases from minor sources also consume increment.

RESPONSE

The commentor is correct in that it should be clarified that increases from both major and minor sources after the baseline date consume increment. In fact, the increment consumption analyses that have been performed considered all applicable sources that became operational (or will become operational) after the baseline dates. The sentence has been revised to clarify that the PSD analysis considers increases from all applicable major and minor source emissions that occur after the baseline dates.

05.09 (020) Cumulative Impacts

COMMENT

The commentor states that all alternatives except the No Action alternative have a potential for further releases to the environment, which will exacerbate existing contamination by both chemical and radiological materials.

RESPONSE

The proposed SNF facilities are designed to have no liquid release of waste water with hazardous chemical or radiological characteristics through the use of modern technologies, including secondary containment, leak detection, and water-balance monitoring equipment. The analysis in the EIS includes environmental considerations, potential risks to the public from operations and reasonably foreseeable accident conditions, site-specific cumulative effects, and other environmental factors for a number of options for managing SNF. Cumulative effect, involving existing site problems and site-specific projects or missions that are planned to occur simultaneously with SNF management activities are discussed in

Volume 1, Appendix F. The EIS concludes that the alternative sites are environmentally suitable for management of SNF, and that risks to the public or the environment due to SNF management would be small, even when new missions are involved.

Discussions on public health and safety are in Volume 1, sections 5.1 and 5.3 and site-specific Appendix F.

5.10 Safety and Health Effects

05.10 (001) Safety and Health Effects

COMMENT

One commentor questions the use of legal limit radiation levels for DOE spent nuclear fuel shipping casks and measured radiation levels for U.S. Navy spent nuclear fuel shipping casks.

RESPONSE

Using legal limit radiation levels will overestimate potential impacts from DOE SNF shipments; this assumption was necessary to maintain flexibility in the specific choice of shipping casks that have been used by DOE. Even with this assumption, the risks are still small. The Navy intends to use existing shipping casks, which have been in use and for which there are measured radiation levels, if transport is required; therefore, these realistic measured data were used, and it was not necessary to make similar assumptions to bound potential impacts.

05.10 (002) Safety and Health Effects

COMMENT

The commentor states that transportation of radioactive materials involves minimal risks.

RESPONSE

The comment accurately reflects the analyses of impacts provided in Volumes 1 and 2, Chapter 5 and Volume 1, Appendices D and I. Volume 1, Appendix I summarizes the methodologies, key data, assumptions, and results of calculations for the transportation analyses. These analyses show that the risks associated with the transportation of radioactive material would be small for all alternatives considered. The conclusion that such risks would be small is borne out by past experience with such shipments.

05.10 (003) Safety and Health Effects

COMMENT

The commentor states that traffic fatality risks are somewhat higher for Naval than non-Naval shipments. The commentor states that the analysis uses the same documents for both Naval and non-Naval risk estimates and does not consider the increased non-Naval shipments.

RESPONSE

Off-site shipments of non-Naval fuel are discussed in Volume I, Appendix I, while on-site shipments of non-Naval fuel are discussed in Volume I, Appendices A, B, C, and F, for Hanford, INEL, SRS, and NTS/ORR, respectively. Off-site and on-site shipments of Naval fuel are discussed in Volume I, Appendix D.

DOE and the Navy reviewed their analyses of traffic fatality risks and did not identify any errors. All of the impacts would be small for both radiological and nonradiological risks. The different number of shipments between Naval and non-Naval SNF was considered in the analyses.

When comparing Naval and non-Naval transportation impacts, some differences other than the number of shipments are important. For example, all off-site Naval SNF shipments from shipyards are by rail, whereas all off-site test specimen shipments are by truck. The results are presented for the expected number of each of these types of shipments. DOE shipments assume that all off-site shipments are either by rail or by truck, and results are presented for both cases. Another example is that the Naval SNF shipments from Pearl Harbor have a portion of the trip on ocean transport vessels. The reference document for accident rates (*Longitudinal Review of State-Level Accident Statistics for Carriers of Interstate Freight*) lists a significantly higher nonradiological casualty rate for ocean transport than the nonradiological fatality rate listed for rail or truck transport.

05.10 (004) Safety and Health Effects

COMMENT

The commentor states that the probabilities for transportation accidents represent only the likelihood for a single shipment. The commentor states that probabilities should be determined on the basis of total annual shipments, not individual shipments.

RESPONSE

The results of the transportation accident risk assessment are cumulative risks that account for all shipments over the entire campaign (1995 to 2035). Probabilities for the maximum reasonably foreseeable transportation accidents are annual probabilities based on the total annual shipments.

05.10 (006) Safety and Health Effects

COMMENT

Commentors identify issues regarding public and worker safety and risks, and the effect on the environment due to accidents caused by extreme weather and natural disasters at the facilities.

RESPONSE

Volume 1, Chapters 3 and 5 and Appendices A through F, and Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment due to facility accidents, including those caused by extreme weather and natural disasters, such as high winds, floods, earthquakes, and tornados. The discussions include extensive evaluations and analyses of accidents. Protecting members of the general public and workers from accidents is considered by DOE in the design, location, construction, and operation of facilities. The analyses and other information in the EIS demonstrate that the risk to workers and the public from all accidents, including those caused by extreme weather or natural disasters, would be small for all of the alternatives considered.

05.10 (008) Safety and Health Effects

COMMENT

The commentor suggests that the EIS fails account for the long-term risks to the public and potential liability costs from damage scenarios under various options.

RESPONSE

Even for INEL accidents with the maximum reasonably foreseeable consequences, and with the most unfavorable meteorological conditions, no long-term risks to the public are expected. As noted in Volume 2, section 5.14, there is a potential for limited economic impacts associated with 1-year access restrictions to public lands or up to a 1-year agricultural land withdrawal for land on and immediately adjacent to INEL. Relative to potential liability costs, DOE will use the statutory indemnity contemplated by the Price-Anderson Act (42 USC 2210) to ensure ready and prompt availability of funds to compensate the public for injuries and damages resulting from a nuclear incident arising from activities conducted by indemnified DOE contractors. Compensation provided under the Act would cover nuclear incidents arising at INEL, as well as nuclear incidents arising during the transportation of material to and from the site.

Although the Price-Anderson Act is the primary means for compensating the public for damages from nuclear incidents, other remedies exist for claims not falling within the purview of the Act. For example, claims against DOE or its employees may be cognizable under the Federal Tort Claims Act, and claims

for environmental damage may fall within CERCLA. These and other laws afford any injured party mechanisms for seeking recovery for damages relating to operation of DOE facilities.

05.10 (009) Safety and Health Effects

COMMENT

The commentor suggests that DOE is not going to study ingestion of radioactive materials at the Idaho National Engineering Laboratory because contaminated food and water would be impounded. The commentor also states that DOE's assumed cleanup of accidents does not account for redistribution of particles by wind.

RESPONSE

For INEL facility accidents with the maximum reasonably foreseeable consequences and the most unfavorable meteorological conditions, some restrictions on uses of agricultural products might be implemented in accordance with established Protective Action Guides. However, this does not mean that ingestion of radioactive material has not been analyzed in the EIS. There has been much research on the potential for health effects through ingestion, as well as other pathways, and is discussed in Volume 2, Appendices A and F-4. The accidents assessments summarized in Volume 2, section 5.14 account for ingestion of radioactive materials. Resuspension of radioactive materials from the ground is included as a potential dispersion path. Wind-borne resuspension generally reduces the amount of exposure at any given distance from the point of release, but increases the area in which exposure might occur. The accident analyses generally did not take credit for mitigative measures. Nevertheless, the risks to the public and workers from all accidents analyzed in the EIS would be small.

05.10 (010) Safety and Health Effects

COMMENT

The commentor states that agency officials should be able to answer over the telephone basic questions, such as what is the longevity of radioactive spent fuel.

RESPONSE

Because agency officials are accountable for answers to technical information given over the telephone, it is unreasonable to expect all technical information to be immediately available to the official who answers the telephone. In addition, agency officials consider it prudent to check answers, especially quantitative answers, against available references or with technical experts before providing the information to the public. Whenever possible, questioners were intentionally referred to specific locations in the EIS that would answer their questions in detail, in language agreed to by a wide range of reviewers and experts.

05.10 (011) Safety and Health Effects

COMMENT

The commentor would like DOE to minimize worker and public exposure to radiation during construction, operation, and maintenance activities, using the principle of the "as low as reasonably achievable" approach.

RESPONSE

Maintaining occupational exposure to radiation and radioactive materials as low as reasonably achievable (ALARA) is an integral part of all site radiological control programs. In addition, it is DOE's policy to implement legally applicable radiation protection standards and to consider and adopt, as appropriate, recommendations by authoritative organizations. Examples of such standards and organizations include DOE Order 5400.5, *Radiation Protection of the Public and the Environment*, the National Council on Radiation Protection and Measurements, and the International Commission on Radiological Protection. See also the response to comment 05.10 (029).

05.10 (012) Safety and Health Effects

COMMENT

Commentors express the opinion that all facets of DOE's nuclear program are lethal and under the protection of bureaucrats.

RESPONSE

Hazardous material resulting from DOE's past, present, and future nuclear programs can be managed and disposed of in a safe manner. This EIS addresses the programmatic management of SNF in the interim to ultimate disposition, as well as environmental management activities at INEL over the next 10 years. It concludes that there would be no significant environmental impacts under any of the reasonable alternatives being considered for implementation. Although vulnerabilities exist, DOE has the management skill, scientific capability, and Secretarial mandate to safely manage SNF and INEL waste management and environmental restoration activities in the period covered by this EIS.

05.10 (013) Safety and Health Effects

COMMENT

The commentor notes a typographical error on the first line of the last paragraph on page 25 of the Summary.

RESPONSE

The commentor is correct that the word "facilities" should be "fatalities." DOE has corrected the error in the Summary and in Volume 1.

05.10 (014) Safety and Health Effects

COMMENT

One commentor refers to the degraded conditions in the Idaho National Engineering Laboratory structures as assessed by the Spent Fuel Working Group. This individual states that the known vulnerabilities in the storage of spent nuclear fuel lead to the risk of radioactive contamination, health problems, accidental criticalities, meltdown, and explosions. Another commentor wants DOE to "address existing storage problems that are a danger to us all."

RESPONSE

Volume 2, section 2.2 discusses the vulnerability of SNF storage at INEL. Actions to address these vulnerabilities are identified in Volume 2, section 2.2, Table 2.2-1. Because of the vulnerabilities identified in Volume 2, section 2.2, a criticality at Building 603 at the Idaho Chemical Processing Plant was considered 10 times more likely than at a modern facility such as Building 666. The consequences of such a criticality are reported in Volume 2, section 5.14. The impacts to the public from such an event would be small; impacts to workers at the scene could vary depending on the circumstances, but because of shielding by water and concrete, it is not likely that radiation exposure would result in a prompt fatality. Workers could have an increased risk of developing cancer over their lifetimes.

05.10 (015) Safety and Health Effects

COMMENT

The commentor requests clarification of the phrases "high, though not fatal, dose" and "probably not likely" in Volume 1, Chapter 5.

RESPONSE

The phrases were used in reference to an estimated worker dose of 120 rem resulting from a particular accident. A dose of 120 rem is considered to be a dose with large potential health effects (e.g., death). A population that receives short-term exposures may have individuals who die from a range of doses. The nominal dose level for death to an individual with no medical intervention is 300 to 500 rem. Some individuals could die with no medical intervention at lower doses. Thus, a short-term dose of 120 rem with no medical intervention could result in death in part of a population. A short-term dose of 120 rem would not be considered a fatal dose for typical individuals. Occupational doses to workers are usually less than 2 rems.

DOE has modified the EIS to clarify the phrases.

05.10 (016) Safety and Health Effects

COMMENT

The commentor questions what number of latent cancer fatalities per year DOE considers significant.

RESPONSE

DOE considers seriously the relationship between radiation exposure and the potential for latent cancer fatalities. Rather than a "number" of fatalities that is considered significant, DOE strives to keep the likelihood of a latent cancer fatality to a member of the public or in its work force very low. DOE's *Nuclear Safety Policy* states that "the general public be protected such that no individual bears significant additional risk to health and safety from the operation of a DOE nuclear facility above the risks to which members of the general population are exposed." Quantitatively, the goal translates to an incremental chance of a fatal cancer to a member of the public of one chance in 500,000 per year from DOE operations.

05.10 (017) Safety and Health Effects

COMMENT

The commentor suggests that consistent definitions of maximally exposed individual (MEI) and maximally exposed off-site individual (MOI) are needed. The comment cites the definitions in Volume 1, Appendix H and text in Volume 2, Appendix F-3.

RESPONSE

The definitions in Volume 1, Appendix H agree with the text in Volume 2, Appendix F-3. The text in Volume 2 contains an expanded discussion of the details involved in evaluating the maximally exposed individual, appropriate for a site-specific NEPA document. The less-detailed technical discussion given in Volume 1, Appendix H is appropriate for a programmatic analysis.

05.10 (018) Safety and Health Effects

COMMENT

The commentor suggests that duplication of facilities and missions at several sites is "not likely to enhance safety" and, in fact, can degrade the safety posture of those facilities.

RESPONSE

Volume 1, Chapter 5 summarizes the radiological and health and safety impacts associated with all the alternatives considered in this EIS, including using existing facilities and constructing new ones.

Volume 1, section 3.3.6 summarizes the cost evaluation. The health and safety of workers and the public has been considered in the evaluation of these alternatives and the identification of a preferred alternative. The information provided on radiological and health and safety impacts, including facility costs are considered adequate for evaluating and comparing the impacts of all the alternatives. Volume

1, section 3.3.6 has been revised to indicate that there are no widely accepted equivalence values between costs and radiological exposures or other health effects or environmental impacts.

See also the response to comment 04.04 (008) for management of SNF under DOE's preferred alternative.

05.10 (019) Safety and Health Effects

COMMENT

The commentor states that a sentence in the Summary on public and worker health effects implies there is some connection between spent nuclear fuel and natural background radiation. The commentor suggests deleting the sentence.

RESPONSE

The sentence states that radiation exposures also occur from natural sources. DOE considers it important for the reader to understand that natural radiation also contributes to the exposure that humans receive. The EIS has been changed to clarify the intent of the discussion.

05.10 (020) Safety and Health Effects

COMMENT

The commentor suggests that atmospheric testing be added to a discussion about underground testing releases.

RESPONSE

Volume I, section 4.4 has been changed to include discussion of atmospheric testing.

05.10 (021) Safety and Health Effects

COMMENT

Commentors suggest that adequate baseline health studies need to be conducted at all existing DOE sites, along transportation routes, and at proposed DOE sites to support risk factors used in the EIS. Some commentors request that all epidemiological studies be included in this EIS, or if they have not been performed, explain why and what other public involvement activities were conducted.

RESPONSE

In March 1990, DOE announced that it will turn over responsibility for research on long-term health effects to workers at DOE facilities and the public in surrounding communities to the U.S. Department of Health and Human Services. DOE directed that all worker health and exposure data and all data regarding releases of radioactive and toxic materials be released. Baseline health effects studies for DOE

workers and for members of the surrounding public are either under way or planned at all major DOE facilities. Results of all studies are available to the public.

Some persons have proposed performing epidemiological studies of the people living in communities in the vicinity of installations performing work associated with atomic energy. However, as demonstrated by the studies that have been attempted, such as those in Great Britain, the level of radiation exposure in the communities from man-made radionuclides is very low with respect to the variations in background radiation and other factors introduced by individual lifestyles. This, plus other variables introduced by nature and other industries in the communities, has made it impossible to perform credible studies or develop definitive conclusions. Efforts in this area are expected to continue, but after 50 years of extensive study, the standards of the International Commission on Radiological Protection represent the most reliable data available.

The epidemiological studies of baseline health effects at all existing DOE sites are not essential for decisionmakers to discriminate between the alternatives discussed in this programmatic EIS, because they are not relevant to any reasonably foreseeable adverse impacts.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in the EIS. The analyses show that none of the alternatives would have adverse impacts.

05.10 (022) Safety and Health Effects

COMMENT

The commentor notes that cancer fatalities are in the Summary as "one" for all alternatives.

RESPONSE

The values in the Summary were chosen for simplicity of presentation. The analyses in the text and appendices of the EIS provide health effects estimates for each site and alternative. These estimates vary over a wide range and depend on a variety of factors. However, in all cases, the analyses estimate that less than one fatal cancer would result from the activities under each alternative.

05.10 (023) Safety and Health Effects

COMMENT

The commentor questions whether radiation from past practices may be the cause of cancers and other health effects in the area and discusses previous releases and accidents at DOE sites.

RESPONSE

Analysis of impacts from past releases and accidents at DOE sites is not within the scope of this EIS; however, it is DOE policy to identify and correct any inadequate practices concerning safety and health arising from operation of its facilities. In this regard, accidents and accidental releases are required to be reported, and accidents resulting in significant releases from DOE facilities are included in annual monitoring reports that are publicly available. Detailed descriptions of the events concerning prior accidents or releases are outside the scope of the EIS. The Hanford Environmental Dose Reconstruction project currently is evaluating past releases from the Hanford Site.

Analyses in the Health and Safety sections of both volumes of the EIS evaluated potential impacts to the off-site public from both radiological and nonradiological hazards for actions resulting from the alternatives in this EIS. For all alternatives, impacts were estimated to be small, hypothetically resulting in fewer than one additional fatal cancer in the surrounding population over that which would occur without the presence of these DOE activities.

05.10 (025) Safety and Health Effects**COMMENT**

The commentor notes that insufficient information is provided on dose assessment methodology to allow verification of the accuracy and representativeness of the predicted impacts and doses.

RESPONSE

Methods for estimating releases to water are described in Volume 2, Appendix F-2. Methods for estimating releases to air are described in Volume 2, Appendix F-3. Exposure and risk assessment methodology is described in Volume 2, Appendix F-4. Additional information is available in the cited reference material available in public reading rooms and information locations listed in the EIS.

05.10 (026) Safety and Health Effects**COMMENT**

The commentor suggests that nonradiation workers, visitors, and motorists at Idaho National Engineering Laboratory should be defined as the maximally exposed individuals, rather than a site-boundary resident.

RESPONSE

Potential exposure to nonradiation workers, visitors, and motorists at INEL has been evaluated for both radioactive and nonradioactive releases from site facilities. Descriptions of the exposure scenarios for these situations are contained in Volume 2, sections 5.7 and 5.12. Further information on evaluation methods is in Volume 2, Appendix F-4. Although such individuals may be closer to some site facilities than a site-boundary resident, they are not considered to be the maximally exposed individuals for two

reasons. First, workers spend only about 2,000 hours each year at the site; visitors and motorists spend even fewer. Site-boundary residents are assumed to spend 50 weeks (8,400 hours) each year at the site boundary. Second, additional pathways for exposure are included for site-boundary residents that do not apply to workers, visitors, and motorists. In particular, the potential for ingestion of radioactivity from home-grown produce is included in the evaluation for site-boundary residents.

05.10 (027) Safety and Health Effects

COMMENT

The commentor points out that risk estimates for all alternatives are higher for the Savannah River Site than for other sites.

RESPONSE

The estimates of risk from releases of radioactive and nonradioactive materials and from accidents depend on many factors. These include characteristics of the local population distribution, meteorology, groundwater, and surface water. They also include the characteristics of the facilities and activities addressed under each alternative. The assessment methods used for each site are described in Volume 1, Appendices A through F.

Specific information on the risks associated with the alternatives considered for SRS is provided in Volume 1, Appendices C and D, Chapter 5. The analyses in this EIS show that the risks for all alternatives considered would be small.

05.10 (029) Safety and Health Effects

COMMENT

Commentors question the effects from exposure to radiation and the methods for reporting radiation risks, and suggest that the EIS may not have used the most up-to-date or most accepted radiation and health effects dose response factors, particularly as related to induction of cancers.

RESPONSE

The potential health effects from exposure to radiation are the subject of research by scientists throughout the world. Some published results have been subjected to enough review and confirmation in the scientific community to become well accepted. Others have not stood up to careful scrutiny. Others are considered interesting, but unproven, hypotheses. None of these individual studies provides a comprehensive set of risk factors necessary to support the type of analysis required for the EIS. These individual studies are not, by themselves, a technically sound basis for setting radiation standards or making policy decisions.

The dose response factors for cancer induction used in the EIS were taken from the most recent International Commission on Radiological Protection recommendations (*1990 Recommendations of the International Commission of Radiological Protection*), which reflect the most recent and most widely accepted analysis of all currently available data. The authors of ICRP 60 reviewed all available studies. Volume 1, Appendix D and Volume 2, Appendix F-4 provide useful primers on radioactivity, radiation dose, and resulting health impacts. Volume 2, Appendix F-4 provides a discussion of how radiation doses were calculated and how cancer risks were estimated.

05.10 (030) Safety and Health Effects

COMMENT

The commentor questions how tritium could be present in urine after 400 days if its biological (retention) half-life is roughly 12 days.

RESPONSE

The biological or retention half-life does not refer to the period of time required for all of the material to be eliminated from the body. It is an estimate of the time for half the material to be eliminated. Half of the remaining tritium will be eliminated in another 12 days, leaving one fourth of the original amount. Half of this amount will be eliminated in the next 12 days, and so on. If the original intake was large enough, it is possible that detectable amounts would be eliminated 400 days later. Additional basic information on radiation and its effects can be found in Volume 2, Appendix A.

05.10 (031) Safety and Health Effects

COMMENT

Commentors suggest that the discussions of radiation and the term "latent cancer fatalities" are misleading or insensitive.

RESPONSE

The terms used in the EIS are not intended to be misleading or insensitive. They are the standard terms used to describe the impacts being evaluated. A glossary is provided in the EIS to aid in understanding technical terms. With regard to the effects of radiation exposure, basic information has been provided in Volume 2, Appendix A. More detailed information is in Volume 2, Appendix F-4.

05.10 (032) Safety and Health Effects

COMMENT

The commentor identifies specific inconsistencies within the EIS.

RESPONSE

The section on Public and Worker Health Effects in the Summary has been modified to indicate that the estimated health effects to the public include both operation activities and routine transportation. The collective dose estimate provided in Volume 1, section 5.3.2 is to the worker, which is higher than the dose to the public.

05.10 (033) Safety and Health Effects**COMMENT**

The commentor asks whether the Advanced Neutron Source Facility and the Expanded Core Facility should be included in the assessment of potential impacts for the Oak Ridge Reservation.

RESPONSE

The Expanded Core Facility was included in the analysis of potential SNF facilities at ORR. The Advanced Neutron Source Facility was evaluated separately. Both were included in estimates of dose to the maximally exposed individual. These assessments are in Volume 1, Appendix D and Volume 1, Appendix F, Part Three.

05.10 (034) Safety and Health Effects**COMMENT**

The commentor states that preservation of life and protection of property should be paramount in deciding what government-sponsored activities are allowed.

RESPONSE

The health and safety of people and the protection of property are accorded appropriate importance in deciding what activities could be implemented by the government (e.g., DOE Order 5480.1B, *Environmental, Safety and Health Program for DOE Operations*, Section 7, and EIS Volume 1, Summary).

05.10 (035) Safety and Health Effects**COMMENT**

The commentor states that cancer morbidity, not just cancer fatality, should be used as the measure of the impact of radiation exposures.

RESPONSE

The analyses of the potential effects of radiation exposure in this EIS do consider health effects other than cancer fatalities and are based on the standards of the International Commission on Radiological Protection. Volume 1, Appendix D, Attachment F, section F-1.3.3 and Volume 2, Appendix F-4 discuss

the terminology and risk factors used by the International Commission on Radiological Protection and how these factors were applied in calculating the effects on human health in this EIS.

The International Commission on Radiological Protection defines "health detriments" to include the impact of all fatal cancers, nonfatal cancers, and genetic effects. The health detriments caused by any exposure to radiation are calculated by summing all of these effects after multiplying each effect by a weighting factor intended to represent the severity of the impact of each type of effect on human health. As stated in the EIS, the total health effects (deaths, nonfatal cancers, genetic effects, and other impacts on human health) may be obtained for the public by multiplying the latent cancer fatalities by the factor of 1.46 developed by the International Commission on Radiological Protection.

Cancer fatalities were used to summarize and compare the results in the EIS because this effect was viewed to be of the greatest interest to most people.

05.10 (036) Safety and Health Effects

COMMENT

The commentor questions the accuracy of information in Volume 1, Appendix A on Hanford Site spent nuclear fuel management.

RESPONSE

The information has been updated and the text clarified.

05.10 (037) Safety and Health Effects

COMMENT

The commentor notes that the Summary presents numbers of fatal cancers in the populations surrounding each site for each alternative but does not give the sizes of the populations so that impacts can be estimated.

RESPONSE

Several factors in each site analysis affect the estimate of cancer fatalities, including population sizes, which are different for each site. These data are provided in Volume 1, Chapter 5. The Summary has been changed to reference Chapter 5 to identify the source of this information. The EIS was prepared in a tiered fashion with respect to technical depth of information. The Summary was intended to summarize the information so that it would be generally understandable to nontechnical persons. The first three chapters of each volume present expanded information with more technical detail, but are still in summary form. The remaining chapters in each volume provide the technical information needed to support the conclusions. The appendices are the most technically detailed and provide sufficient

information for a thorough technical review by specialists. The appendices also provide references that contain more information on the methods and results of technical analyses.

05.10 (038) Safety and Health Effects

COMMENT

The commentor asks why the computer code used to estimate health risks associated with DOE releases is not site-specific.

RESPONSE

Because the purpose of the analysis was to allow comparison among the alternatives, including sites, the use of the same source input is appropriate. The computer codes used to estimate health risks associated with releases from DOE facilities allow the input of site-specific data. Wherever possible, site-specific data was used for such input parameters as source terms, hydrology, and demographics. Although conservative generic meteorology classes D, E, and F were used in modeling, no credit was taken for terrain or stack height.

05.10 (039) Safety and Health Effects

COMMENT

The commentor refers to Volume 1, Appendix B, section 5.12 and raises an issue that the analysis for chemical impact focuses on cancer health effects. Some chemicals cause adverse noncancer health effects at exposure levels below those predicted to cause unacceptable increases in cancer incidence. In addition, the commentor states that the potential for synergistic effects from hazardous chemicals should be considered whenever possible.

RESPONSE

Potential synergistic effects from multiple chemical exposures are extremely difficult to assess quantitatively because there is insufficient data to indicate synergistic effects. However, the potential for synergistic effects is small where the concentrations for each individual compound are low, as is the case for the alternatives evaluated in this EIS. To ensure that potential impacts are bounded, conservatively high releases and exposure conditions were assumed. Further, the point of highest concentration for each chemical occurs at different times and places. It is unlikely that any one individual could be exposed to more than one chemical species at the concentrations reported in this EIS.

Radiation doses from historic operations are discussed in Volume 2, section 5.15.8. More information is available in referenced technical documents, which are available for review in reading rooms and information locations listed in the EIS. DOE is not aware of any generally accepted analysis

methodology that has been developed to evaluate synergistic effects due to several airborne chemical constituents. DOE is aware that research into this area is continuing.

The evaluation of cumulative effects considers historic accidents only. The implementing regulation for NEPA at 40 CFR, Paragraph 1508.7 specifies "that cumulative impacts result from past, present, and reasonably foreseeable future actions..." For cumulative impacts, DOE has consistently interpreted "reasonably foreseeable" to include construction, operation, maintenance, and other planned activities, but not to include future hypothetical accidents, inadvertent spills, and other unplanned activities. Potential chemical exposure resulting from an accident is evaluated in Volume 2, Appendix F-5. See also the response to comment 05.10 (021).

05.10 (040) Safety and Health Effects

COMMENT

The commentor points out an apparent inconsistency between the dose reported in the EIS for low-level waste disposal operations and the dose given in the *Radioactive Waste Management Complex Low-Level Waste Radiological Performance Assessment*.

RESPONSE

The commentor is correct that the doses reported in the cited reference for the post-institutional control period exceed those cited in the EIS for the operational period. However, the dose estimates are not directly comparable because the assumptions used in each analysis are significantly different. The doses cited in the EIS are evaluated at the site boundary and represent an upper bound for doses from operations during the time period addressed in the EIS. The doses cited in the RWMC performance assessment are the post-institutional control doses evaluated for a location very near the waste disposal complex (100 meters away) and represent an estimate of doses more than 100 years outside the time period addressed by the EIS. During this post-institutional time period, it is assumed that no controls exist to prevent an individual from approaching the waste disposal complex. Therefore, it is reasonable to expect doses for the post-institutional control period could exceed those cited in the EIS for the operational period.

Further, the doses reported in the RWMC performance assessment do not account for planned remediation of the RWMC under the CERCLA process. These remediation activities could significantly reduce the radiation doses expected from the RWMC over the long term.

The evaluation in Volume 2 of this EIS bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL are generally

addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process that integrates the remediation requirements of CERCLA and the corrective action requirements of RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

05.10 (041) Safety and Health Effects

COMMENT

The commentor asks why the GENII-S computer code was not used for Hanford Site assessments instead of the GENII used in the EIS.

RESPONSE

GENII-S incorporates the same models and data inputs for dose parameters used. The GENII and GENII-S codes yield the same results when used in the deterministic mode. However, GENII-S does not have the capability to calculate the uncertainty in the atmospheric dispersion factors or the transit time to the receptor. These calculations are important particularly where short-lived radionuclides are important dose contributors and distances are long. The model does not allow for any decay on the way to the receptor, and thus, overestimates releases. Considering these limitations, the use of GENII was appropriate.

05.10 (042) Safety and Health Effects

COMMENTS

The commentor requests that radiation doses, expressed in effective dose equivalent, be provided for Brookhaven National Laboratory, as well as for other sites considered in the EIS.

RESPONSE

Radiation doses, expressed in effective dose equivalent, are provided for current activities at Brookhaven National Laboratory in Volume I, Appendix E, Chapter 3. The evaluation of potential impacts under each alternative is in Appendix E, Chapter 4. No additional quantitative estimates of radiation dose are presented in Chapter 4, because none of the alternatives would result in an increase in emissions at Brookhaven National Laboratory.

05.10 (043) Safety and Health Effects

COMMENT

The commentor asks whether the dose factors in Volume 2, Appendix F-4, Table F-4-5 are for unit intakes by inhalation or ingestion.

RESPONSE

The values in Volume 2, Appendix F-4, Table F-4-5 are for unit intakes by ingestion. The table is referenced in the text under a discussion of dose evaluation for consumption of contaminated groundwater.

05.10 (044) Safety and Health Effects

COMMENT

The commentor suggests that the high efficiency particulate air filter efficiency data stated for operations is not applicable to failed filters and cites a past occurrence at which a facility was shut down due to a filter break.

RESPONSE

The EIS contains evaluations of atmospheric emissions for both intact and failed high efficiency particulate air (HEPA) filters. Several of the accident scenarios address situations in which failed filtration systems are assumed. These assessments provide an upper bound for the potential consequences of such a failure and are discussed in Volume 2, section 5.14. Releases to the atmosphere from operating conditions with intact filtration systems are discussed in the Volume 2, section 5.7. The health and safety impacts from operational releases appear in Volume 2, section 5.12. The filtration systems are not the only control on atmospheric emissions. Other systems, including emission monitoring and administrative controls, are used to ensure that filter efficiency is maintained.

To minimize airborne releases, projects involving radioactive particulates at INEL would take place within a double-confinement structure. Conservative assumptions normally are used to estimate releases to the atmosphere, such as modeling only two filters in series when at least three are planned for actual operations. Also, although HEPA filters have established particulate removal efficiencies of 99.97 percent (down to diameters of 0.3 micrometers), a conservative efficiency factor of only 99 percent typically is used for operational safety and accident analyses. These filters are capable of removing particles as small as 0.001 micrometers from an airstream, but the manufacturer performs the rating calibration at 0.3 micrometers using a standard aerosol-generating device. The filters are tested annually and inspected daily to ensure that their efficiency is maintained.

Safety analyses for forthcoming INEL facility operations will not presume perfect HEPA filter operation. Additional precautions will be taken to minimize airborne releases. The pressure differential across each filter is measured continuously to detect formation of any holes or insecure filter installation. Filter temperature will be measured to promptly detect a filter fire. Finally, radiation sensors will be installed downstream of the filters to continuously monitor atmospheric releases. Detection of radioactive particulates above the natural background levels would result in a prompt shutdown of facility operations.

See also the response to comment 05.11.03 (009)

05.10 (045) Safety and Health Effects

COMMENT

The commentor notes that data mentioned in the text of the EIS on off-site radiation levels are not provided.

RESPONSE

References have been added to Volume 2, section 4.7.3 that contain the data. Specifically, these are the yearly environmental reports for INEL for 1987 through 1991 (*The Idaho National Engineering Laboratory Site Environmental Report for Calendar Year 1991*). These references are available in reading rooms and information locations listed in the EIS.

05.10 (046) Safety and Health Effects

COMMENT

The commentor suggests that the statistical presentation of risks is misleading.

RESPONSE

The terms used to describe risk are not intended to suggest that individuals can have small fractions of a cancer. Risks applied to individuals reflect the lifetime probability of fatal cancer. Risks applied to populations reflect the number of additional cancers expected in that population. The terms used in the EIS are the standard used to describe the impacts being evaluated. With regard to the effects of radiation exposure, additional basic information is provided in Volume 2, Appendix A. More detailed information is in Volume 2, Appendix F-4.

05.10 (047) Safety and Health Effects

COMMENT

The commentor suggests that other locations or extraordinary circumstances could result in higher exposures and require a redefinition of the maximally exposed individual.

RESPONSE

Every reasonable effort was made to ensure that the doses estimated for the maximally exposed individual provide an upper bound for potential doses from site operations. For example, the locations chosen for evaluation correspond to the highest air and ground concentrations where any member of the public could reside. The dose pathways include conservatively high values for parameters such as time spent outdoors and dietary intakes of locally grown produce. The scenario definition is "generic" in the sense that it includes a set of standard pathways for radiation exposure. However, site-specific data have been used to evaluate these pathways.

The suggested approach of conducting personal field interviews to determine the potential for individuals receiving doses in excess of the maximum individual doses is not warranted. This information is not relevant to estimating foreseeable significant adverse impacts essential to reasoned choices among alternatives.

05.10 (048) Safety and Health Effects**COMMENT**

The commentor questions the statement that less than 1 percent of the average radiation exposure to a member of the United States population comes from the nuclear fuel cycle and asks for documentation.

RESPONSE

For the average member of the U.S. population, about 82 percent of total radiation exposure comes from natural background, including radon (55 percent), cosmic radiation (8 percent), radioactivity in the soil (8 percent), and natural radioactivity in the body (11 percent). About 18 percent comes from man-made sources including medical diagnosis and treatment (15 percent) and various consumer products (3 percent). Less than 1 percent results from the nuclear fuel cycle and global fallout. There are many references for these facts. One of the most authoritative is the *1990 Recommendations of the International Commission of Radiological Protection*.

05.10 (049) Safety and Health Effects**COMMENT**

The commentor suggests that DOE adopt an informal de minimis criterion to avoid unnecessary expenditure of resources in protecting and reassuring the public.

RESPONSE

DOE has not adopted a de minimis dose level for members of the public. Balancing of the public dose level versus cost to further reduce the dose to the public is accomplished at DOE facilities within the context of state and Federal regulations applicable to exposure of the public to radionuclide releases.

Balancing of public dose versus cost is effective in preventing the expenditure of funds to further reduce the already-low public exposures from radionuclide releases at DOE facilities. It is beyond the scope of this EIS to establish de minimis goals for DOE facilities.

05.10 (050) Safety and Health Effects

COMMENT

The commentor asks if the term "health effects" in Volume 1, Appendix B, section 4.11, page 4.11-7 should be interpreted as "latent cancer fatalities."

RESPONSE

There is no page 4.11-7 in Volume 1, Appendix B. DOE assumes that the commentor is referring to text on page 4.12-1 of the Draft EIS. The commentor is correct. The text has been changed to read "latent cancer fatalities" instead of "health effects."

05.10 (051) Safety and Health Effects

COMMENT

The commentor suggests that health risk-based standards be used to develop chemical hazard indices.

RESPONSE

Health risk-based standards were used to develop chemical hazard indices where possible. Such standards are not available for all chemicals. Where risk-based standards were not available, State of Idaho standards were used. This methodology is described in Volume 2, Appendix F-4.

05.10 (052) Safety and Health Effects

COMMENT

The commentor states that, contrary to statements in the EIS, measurable increments in radiological emissions could result from spent fuel alternatives and suggests that the cited statement should be clarified.

RESPONSE

The statement in Volume 1 cited by the commentor has been clarified.

05.10 (053) Safety and Health Effects

COMMENT

The commentor suggests that actual risk values be given and that the bullets in the right column on page 28 of the Draft EIS Summary be used as a summary.

RESPONSE

The EIS Summary is intended to summarize the information in a manner that would be generally understandable by nontechnical persons. The first three chapters of each volume expand information with more technical detail, but are still summary in form. Remaining chapters in each volume summarize the technical information needed to support the conclusions. The appendices are technically detailed and provide sufficient information for a thorough technical review by specialists. The appendices also contain references that provide even more information on the methods and results of the technical analysis.

The Summary has been revised as suggested.

05.10 (054) Safety and Health Effects**COMMENT**

The commentor notes that the Idaho National Engineering Laboratory has kept radiation to a minimum and that it is a safe area.

RESPONSE

The comment is noted.

05.10 (055) Safety and Health Effects**COMMENT**

The commentor expresses doubt that there are no significant adverse health effects from low-level radiation exposures typical of those received by populations surrounding commercial nuclear reactors or DOE facilities, and does not believe that the Centers for Disease Control and Prevention studies are credible.

RESPONSE

The effects of radiation exposure on human populations has been studied by many different organizations in addition to the Centers for Disease Control and Prevention. The International Commission on Radiological Protection (ICRP) has reviewed the state of knowledge of the effects of radiation exposure in *1990 Recommendations of the International Commission of Radiological Protection*. The ICRP concluded that the effects of low-level radiation exposure were adequately represented by the risk factors derived for high-dose exposures (B142, Page 142 of ICRP Publications). These high-dose risk factors were used in the EIS to estimate the health impacts for radiation exposures. The health impacts from radiation exposure to the public associated with the various alternatives would be less than the typical incidence of occupational-accident caused fatalities. (See Volume 1, section 5.3 and Volume 2, sections 5.15 and F-4.2.3 for occupational-accident fatality rates.)

05.10 (056) Safety and Health Effects

COMMENT

The commentor states that the latent cancer fatalities appear to be high (1.6 latent cancer fatalities per 40 years, centralization at the Savannah River Site) and asks that these numbers be checked for accuracy. Additionally, the commentor asks if there are ways, such as more shielding, to reduce impacts.

RESPONSE

DOE believes that the analytical approaches and technical information used in the EIS represent current and accurate information. Every attempt was made to ensure the data are accurate. The technical approaches used in the analyses supporting this EIS were reviewed and evaluated by DOE and independent contractors. The information in the EIS also underwent internal DOE review, and all technical comments provided were considered in preparing the EIS.

More shielding will not be added, as designs comply with NRC regulations applicable to radioactive materials transportation. These regulations are found in 10 CFR Part 71, which includes detailed packaging design requirements and package certification testing requirements. Complete documentation of design and safety analyses and results of the required testing are submitted to NRC to certify the package for use. This certification testing involves the following components: heat, physical drop onto an unyielding surface, water submersion, puncture by dropping package onto a rigid spike, and gas tightness. Some of the required tests simulate maximum reasonably foreseeable accident conditions.

05.10 (057) Safety and Health Effects

COMMENT

The commentor raises questions regarding complete reliance on high efficiency particulate air filters for preventing emissions of radioactive particulates, especially those less than 0.3 micrometers in diameter.

RESPONSE

To minimize airborne releases, projects involving radioactive particulates at INEL would take place within a double-confinement structure. Conservative assumptions normally are used to estimate releases to the atmosphere, such as modeling only two filters in series when at least three are planned for actual operations. Also, although HEPA filters have established particulate removal efficiencies of 99.97 percent (down to diameters of 0.3 micrometers), a conservative efficiency factor of only 99 percent typically is used for operational safety and accident analyses. These filters are capable of removing particles as small as 0.001 micrometers from an airstream, but the manufacturer performs the rating calibration at 0.3 micrometers using a standard aerosol-generating device. The filters are tested annually and inspected daily to ensure that their efficiency is maintained.

Safety analyses for forthcoming INEL facility operations will not presume perfect HEPA filter operation. Additional precautions will be taken to minimize airborne releases. The pressure differential across each filter is measured continuously to detect formation of any holes or insecure filter installation. Filter temperature will be measured to promptly detect a filter fire. Finally, radiation sensors will be installed downstream of the filters to continuously monitor atmospheric releases. Detection of radioactive particulates above the natural background levels would result in a prompt shutdown of facility operations.

05.10 (058) Safety and Health Effects

COMMENT

The commentor raises the issue that the most recent numbers on radiation were not used for analysis in the EIS.

RESPONSE

Volume 1, Appendix F, Figure 4.7-2 provides information on natural background radiation, specifically radon, in homes (inhaled). The information referenced is from the 1987 publication by the National Council on Radiation Protection and Measurement, *Ionizing Radiation Exposure to the Population of the United States*. This reference provides a number that is recognized nationally. The figure is meant to be indicative of the natural background radiation found in the Oak Ridge area. Values of radon from different areas within the country are still being studied and may differ; they may be smaller in some instances, and larger in others. This information does not affect the analysis, and there have been no changes in the EIS. A brief discussion of occupational and public health and safety for ORR is included in the EIS in Volume 1, Appendix F, Part Three, section 4.12.

05.10 (059) Safety and Health Effects

COMMENT

The commentor observes that health and safety impacts from the Idaho National Engineering Laboratory have apparently been minimal.

RESPONSE

The cumulative impacts analyzed in Volume 2, Chapter 5 for all of the alternatives analyzed in this EIS agree with this observation.

05.10 (061) Safety and Health Effects

COMMENT

The commentor does not want any additional spent nuclear fuel or activities at the Oak Ridge Reservation.

RESPONSE

The analysis in Volume I, Chapter 5 and Volume I, Appendix F, Chapter 5 indicates that the environmental consequences of the alternatives considered in the EIS would be small at any of the sites, including ORR. Therefore, bringing in additional SNF is not likely to add to environmental health hazardous that may already exist at this site. See also the response to comment 01.01.01.02 (011).

05.10 (063) Safety and Health Effects**COMMENT**

The commentor asks whether a quantitative uncertainty analysis should be done for the EIS.

RESPONSE

Volume 2, section 5.1 and Volume 1, Appendix D, section F.1.5 have been revised to include a discussion of uncertainty analysis. In general, however, environmental impact analyses are designed to produce a reasonable projection of the upper bound for potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context "conservative" means that an assumption or analysis would tend to overproduced, rather than underpredict, any adverse impacts. However, overly conservative analyses do not provide a useful basis for comparing alternatives. Therefore, the aim has been to avoid overconservatism and base the environmental impact analyses on realistic, site-specific information wherever possible. Each alternative has been analyzed using identical methods and levels of conservatism so that the relative impacts of alternatives can be accurately assessed.

The analysis of the impacts of normal operations and hypothetical accidents are based on calculations that require input data and a model or analytical method for projecting potential impacts. The nature of the input data for each analysis is slightly different. Socioeconomic analyses are based on projected budgets, for example, while air resources analyses are based on estimated releases of pollutants. The analytical models are also fundamentally different for similar reasons. For all analyses where conservative assumptions have been required, generally accepted engineering and scientific approaches have been used to ensure that these assumptions are not outside the range of uncertainty usually associated with the data.

Detailed uncertainty analyses can sometimes be useful to evaluate environmental impacts. They are particularly valuable when projected impacts are large and it is important to know how reliable the projections are. However, quantitative estimates of uncertainty in impacts for hypothetical future activities are difficult to determine. When appropriately conservative estimates of impacts are shown to be small, the exact degree of uncertainty diminishes in importance. The estimates of impacts in this EIS

are small enough that detailed quantitative uncertainty analyses are not necessary to meet the objectives of an EIS.

05.10 (064) Safety and Health Effects

COMMENT

The commentor suggests that professional engineers review Idaho National Engineering Laboratory facilities and questions the accountability of personnel who sign off DOE safety documents.

RESPONSE

All DOE facilities are reviewed for hazard classifications per DOE Order 5481.1B, *Safety Analysis and Review System*. Higher-hazard facilities require extensive safety analysis and review procedures. This includes independent reviews of these analysis summarized in safety evaluation reports. These reports and the safety basis of the facility are approved by the Program Senior Official at DOE Headquarters. The Office of Environmental Safety and Health Oversight (EH) conducts independent reviews of these documents and must agree with all assumptions, conservatisms, and analyses. This includes operating parameters and hazard classification of the facilities personnel conducting these reviews, including hazard professional engineers. See also the response to comment 06.02 (019).

05.10 (065) Safety and Health Effects

COMMENT

The commentor is concerned that the EIS underestimates the tritium release from the 100-K basin during an accident. The commentor estimates that the tritium release to the environment would be about 40 times higher than estimated by the EIS.

RESPONSE

Volume 1, Appendix A, section 1.1.2 has been revised to show that the amount of tritium in the basin is approximately 134 curies.

05.10 (066) Safety and Health Effects

COMMENT

The commentor claims that past court cases have rejected shipments of nuclear waste through Puget Sound's ports and that current government procedures do not adequately guarantee the safe handling of this fuel.

RESPONSE

DOE complies with the DOT regulations for the transport of radioactive material. These regulations are designed to protect workers and the public by minimizing the risks associated with the transport of radioactive material. The EIS analyzes a full range of alternatives, from no action, which involves

extremely limited transport of radioactive material, to centralization, which involves extensive transport of radioactive material. For all alternatives, the potential risks from transportation would be small. This includes the risks associated with maximum reasonably foreseeable accidents. The probabilities and consequences of maximum reasonably foreseeable transportation accidents are discussed and evaluated in Volume 1, Appendices D and I. Although the consequences of an accident of this type might be high, the probability of such an accident having high consequences is on the order of one chance in 10 million, and the consequences of most accidents, including those with a probability of occurring more frequently, would be less than those of the accidents analyzed.

With more than 50 years of radioactive material transportation in the commercial and government sector, there have been few transportation accidents involving radioactive materials, and these have resulted in little or no release of radioactivity. Nonetheless, emergency response teams are trained and ready throughout the United States to respond quickly in the event of a transportation accident. DOE recognizes the importance of preparedness for potential accidents involving transportation of SNF. DOE, DOT, and the Federal Emergency Management Agency (FEMA) provide training and materials to local emergency responders to prepare them to handle accidents properly. DOE provides for Radiological Assistance Program teams, which consist of trained experts equipped and prepared to quickly respond to an accident, and assist local emergency response personnel if requested. This response network, along with other preventive safety measures, such as shipping container design and testing, and adherence to stringent regulations, supports the continued safe shipping of SNF.

SNF shipping containers that could be handled by longshore workers are designed to meet national and international standards for safety, including radiation levels at the outside of the containers.

This EIS analyzes transportation from ports of entry. The potential for radiological exposures to longshore workers is within the scope of the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft).

As stated in this EIS, the Atomic Energy Act of 1954 authorizes DOE to establish standards to protect health and minimize dangers to life and property. Radiation protection standards are based on controlling radioactive releases to as low as reasonably achievable (ALARA) levels in recognition of the potential health risk associated with exposure to radiation. In addition, DOE adopted and enforces the occupational, safety, and health protection requirements that are equivalent to those issued by the Federal Occupational Safety and Health Administration (OSHA). DOE designs, locates, constructs, and operates its facilities in a way that provides a level of safety that is within the safety requirements for workers in

private industry for all comparable job categories, including high-hazard occupations such as construction. Analyses are discussed in Volume 1, section 5.1.1; Volume 1, Appendices A through D, Chapter 4; and Volume 2, section 5.12. Health and Safety sections of both volumes of the EIS evaluate both radiological and nonradiological impacts to the health of workers at DOE facilities. For all alternatives, impacts would be small. The Navy complies with OSHA regulations in the nonradiological occupational safety, health, and occupational medicine area.

05.10 (067) Safety and Health Effects

COMMENT

The commentor suggests that a caveat be added to Appendix F to show that exposure from the maximum reasonable foreseeable accident is in addition to exposure from natural background radiation.

RESPONSE

Volume 1, Appendix F has been changed to reflect the commentor's suggestion.

05.10.1 Worker

05.10.01 (001) Worker

COMMENT

The commentor states that chemical exposure risks are not included in the analysis of on-site transportation impacts for hazardous chemicals at the Nevada Test Site.

RESPONSE

Chemical exposure risks associated with on-site transportation are associated only with transportation accidents, because, during normal transportation, the chemicals are in sealed containers. Volume 1, Appendix F, Part Two, section 5.11.1 states that the transportation accident risk is bounded by the risk evaluated for the chemical spill accident at the Expanded Core Facility in Volume 1, Appendix D.

05.10.01 (002) Worker

COMMENT

The commentor, quoting a passage from Volume 2, which states that "industrial hygiene practices assure hearing protection for all workers," asks whether Idaho National Engineering Laboratory procedures cover all site employees. The commentor suggests that if they do, no effort has been made to ensure protection of all site workers.

RESPONSE

INEL procedures cover all workers for all operations. DOE Orders are used to enforce standards at DOE sites. DOE Order 5480.4, *Environmental Protection, Safety, and Health Protection Standards*, specifies

mandatory compliance with Title 29 CFR 1910, *Occupational Safety and Health*. DOE Order 5483.1A, *Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned, Contractor-Operated Facilities*, provides additional guidance for DOE contractor employees at government-owned, contractor-operated facilities and specifically requires compliance with OSHA hearing protection requirements.

05.10.01 (003) Worker

COMMENT

The commentor suggests that workers may not be safe near leaking radioactive containers, such as the leaking tanks at the Hanford Site, while an effort is made to stop the source of the leaks.

RESPONSE

DOE considers worker safety in its planning before performing any work in a radiation environment. The DOE policy regarding worker exposure to radioactivity is to minimize the exposure to the lowest level that is reasonably achievable. Radiation workers are intensively trained and follow rigorous operational procedures to ensure safety. Also, workers have the authority to stop any work if they believe conditions are unsafe. Work is not resumed until conditions are declared safe.

05.10.01 (004) Worker

COMMENT

Commentors raise issues about the health and safety of the workers at DOE and Navy facilities.

RESPONSE

As stated in the EIS, the Atomic Energy Act of 1954 authorizes DOE to establish standards to protect health and minimize dangers to life and property. Radiation protection standards are based on controlling radioactive releases to as low as reasonably achievable (ALARA) levels in recognition of the potential health risk associated with exposure to radiation. In addition, DOE adopted and enforces the occupational, safety, and health protection requirements that are equivalent to those issued by OSHA. DOE designs, locates, constructs, and operates its facilities in a way that provides a level of safety that is within the safety requirements for workers in private industry for all comparable job categories, including high-hazard occupations such as construction. Analyses are discussed in Volume 1, section 5.1.1; Volume 1, Appendices A through D, Chapter 4; and Volume 2, section 5.12. Health and Safety sections of both volumes of the EIS evaluate radiological and nonradiological impacts to the health of workers at DOE facilities. For all alternatives, impacts would be small. In the nonradiological occupational safety, health, and occupational medicine area, the Navy complies with OSHA regulations.

05.10.01 (005) Worker

COMMENT

Commentors raise the issue of potential radiation exposure to longshore workers in the Port of Seattle.

RESPONSE

SNF shipping containers that could be handled by longshore workers are designed to meet national and international standards for safety, including radiation levels at the outside of the containers.

This EIS analyses transportation from ports of entry. The potential for radiological exposures to longshore workers is within the scope of the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel*.

05.10.01 (006) Worker

COMMENT

The commentor states that not all adverse properties of toxic and radioactive materials to which workers may be exposed are addressed in the EIS.

RESPONSE

The risk of contracting fatal cancers from exposure to radiation was used as a measure of impact to public health throughout the EIS to provide a consistent document and to allow ready comparison with other health impacts, such as those from exposure to chemical carcinogens. When nonfatal health effects and genetic effects from radiation are included in the analysis, the lifetime risk increases from 5E-4 per rem of exposure for fatal cancers to 7.3E-4 per rem of exposure for all health effects combined. The risk factors for these health effects are provided in Volume 2, Appendix F-4.

The risk factors for cancer induction used in the EIS have been taken from the most recent International Commission on Radiological Protection recommendations (*1990 Recommendations of the International Commission of Radiological Protection*), which reflect the most recent and most widely accepted analysis of all currently available data. The authors reviewed all available studies. Volume 2, Appendix A of this EIS provides a useful primer on radioactivity and radiation dose. Volume 2, Appendix F-4 provides a discussion of how radiation doses were calculated and how cancer risks were estimated.

Analysis of exposure of workers to toxic materials is addressed in Volume 2, sections 5.7 and 5.12. The inventory of potential chemical releases at INEL was reviewed and all potentially toxic materials were included in the analysis, even those that are only suspected of having adverse health effects. In addition, the records of all reported occupational injuries and illnesses, regardless of cause, were used to estimate potential future health impacts to workers.

05.10.01 (007) Worker

COMMENT

The commentor notes that Volume I, section 4.12.1 does not mention anything about worker health and safety beyond radiation exposure and that there have been quite a number of off normal and unusual occurrences at the 100-K area fuel storage basins and spent nuclear fuel storage areas each year. The commentor suggests that occurrences for the last 5 years at the Hanford Site be summarized in the EIS.

RESPONSE

The EIS has been changed to provide additional worker safety and health information.

05.10.01 (008) Worker

COMMENT

The commentor indicates that Idaho National Engineering Laboratory workers would not accept significant risks just to have a job.

RESPONSE

DOE is formally committed to protecting the safety and health of its workers, the public, and the environment. See the response to comment 05.10.01 (004).

05.10.01 (009) Worker

COMMENT

Commentors suggest that potential impacts to workers are deemphasized because they are reported in various sections of the document rather than in one place, and noted that the EIS did not identify the names and affiliations of those who prepared the various sections.

RESPONSE

EIS preparers, their affiliations, their education, and their years of experience are identified in Volumes 1 and 2, Chapter 6. DOE is solely responsible for the preparation and content of the EIS, whether in draft or final form. Although various consultants assisted DOE in preparing this document, DOE provided final technical review and approval of the document.

05.10.01 (028) Worker

COMMENT

The commentor suggests that the national average value for radiation doses from radon may not be the best value to use in describing the Oak Ridge Reservation area.

RESPONSE

Radon doses were included as part of the description of natural background radiation. Doses from radon vary widely at individual locations, as well as across the nation. Results from individual surveys, even at

specific locations, change with time due to a variety of factors. Therefore, national average values are the most useful for describing natural background from radon under most circumstances.

05.10.01 (029) Worker

COMMENT

The commentor notes that estimated radiation doses for one alternative appear to exceed the DOE occupational administrative control level, and suggests a lower standard be applied.

RESPONSE

The purpose of the EIS is to evaluate the potential impacts from proposed activities. For this reason, assumptions were made to ensure that estimated doses are conservatively high and represent an upper bound of potential impacts. Although conservatively high, the analysis shows potential radiation dose for the alternative in question would remain within legal limits for occupational exposure. The EIS is not intended to substitute for the assessments required by regulations or by DOE Orders. Any facilities constructed or operated under the chosen alternative will comply with applicable requirements.

05.10.01 (030) Worker

COMMENT

The commentor states that the EIS does not adequately address worker fatalities from operations and accident conditions as a basis for comparing alternatives.

RESPONSE

Volume I, Chapter 5 discusses the disciplines studied that result in potential impacts and that are of general interest, or may help discriminate among sites. The impacts from radiation exposures resulting from operations and accident conditions were analyzed for all alternatives contained in the EIS. The data are summarized in Volume I, Appendix K, Table K-2.

05.10.01 (031) Worker

COMMENT

The commentor states that contamination as a result of past nuclear weapons activities has resulted in potential health and safety threats to many defense workers and surrounding communities.

RESPONSE

DOE's policy is to identify and correct and inadequate practices concerning safety and health arising from past or present operation of its facilities. DOE, with the assistance of other agencies and Congress, has initiated many in-depth investigations into these potential health and safety concerns and is implementing corrective actions as soon as possible in cooperation with the respective stakeholders,

within existing budgetary constituents. Detailed descriptions of the events concerning prior accidents or releases are outside the scope of the EIS.

5.10.2 Public

05.10.02 (001) Public

COMMENT

The commentor states the source term inventories in Volume I, Appendix I-20 to I-23, are incomplete and that no explanation was found to account for how the list was reduced. The commentor further states that spent nuclear fuel typically contains a large number of fission products and their progeny and, for modeling purposes, the list is often truncated by combining certain parent-daughter isotopes or by eliminating the minor contributors to dose.

RESPONSE

In some cases to facilitate modeling, the radionuclide distributions for representative SNF types were truncated to eliminate minor contributors to dose. The radionuclides eliminated accounted for less than 1 percent of the total dose. Volume I, Appendix I has been revised to clarify this point. Supporting information is contained in documents referenced in Volume I, Appendix I.

05.10.02 (002) Public

COMMENT

Commentors express a lack of confidence in the transportation analyses because there is insufficient detail in the EIS to explain how the numbers were obtained. For example, one commentor wants to know why centralization at the Idaho National Engineering Laboratory requires fewer shipments than centralization at the Hanford Site, when 80 percent of DOE spent nuclear fuel is already at the Hanford Site. Questions also arise regarding the verification and testing of computer codes used in the EIS. Several commentors question the transportation accident probabilities used and are concerned about the potential for transportation accidents caused by substance abusers. Additionally, commentors question whether health effects of individuals in Idaho transportation corridor cities have been evaluated.

RESPONSE

Volume I, Appendix I summarizes the methodologies, key data, assumptions, and results of calculations for the transportation analyses. Details on the methodology, computer programs, modeling parameters, and calculations are contained in supporting technical documents that are referenced in the EIS. For example, in Volume I, Appendix I, *DOE Complex Wide Spent Nuclear Fuel Shipment Estimates for the DOE Programmatic Spent Nuclear Fuel Management Environmental Impact Statement*, is referenced for details on fuel transportation. Therein it is noted that the Hanford fuel shipping cask holds 1.8 tons of

fuel, whereas most of the INEL fuel is shipped in casks holding only 25 kilograms of fuel. Hence, there are fewer shipments of fuel required to move fuel from INEL to Hanford than from Hanford to INEL. The supporting technical detail is so extensive that it could not physically accompany the EIS. However, these supporting technical documents are available in the in the reading rooms and information locations identified in the EIS.

The computer codes used in the transportation analyses included the generally accepted transportation impact assessment programs RADTRAN 4 and RISKIND, and the generally accepted transportation routing computer codes HIGHWAY and INTERLINE. These computer codes have been used by Federal agencies in numerous EISs, environmental assessments, and other analyses. The computer codes have undergone rigorous independent review and were determined to be adequate for use in the transportation analyses. The computer codes were also chosen to be complementary in order to balance treatment of the potential consequences with risks of transportation.

The derivation of the transportation accident probabilities is described in Volume I, Appendix I. The accident probabilities used in the EIS are based on historical statistics observed in the truck and rail industries and account for many phenomena, such as weather, road conditions, and substance abuse.

The transportation analysis evaluated shipments from their point of origin to their destination. The incident-free and accident risk transportation analyses are presented for the entire route, which included Idaho, if a shipment happened to travel through, originate, or terminate in Idaho.

The accident consequence analyses are presented for transportation accidents with probabilities of occurrence exceeding $1E-7$ per year. The results are for various combinations of population categories (i.e., rural, urban, and suburban) and meteorology. Results were not given for specific towns or cities because of the large number of towns and cities along a transportation route in which an accident could occur. Instead, the results were presented for accidents in various population density zones, such as rural, suburban, and urban. To determine which accident corresponds to their town or city, reviewers would match their particular population density zone to a population zone analyzed in the EIS. For example, to find the consequences of a transportation accident in a suburban area such as Idaho Falls or Pocatello, the reviewer would look up the consequences of an accident in a suburban area; these consequences would be representative of the consequences in Idaho Falls or Pocatello.

05.10.02 (003) Public**COMMENT**

The commentor notes that transportation impacts are underestimated and that transportation risks have been trivialized by the comparison with traffic fatalities.

RESPONSE

Analyses in the transportation sections of both volumes of the EIS evaluated potential impacts to workers and the public from the transportation of radioactive material using models, data, and assumptions that were chosen to overestimate the actual impacts of transportation. For all alternatives, the potential risks from transportation would be small.

The comparison of transportation risks with traffic fatalities is appropriate because the overwhelming risk from vehicular transportation accidents is from traffic fatalities that are not associated with the release of radioactive material or exposure to radionuclides released during a transportation accident. The comparison is needed to provide some point of reference or perspective for the risks associated with SNF management. There was no intention to trivialize transportation risks.

05.10.02 (004) Public**COMMENT**

The commentor states that the transportation assessment for the waste being sent offsite for incineration is not identified and may present cumulative impacts and waste management concerns for the residuals that are not analyzed in the EIS.

RESPONSE

The comment refers to Volume 2, section 2.2.7, which discusses off-site incineration and return of residuals to INEL as one of the existing options for treating low-level waste generated at INEL. This section does not discuss the transportation assessment for shipping waste offsite for treatment. The transportation assessment is included in Volume 2, section 5.11. Volume 2, Table 5.11-4 summarizes anticipated waste shipments associated with each alternative, including shipments from INEL to an unspecified private-sector facility. To bound the transportation assessment, the private-sector facility was assumed to be located in the southeastern United States, which maximizes the shipping mileage. Both the incident-free and transportation accident analyses include the assessment of waste shipped offsite for treatment. These were also included in the cumulative impact analyses.

05.10.02 (005) Public

COMMENT

The commentor questions the use of average annual risk for transportation impacts when there may be a large difference in the number of yearly shipments.

RESPONSE

The total cumulative risks from transportation for the period 1995 through 2035 are presented in Volume I, Chapter 5 of the EIS. The total cumulative risk accounts for all years, including years when the number of shipments is low and years when the number of shipments is high; however, the annual variation in the shipping rates is not expected to be large, so the average annual rate was considered the most accurate.

The EIS Summary has been changed to add clarifying words as agreed with EPA.

05.10.02 (006) Public

COMMENT

The commentor expresses an opinion that contractors at the Hanford Site are in a conflict of interest situation and their assessment of contamination of the Columbia River lacks credibility.

RESPONSE

This specific issue discussed is not within the scope of this EIS; however it is the policy of the DOE and other Federal agencies to ensure that their contractors are not placed in or allowed to operate in conflict of interest situations. This EIS was thoroughly reviewed by DOE technical experts to ensure that it is factual and accurate. See also the response to comment 03.03 (008) regarding DOE credibility.

05.10.02 (007) Public

COMMENT

Commentors express general fears about the "dangers" of nuclear power; about residing near nuclear waste, spent nuclear fuel, and/or radioactivity; and what they breathe, drink, and eat. Some commentors cite recent health concerns with their families or neighbors, or the effect on property values if an incident should occur.

RESPONSE

DOE is aware of general public fears regarding radiation and radioactivity. The EIS analyzes the cumulative effect of DOE and Navy operations at the 10 candidate sites for SNF management activities. The EIS concludes that there is no significant risk due to operations or reasonably foreseeable accidents involving SNF management, including transportation at any of the candidate sites. See also the response to comment 05.15 (005) regarding property values.

05.10.02 (008) Public

COMMENT

The commentor states that public exposures from past releases such as the accidental criticality in 1978 are unknown.

RESPONSE

Radiation exposures resulting from past accidents, including the 1978 accidental criticality, have been assessed as cited in *Idaho National Engineering Laboratory Historical Dose Evaluation*. This report is cited as a reference in Volume 2, section 5.14.1.

The 1978 accident involved an unplanned nuclear chain reaction at the Idaho Chemical Processing Plant shielded hot cell. The incident lead to an estimated release of 620 curies, resulting in an effective radiation dose of less than 0.1 millirem to the general public. There were no on-site or off-site fatalities or injuries.

05.10.02 (009) Public

COMMENT

The commentor states that while sodium does not have a maximum contaminant level, it does have a recommended level and does have an effect on humans.

RESPONSE

Although sodium levels exceed the recommended levels in isolated groundwater areas of INEL, sodium disposal has decreased in recent years. Sodium levels are shown on Table 2-4 in the Water Resources Engineering Design File, available in reading rooms and information locations listed in the EIS. Sodium concentrations in the Snake River Plain aquifer are at or below background concentrations at the INEL boundary. There are no increased effects on off-site populations from sodium in groundwater at INEL. On-site groundwater used for human consumption complies with drinking water quality standards established in the Safe Drinking Water Act.

05.10.02 (010) Public

COMMENT

The commentor does not want to receive indirect exposure from radioactive contamination in the food chain.

RESPONSE

The EIS evaluates the potential indirect exposure from contamination in the food chain and concludes that the risks of radiation exposure to the public and to workers would be small for all alternatives. This is based on evaluations of operations and analyses of potential facility and transportation accidents. The

sections in the EIS that cover public safety include Volume 1, Summary, Public and Worker Health Effects; Volume 1, sections 5.7.10 and 5.7.12; Volume 1, Appendices A through F, sections on Occupational and Public Health and Safety, and Facility and Transportation Accidents; Volume 2, Summary, Accident section; and Volume 2, sections 3.3.11, 3.3.13, and 4.11.4.

05.10.02 (011) Public

COMMENT

The commentor states that probabilistic risk assessments are unreliable and should not be used to assess radiological risks to the public or as the basis for decisions.

RESPONSE

The accident analyses in the EIS used combinations of deterministic and probabilistic risk assessments. Deterministic assessments are based on inductive reasoning wherein the analyst evaluates the response to proposed initiating events such as equipment failures, human failures, and natural phenomena. Probabilistic assessments are based on deductive reasoning wherein the analyst assumes an end result (such as the release of radioactive materials from a facility) and then evaluates the necessary conditions required to produce the assumed result. Risk professionals and analysts consider these techniques important and complementary. In the EIS, reasonably foreseeable accidents over a range of likelihood were analyzed using these techniques. The EIS concludes that risk to workers and the public would be small for all the alternatives considered.

05.10.02 (012) Public

COMMENT

The commentor states that public health analyses may not be adequate due to the lack of specific waste and materials characterization.

RESPONSE

Many sites are preparing separate EISs on waste management, including SRS and Hanford. Appropriate waste characterization will be analyzed for impacts to public health in those EISs.

Volume 1 of this EIS covers SNF management. Radiological impacts are addressed in greater detail because these impacts are of greatest significance in managing this material, and are of particular interest to the public.

DOE has added better references to Volume 2 to characterize waste streams and has added additional mapping to those references.

05.10.02 (013) Public

COMMENT

The commentor asks why the time period for obtaining occupational injury and illness rates for DOE and its contractors differs from that for private industry.

RESPONSE

The evaluation in the EIS is based on the latest available reported data from each source. The time periods for obtaining occupational injury and illness rates differ because DOE and the National Safety Council report their data at different intervals.

05.10.02 (014) Public

COMMENT

The commentor states that the analysis of worker doses emphasizes large accidents and does not explicitly address smaller events, such as unscheduled maintenance, that may give high doses to workers. The commentor asks if these are included under routine operations.

RESPONSE

As discussed in Volume I, Appendix F, Parts Two and Part Three, section 5.15, the accident analysis considered a range of events from comparatively frequent operational upsets to very rare events. Within each range of frequency, accidents with the most severe potential consequences were assessed.

Therefore, the accident analysis evaluates the upper bound of consequences for the smaller, more likely events described by the commentor. In addition, these smaller events are included in the evaluation of operations conditions. Potential impacts to workers from operations are based on historical dosimetry records. These records include any doses from unscheduled maintenance and other high-dose activities that appear in the dosimetry database. (See also Volume I, sections 3.3.2 and 5.1.1 and Appendices A through F.)

05.10.02 (015) Public

COMMENT

The commentor finds a paragraph on radiological health effects difficult to follow and requests rewording.

RESPONSE

Volume I, Appendix F, Part Two, section 5.12 has been reworded to clarify its meaning.

05.10.02 (016) Public

COMMENT

Commentors raise questions about or state that the EIS did not adequately discuss the health and safety of the public and environment as a result of operating facilities.

RESPONSE

Volume 1, Chapter 5 and Volume 2, Chapter 5 discuss radiological and nonradiological impacts to the public relating to SNF management activities and environmental restoration and waste management activities at INEL. For all alternatives considered in this EIS, impacts would be small. The health and safety impacts to the public from the rest of DOE's operations are beyond the scope of this EIS.

05.10.02 (017) Public

COMMENT

Commentors state that radiological health impacts other than fatal cancer, total detriments, should be addressed in this EIS.

RESPONSE

Risk of fatal cancers from exposure to radiation was used as a measure of impact to public health throughout the EIS to provide a consistent document and to allow ready comparison with other health impacts, such as those from exposure to chemical carcinogens. Nonfatal health effects and genetic effects from radiation are a legitimate concern and are included in the EIS. Volume 1, section 5.1 has been changed to clarify fatal and nonfatal cancers and genetic effects.

The EIS analyses of the potential effects of radiation exposure do consider health effects other than cancer fatalities and are based on the standards of the International Commission on Radiological Protection. The term "health detriments" includes the total impact of all fatal cancers, nonfatal cancers, and genetic effects. The health detriments caused by any exposure to radiation are calculated by taking the sum of all these effects after multiplying each effect by a weighting factor intended to represent the severity the impact of each type of effect has on human health.

Volume 1, section 5.1 discusses the terminology and risk factors used by the International Commission on Radiological Protection, which are consistent with those used by NRC. These factors were applied in this EIS in calculating the effects on human health. Cancer fatalities were used to summarize and compare the results in the EIS, because this effect was viewed to be of the greatest interest to most people. The EIS states that the number of total health effects (deaths, nonfatal cancers, genetic effects, and other impacts on human health) may be obtained by multiplying the factor of 1.46 times the latent cancer fatalities.

05.10.02 (018) Public

COMMENT

The commentor questions the safety of spent nuclear fuel when in a shipping cask, and cites as an example the potential radiation exposure of 10 millirem per hour at 1 meter from the surface of the cask.

RESPONSE

The comparison of the 10 millirem radiation dose with a chest x-ray was intended to demonstrate how small the projected doses would be. DOE did not intend to imply that there would be therapeutic value associated with exposure to a shipping cask. In fact, no members of the public are likely to receive a radiation dose of as much as 10 millirem because they would be at greater distances from the cask and exposed for much shorter periods of time.

05.10.02 (019) Public

COMMENT

The commentor questions the presentation of radiation dose and risk impact in Volume I, Appendix D, Table 3-1 as an example and states that as radiation exposure doubles, the chance of cancer-related deaths increases by approximately a factor of 10.

RESPONSE

The comment is inaccurate. In Volume I, Appendix D, Table 3-1, units are the lifetime risk of fatal cancer over the entire 40 years for the alternatives listed in the table. The numbers are not in units of millirem per hour.

05.10.02 (020) Public

COMMENT

Commentors suggest that estimated releases from proposed facilities are too near the 10-millirem per year dose limit established under the National Emission Standard for Hazardous Air Pollutants, and controls should be implemented to reduce the dose to as low as reasonably achievable.

RESPONSE

The purpose of the EIS is to evaluate the potential environmental impacts from proposed activities. For this reason, assumptions were made to ensure that estimated doses are conservatively high and represent an upper bound of potential impacts. The EIS is not intended to substitute for the assessments required under the National Emission Standard for Hazardous Air Pollutants or any other regulatory requirement. Any facilities constructed or operated under the chosen alternative will comply with applicable regulatory requirements, including assessments of radiation doses under the National Emission Standard for Hazardous Air Pollutants.

05.10.02 (021) Public

COMMENT

The commentor expresses an opinion that DOE is not fully committed to protecting public health and safety.

RESPONSE

The Secretary of Energy has publicly affirmed that DOE policy and practice now place safety and environmental considerations above other program goals. DOE is working as expeditiously as possible to rectify and eliminate adverse environmental impacts as a result of previous practices. DOE is formally committed to protecting the safety and health of its workers and the public, and to protecting the environment. DOE intends to design, construct, and operate all proposed facilities in a way that provides a level of safety and of safety assurance that complies with applicable Federal, state, and local requirements and DOE Orders.

05.10.02 (022) Public

COMMENT

The commentor questions whether the environmental, safety, and health effects to the air and water from radioactive releases from the K-basins have been adequately considered.

RESPONSE

The health effects for members of the public from radioactive releases are described in Volume 1, Appendix A, section 4.12.2. This section describes the environmental monitoring and the dose consequences to the public from the Hanford Site. Volume 1, Appendix A, section 5.7.1 discusses the releases and dose consequences to the public from current activities at specific facilities, including the K-basins.

05.10.02 (023) Public

COMMENT

The commentor questions whether public health impacts are underestimated in the EIS.

RESPONSE

DOE believes that conservative analyses have been used to estimate public health impacts and risks. Discussion of this matter has been added to the EIS. The environmental impact analyses are designed to produce a reasonable projection of the upper bound for potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context, "conservative" means that an assumption or analysis would tend to overproduced, rather than underpredict, any adverse impacts. However, overly conservative analyses do not provide a useful basis for comparing alternatives. Therefore, the aim has been to avoid over conservatism and base the

environmental impact analyses on realistic, site-specific information wherever possible. Each alternative has been analyzed using similar methods and levels of conservatism so that the relative impacts of alternatives can be accurately assessed.

The analysis of the impacts of operations and hypothetical accidents are based on calculations that require two elements: input data and a model or analytical method for projecting potential impacts. These elements necessarily introduce some uncertainty in the estimated level of impacts on the environment. The nature of the input data for each analysis is slightly different. Socioeconomic analyses are based on projected budgets, for example, while air resources analyses are based on estimated releases of pollutants. The analytical models are also fundamentally different for similar reasons. Therefore, the exact degree of uncertainty varies among the analyses in the EIS. However, for all analyses where conservative assumptions have been required, generally accepted engineering and scientific approaches have been used to ensure that these assumptions are not outside the range of uncertainty usually associated with the data.

Detailed uncertainty analyses can sometimes be used to evaluate environmental impacts. They are particularly valuable when projected impacts are large and it is important to know how reliable the projections are. However, quantitative estimates of uncertainty in impacts for hypothetical future activities are difficult to determine. When appropriately conservative estimates of impacts are shown to be small, the exact degree of uncertainty diminishes in importance. The estimated impacts in this EIS are small enough that detailed quantitative uncertainty analyses are not necessary to provide a meaningful understanding of potential consequences.

05.10.02 (024) Public

COMMENT

The commentor notes that EIS doses reported in rem are not defined as either "committed effective dose equivalent" or "total effective dose equivalent."

RESPONSE

For readability, the generic term "dose" is used throughout the EIS in place of the more technically correct terms "committed effective dose equivalent" (CEDE) or "total effective dose equivalent" (TEDE). In general, the doses reported in the EIS are TEDE; that is, the reported dose accounts for the effective dose equivalent (EDE) from external radiation sources as well as the 50-year CEDE from internal radiation sources. For the accident analyses in the EIS, the TEDE is generally dominated by the CEDE from the inhalation and ingestion pathways. On the other hand, occupational doses from

operations are almost entirely EDE. In either case, it is appropriate to identify these doses as TEDE, provided that doses from both external and internal pathways are accounted for.

05.10.02 (025) Public

COMMENT

The commentor states that Volume 2, section 4.7.3 overestimates the significance of natural background radiation when compared with other exposures and that exposures that are a small fraction of background radiation are not necessarily "acceptable" because the public is usually unaware of the risks associated with fluctuations in exposure to background radiation.

RESPONSE

Volume 2, section 4.7.3 presents a comparison of doses from INEL activities to background. There is no attempt to call these doses acceptable.

05.10.02 (026) Public

COMMENT

The commentor asks if multiple sclerosis was included in the health effects studied relative to the Idaho National Engineering Laboratory or anywhere else.

RESPONSE

Multiple sclerosis was not one of the health effects studied for INEL or any of the other sites. The health effects considered were the ones generally associated with exposures to radiation or chemicals. These health effects are the clearest indications of the effects of DOE activities discussed in the EIS. Studies of the effects of radiation exposure have not indicated any association between radiation exposure and multiple sclerosis. Multiple sclerosis has been studied by medical researchers. For more information, contact the Multiple Sclerosis Society at 800-624-8236.

05.10.02 (027) Public

COMMENT

The commentor suggests that, with regard to incident-free transportation calculation of fatalities, there may be an oversimplification in either the radiological or the nonradiological models based on differences observed in the range of results presented.

RESPONSE

DOE has reviewed the models used for incident-free transportation calculations for both radiological and nonradiological fatalities and has not identified any over-simplifications. The basis for the commentor's conclusion is apparently a comparison of the range between truck fatalities and rail fatalities for the

general population presented in Tables I-15 to I-19 of Appendix I. Radiological and nonradiological fatalities include both fatalities for the general population and for workers.

05.10.02 (028) Public

COMMENT

The commentor objects to the characterization of a 34-percent increase in cancer risk as "minimal."

RESPONSE

The term "minimal" relates to the overall risk from operations of SNF facilities at ORR. Even with the 34-percent increase in risk cited by the commentor, the number of fatal cancers from all sources resulting from 1 year of operations would be 2.9×10^{-2} . In other words, a 34-percent increase in a very small number is still a very small number.

5.11 Accidents/Releases

05.11 (001) Accidents/Releases

COMMENT

The commentor is concerned about the effects from even small accidents.

RESPONSE

Volume I, Chapters 3 and 5 and Appendices A through F; and Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers and the environment due to a range of large to small accidents. The discussions include extensive evaluations and analyses of accidents. Small accidents have been included in the analysis, particularly if they have a high probability of occurring. The EIS shows that the risk to workers and the public from all accidents would be small for all of the alternatives considered.

05.11 (002) Accidents/Releases

COMMENT

The commentor states that, although there are no known disasters in handling of the nuclear waste as it exists, no one can say that a disaster will not be created.

RESPONSE

Volume I, Chapters 3 and 5 and Appendices A through F, and Volume 2, Chapters 3 and 5 and Appendix F, discuss risks to the public, workers, and the environment due to facility and transportation accidents, including SNF- handling accidents. The EIS analyses also evaluate the potential consequences of these accidents. These analyses have been extensively reviewed. The EIS shows that the risk to workers and the public from such accidents would be small for all alternatives considered.

05.11 (003) Accidents/Releases

COMMENT

The commentor questions the rationale of including analysis of a spent nuclear fuel transportation accident involving a release of large amounts of radioactive materials, as the historic record of spent nuclear fuel transportation accident shows no such releases.

RESPONSE

DOE agrees with the commentor's assessment of the historical safety record for SNF transportation activities. Consequently, DOE assigned a probability of 1×10^{-7} (one in one million) per year for potential SNF transportation accidents accompanied by a large release of radioactivity.

05.11 (005) Accidents/Releases

COMMENT

The commentor suggested that a rural population would represent a "best case scenario" not a "worst case scenario" in the event of a release from containment at the Oak Ridge site.

RESPONSE

This comment concerns the description of the existing socioeconomic conditions provided in Volume 1, Chapter 4. These generalized population distributions were not used in accident assessments. For facility accident assessments, as discussed in Volume 1, Appendix F, Part Three, section 5.15, actual population distributions in the most populous sector were used to maximize potential radiation doses to the population.

5.11.1 Facility Operations

05.11.01 (001) Operation

COMMENT

The commentor states that DOE should more fully study the potential effect of mass leakage and failure of storage tanks at the Idaho National Engineering Laboratory regarding impacts on all life forms downstream, downwind, and on the site.

RESPONSE

The evaluation of facility accidents in the EIS considered a range of large to small accidents, including maximum reasonably foreseeable accidents. Reasonably foreseeable accidents as defined in *Recommendations for the Preparation of Environmental Assessments and Environmental Impact Statements* include those for which impacts may have very large or catastrophic consequences. Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment (i.e.,

secondary impacts) due to facility accidents. The EIS shows that risks from accidents would be small for all of the alternatives considered.

The maximum reasonably foreseeable accident considered in the EIS with a potential impact to the Snake River Plain aquifer was the immediate release of 300,000 gallons of radioactive liquid from a high-level waste tank at the Idaho Chemical Processing Plant. The assessment, discussed in Volume 2, section 5.14, shows that the impacts to the aquifer would be small; for example, drinking water standards are not exceeded at the site boundary. No adverse impacts to other life forms would be expected as a result of this accident.

Also discussed in Volume 2, section 5.14 is the maximum reasonably foreseeable accident that would result in an airborne release of radioactive or hazardous material at INEL. This event was a severe earthquake at the Argonne National Laboratory-West Hot Fuel Examination Facility. As shown in Volume 2, Table 5.14-4, should such an incident occur, a potential exists for limited adverse effects to vegetation or wildlife onsite or downwind of the facility. No impacts would be expected to endangered or threatened species for this or any other reasonably foreseeable accident.

05.11.01 (002) Operation

COMMENT

Commentors state that there are significant safety problems at the Idaho National Engineering Laboratory, including historical accidents, and operational incidents.

RESPONSE

DOE's accident history at INEL has been compared with other industries, as summarized in Volume 2, section 5.14.1. This comparison shows that the accident rate at INEL is lower than that for comparable private industrial work. Past accidents were analyzed in *Idaho National Engineering Laboratory Historical Dose Evaluation*, and reasonably foreseeable accidents were analyzed in *Accident Assessments for Idaho National Engineering Laboratory Facilities*. Protection of members of the general public and workers against accidents is considered by DOE in the design, location, construction, and operation of facilities. The EIS shows that the risk to workers and the public from facility accidents would be small for all of the alternatives considered.

05.11.01 (004) Operation**COMMENT**

The commentor states that the work-day population of the Idaho Chemical Processing Plant is more than 1,000, and that DOE does not explain why a lower number of workers was used in the assessment of a potential collapse of the main stack caused by an earthquake.

RESPONSE

A seismic event large enough to cause a stack collapse would clearly initiate an emergency response. Workers would either take cover or evacuate as directed by the emergency response announcements. A qualitative assessment of the number of workers either within the range of the stack collapse or whose normal evacuation path might be impeded by debris from the stack collapse indicated that about 50 workers could be affected.

05.11.01 (005) Operation**COMMENT**

The commentor states that the more material that exists at a particular location, the more likely a spill or accident will occur.

RESPONSE

DOE agrees with the comment. The likelihood of accidents as assessed in the EIS depends in part on the handling rate and the amount of waste. Both of these considerations were included in the accident analyses discussed in Volume 1, site-specific Appendices A through F, and Volume 2, section 5.14.

05.11.01 (006) Operation**COMMENT**

The commentor states that the analysis associated with a radiological release following an earthquake-induced accident at the Idaho National Engineering Laboratory should include possible releases to the Snake River Plain aquifer.

RESPONSE

In terms of the consequences to the Snake River Plain aquifer, the maximum reasonably foreseeable accident analyzed with a potential impact was a release of the entire contents of a high-level waste tank at the Idaho Chemical Processing Plant. This potential accident is discussed in Volume 2, section 5.14 and Appendix F-5. The analysis assumed a seismic event of sufficient magnitude to cause one or more tanks to fail, and 300,000 gallons of high-level waste to be released to the soil beneath the tank farm. Modeling of migration of contaminants into the aquifer showed that even without any mitigation measures, the maximum concentration of radionuclides at the nearest site boundary was within requirements of safe drinking water standards.

The analyses of accidents described in Volume 1 and Volume 2 of this EIS include a range of accidents that might release radioactive material to the Snake River Plain aquifer or to the atmosphere. These analyses are described in Volume 1, Appendices B and D, and in Volume 2, section 5.14 and Appendix F. These analyses show the risks to the public and workers would be small for all of the alternatives considered.

05.11.01 (007) Operation

COMMENT

The commentor expresses the opinion that the fuel handling control systems at the Idaho Chemical Processing Plant are inadequate, and suggests the likelihood of a criticality may be higher than determined in the EIS, particularly as the Idaho National Engineering Laboratory consolidates, reracks, and handles more spent fuel. The commentor states that a criticality accident at ICPP-666 would have an annual frequency closer to 1E-01 per year rather than 1E-03 per year. Thus, the commentor suggests that an evaluation of an inadvertent nuclear criticality in ICPP-666 is needed to complete the EIS.

RESPONSE

DOE established an estimated annual frequency for a criticality accident during SNF-handling operations in a water pool by consensus of a group of experts. To the knowledge of these experts, there never has been a criticality accident anywhere in the world during storage of SNF in a water pool. The consensus of the experts was that a frequency of 1E-4 events per year was a representative value for the probability of an accidental criticality in a water pool throughout all DOE SNF handling and storage operations. It was the consensus that controls in effect at a specific facility and the condition of fuel and equipment at that facility may justify the use of a larger or smaller value, but that overall the probability values should fall in the range of 1E-03 to 1E-05 events per year. Detailed review of the EIS would reveal that this range has been used to describe the frequency of this accident in specific facilities.

Based on this consensus, the estimated annual frequency for a criticality accident at ICPP-603 was selected as 1E-03 per year in Volume I, Appendix B. The higher frequency of occurrence was selected because of the storage arrangement, and the type, age, and condition of fuel in ICPP-603. ICPP-666 is a newer facility and storage arrangements for fuel in ICPP-666 are better than for fuel in ICPP-603. It would therefore be expected that the frequency of occurrence of an accidental criticality in ICPP-666 would be smaller than in ICPP-603. Accordingly, a starting estimate of 1E-04 per year is more appropriate for ICPP-666.

ICPP-666 has a larger fuel inventory than ICPP-603. Methodology was established and is discussed in the EIS to adjust the frequency of occurrence for fuel inventories and for the number of fuel-handling

operations. It was determined that a fuel inventory difference does not directly affect the frequency of occurrence of an inadvertent criticality, but only indirectly through an affect on the number of fuel-handling operations. The EIS states in Volume 1, Appendix B, section 5.1.5 that the number of fuel-handling operations will be approximately the same in the future as it was in the past. Accordingly, it is appropriate to use 1E-04 per year as the estimated frequency of occurrence of a criticality accident at ICPP-666.

The commentor also implies that receipt of more reactive Navy fuel would cause the likelihood of a criticality accident to increase. Because fuel is more reactive does not necessarily increase the frequency of occurrence of an inadvertent criticality. ICPP imposes additional administrative controls for handling more reactive fuel (e.g., when such fuel is being handled, only one module is allowed to be out of storage at a time). Thus, the frequency of occurrence of an inadvertent criticality for handling more reactive fuel at ICPP-666 remains on the order of 1E-04 per year.

The commentor states that 1) ICPP has not performed a detailed assessment of nuclear characteristics of fuel and ICPP-666 fuel-handling operations; 2) ICPP has not conducted comprehensive deterministic accident analyses of planned operations; and 3) ICPP has not developed and implemented an appropriate fuel control system. The commentor is incorrect. All of these actions were completed prior to shipment of fuel to ICPP-666.

The commentor further alleges that if SNF is consolidated at the Idaho National Engineering Laboratory, "there will be a much higher probability that an accidental nuclear criticality will occur than is suggested by the EIS." The results in the EIS for ICPP-603 represent the bounding inadvertent criticality event. The frequency of this event does not change for various alternatives, because movement of fuel from ICPP-603 would take place under all alternatives. If other fuels are consolidated at ICPP, ICPP-603 would not be used for storing that fuel. The frequency of occurrence of an inadvertent criticality accident may increase somewhat in another facility, either existing or yet to be built, for storage of the additional fuel. For example, the frequency of an inadvertent criticality in ICPP-666 may increase from 1E-04 to 1E-03 per year if all the consolidated fuel were handled there. Nevertheless, the bounding event under all alternatives is expected to be an event in ICPP-603 as stated in the EIS.

05.11.01 (008) Operation**COMMENT**

The commentor states that the location selected for the potential spent nuclear fuel management facility at the Oak Ridge Reservation will be next to the Y-12 "walk-in pits," which contain shock-sensitive, pyrophoric chemicals.

RESPONSE

The Y-12 pits are actually 4 miles from the West Bear Creek Valley site selected for potential SNF management activities at ORR. The distance is accounted for in accident impacts and in cumulative impacts in the EIS, and no significant adverse environmental or health and safety impacts are reasonably foreseen as a result of the proximity of the Y-12 pits.

05.11.01 (009) Operation**COMMENT**

The commentor asks for a description of the cask drop accident mentioned in Volume 1, section 5.1.

RESPONSE

The cask drop accident mentioned is a postulated scenario in which a cask holding SNF is dropped and overturned in the fuel transfer area of the 105-KE or 105-KW basins at the Hanford Site. As a result, broken spent fuel rods might spill out of the cask and onto the floor of the building, but away from the spent fuel pool. This accident is described in detail in Volume 1, Appendix A, section 1.1. Volume 1, section 5.1 of the EIS has been changed to correctly reference the cask drop accident.

05.11.01 (010) Operation**COMMENT**

The commentor recommends clarifying how the estimated frequency of a fuel-handling accident at the Idaho National Engineering Laboratory, and the impacts associated with it, would change between the alternatives.

RESPONSE

The characteristics of accidents analyzed under the each of alternatives are adjusted through the use of scaling factors developed for both frequency and consequences (see *Accident Assessments for Idaho National Engineering Laboratory Facilities*). For example, the expected frequency of a handling accident involving SNF would be greater in the 1992/1993 Planning Basis alternative than the No Action alternative because of the increased number of handling events in the 1992/1993 Planning Basis alternative compared with the No Action alternative. But no adjustments to the consequences would be expected because the same type and amount of "material at risk" would be involved.

05.11.01 (011) Operation

COMMENT

The commentor states that the accident impacts would decrease for Oak Ridge under the Decentralization alternative due to storage upgrades not included in the No Action alternative.

RESPONSE

Volume I, section 5.1 has been modified as identified by the commentor.

05.11.01 (012) Operation

COMMENT

The commentor notes that no liquid releases are planned for normal operations and that the EIS should address whether these plans are subject to change; and if so, analyses should be modified.

RESPONSE

No current plans exist to change the operating scenario (i.e., no liquid releases are planned to the environment, as stated in Volume 1, Appendix F, Part Two, section 5.8.1). Nevertheless, a conservative release scenario was evaluated for this EIS, which represents a maximum amount of liquid effluent that could be released under operating conditions. This evaluation should be sufficient to bound any future operations releases.

5.11.2 Transportation

05.11.02 (001) Transportation

COMMENT

Commentors indicate the EIS failed to analyze transportation accidents while transporting spent nuclear fuel through inland waters of the United States.

RESPONSE

Volume I, Appendix I has been expanded to include three additional shipping scenarios for transporting N-Reactor SNF from the Hanford Site to Sellafield, England, for processing. The scenarios include inland and U.S. territorial water barge transport of SNF and transoceanic shipment of SNF to Sellafield, England. Accident consequences are included for port activities as well as during ocean transit. Risk to workers and the public from these activities has been shown to be very small. This evaluation is performed as an example of reasonably foreseeable impacts. Analyses, impacts, and consequences of transporting foreign research reactor (FRR) SNF on the open seas to the United States is addressed in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel*.

05.11.02 (005) Transportation**COMMENT**

Commentors suggest that the EIS describe the historical spent nuclear fuel accidents that occurred between 1971 and 1993 to determine if any had occurred in urban or suburban areas where the probability of an accident was noted by the EIS to be very low (less than 1×10^{-7} per year).

RESPONSE

The 1×10^{-7} per year probability cited by the commentors does not refer solely to the probability of an SNF accident; rather, it refers to the probability of an SNF accident accompanied by a large release of radioactivity. Based on the historical record, no SNF accidents in any areas (rural, suburban, or urban) have resulted in the release of large amounts of radioactivity.

05.11.02 (006) Transportation**COMMENT**

The commentator notes that the EIS does not address the potential for shipboard fires and spread of contamination as a result of those fires, or the impact to emergency response personnel in port or at sea should a shipboard fire occur.

RESPONSE

The analysis of accidents, including shipboard fires, in ports and on ships, and the resulting impacts on emergency response personnel for FRR SNF is beyond the scope of this EIS. However, these types of accidents and their impacts are being addressed in a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft) (FRR EIS), as well as a decision as to whether the United States will receive such SNF.

The criteria used to choose the ports of entry are outlined in the Notice of Intent for the FRR EIS (*Federal Register* Vol. 58, No. 202, October 21, 1993, pages 54336-54340). These criteria included: (a) adequacy of harbor and dock characteristics to satisfy the cask-carrying ship requirements, (b) availability of safe and secure lag storage, (c) adequacy of overland transportation systems from ports to the storage sites, (d) experience in safe and secure handling of hazardous cargo; (e) emergency preparedness status at the port and nearby communities; and (f) proximity to the proposed storage sites. A range of alternative ports will also be analyzed in the FRR EIS. The decision regarding port selection will not be made until both this EIS and the FRR EIS are completed.

An analysis of a shipboard fire involving Naval SNF is included in Volume I, Appendix D, Attachment F.

05.11.02 (007) Transportation

COMMENT

The commentor requests inclusion of a shipboard fire accident scenario in the EIS.

RESPONSE

Shipboard transport and handling of SNF is beyond the scope of this EIS. Policy alternatives for United States origin foreign research reactor SNF, and for its transport, receipt, handling, and storage are being addressed in a separate environmental impact statement (58 FR 54336). The FRR SNF EIS will assess impacts of marine transport and receipt of FRR SNF at six or more ports of entry. Incident-free operations and potential accidents, including a shipboard fire, will be evaluated.

An analysis of a shipboard fire involving Naval SNF is included in Volume 1, Appendix D, Attachment F.

05.11.02 (008) Transportation

COMMENT

Commentors raise the issue that transportation-accident health impacts to Tribal members and shipment inspectors along Interstate-15 through the Shoshone-Bannock Reservation are not included in the EIS.

RESPONSE

As discussed in Volume I, section 5.11.2, radiological impacts for incident-free transportation have been determined for (1) crewmen (drivers) and (2) members of the public. The crewmen category refers to the drivers of the shipments, and the members of the public category includes Tribe members.

For incident-free transportation, the radiological effects a shipment inspector might receive are encompassed within the effects to a crewman or driver of shipments based on the intermittent time the inspector interacts with a shipment compared to the interaction time of the driver. The radiological health effects to the driver are based on the driver receiving radiological exposure, within DOT regulatory limits, while in the cab of the vehicle and during detailed inspections of the cargo and the vehicle carrying the radioactive material.

Incident-free radiological impacts to Tribe members for SNF and radioactive waste shipments through the reservation are encompassed in the existing EIS analyses for members of the public based on population density along a generic transport route.

A reservation-specific accident analysis would not provide information additional to the information provided in Volume 1, Appendices D and I for the programmatic alternatives considered in this EIS. The

probability of an accident occurring along a specific 20-mile segment of interstate highway during an SNF shipment is so small that it is beyond the range of analysis required for a programmatic EIS.

5.11.3 General

05.11.03 (001) General

COMMENT

The commentor states that previous releases and accidents at DOE sites were intentional and/or covered up. The commentor also discusses previous and potential releases of radioactivity and accidents at U.S. government sites.

RESPONSE

It is DOE policy to identify and correct any inadequate practices concerning safety and health arising from operation of its facilities. In this regard, accidents and accidental releases are required to be reported, and releases from DOE facilities under all operating conditions are included in annual monitoring reports. Detailed accounts of the events related to prior accidents or releases are outside the scope of the EIS. The EIS addresses the impacts of a number of reasonably foreseeable accidents related to SNF management, with no significant risk of health effects or environmental impacts identified. DOE has considered past, current, and reasonably foreseeable future activities in assessing the cumulative impacts, which would be small.

The environmental impact analyses are designed to produce a reasonable projection of the upper bound for potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context, "conservative" means that an assumption or analysis would tend to overproduce, rather than underpredict, any adverse impacts. However, overly conservative analyses do not provide a useful basis for comparison among alternatives.

05.11.03 (003) General

COMMENT

Commentors, when referring to the transportation discipline, state they are confused by the term "maximum reasonably foreseeable accident." For example, commentors state they wonder if this is equivalent to a worst-case accident and whether the EIS has evaluated such an accident. Commentors wonder what constitutes the maximum reasonably foreseeable accident, and commentors state they wonder how DOE would deal with such an accident if it occurred.

RESPONSE

The EIS evaluates two complementary aspects of the impacts from transportation accidents. The first aspect is the risk associated with transporting radioactive material; transportation risk takes into account the probabilities and consequences of a complete spectrum of transportation accidents (i.e., accidents with high probabilities and low consequences, to accidents with low probabilities and high consequences).

The second aspect is the consequence associated with a bad transportation accident. A worst-case accident is too subjective and statistically, has virtually no probability of occurring. Instead, the EIS analyzes an accident that better represents an accident that could occur, but one which has little chance of occurring. This kind of accident is termed the "maximum reasonably foreseeable accident." In accordance with DOE guidelines for accident analyses in EISs, this accident was chosen based on having a probability of about 1×10^{-7} per year or about one in 10 million per year. This kind of accident is roughly comparable with what used to be called a worst-case accident, except that it is chosen based on a specific probability criterion (1×10^{-7}).

For most alternatives, an accident involving a rail shipping container containing SNF is the maximum reasonably foreseeable accident. The precise accident scenario that leads to the maximum reasonably foreseeable accident is not described because there are different combinations of fire and impact that could lead to the accident conditions. For example, a high-speed train collision with the shipping container followed by a high-temperature fire that lasts 2 to 3 hours could lead to these conditions, but there are also other combinations of fire and impact that could lead to the same conditions. Appendix I describes these various combinations.

The mitigation of transportation accidents may come either before or after the accident. Measures that are used before the accident include shipping the radioactive material in approved containers. For shipments containing large amounts of radioactive material, such as SNF, only containers that are specifically designed to withstand hypothetical accident conditions are used. In addition, transportation routes are also chosen to minimize the risk associated with transporting radioactive material. Measures that are used after a transportation accident include emergency response and EPA protective action guides that are designed to limit doses.

The EIS Summary was changed to clarify this concept.

05.11.03 (004) General**COMMENT**

The commentor asks about the impacts to the Idaho agricultural industry resulting from accidental releases of hazardous materials to the air or to groundwater.

RESPONSE

Volume 1, Chapters 3 and 5 and Appendices A through F, and Volume 2, Chapters 3 and 5 and Appendix F, discuss risks to the public, workers, and the environment due to facility accidents. The EIS shows that impacts from accidents would be small for all of the alternatives considered.

The maximum reasonably foreseeable accident considered with a potential impact to the Snake River Plain aquifer was a release of the entire contents of a high-level waste tank at the ICPP, as evaluated in Volume 2, section 5.14. The assessment shows that even without taking credit for mitigation measures, impacts to the aquifer would be small; for example, drinking water standards would not be exceeded at the site boundary. As shown in Volume 2, Table 5.14-4, for any accident involving an airborne release of radioactive or hazardous material at INEL, there is a potential for limited economic impacts associated with 1-year restrictions to public lands or up to a 1-year agricultural land withdrawal for land on and immediately adjacent to INEL (up to an estimated 10,000 acres).

05.11.03 (005) General**COMMENT**

The commentor notes that it is inconsistent to say no cases were found where an accident in one facility could cause an accident in a collocated facility when an earthquake could cause multiple accidents at a facility and across the entire site.

RESPONSE

Qualitative assessments of accidents associated with existing and proposed operations and their potential for causing accidents in another facility were part of the accident evaluation. No cases were identified in which an accident in one facility would cause an accident in another facility greater than the bounding accidents already considered in the EIS. The potential for simultaneous accidents caused by a single seismic initiator is described in Volume 2, section 5.14. DOE's analysis shows that potential multiple-facility releases or multiple-release mechanisms from a single facility resulting from a severe seismic event would be bounded by those resulting from the postulated accidents at the Argonne National Laboratory-West Hot Fuel Examination Facility. Consistent with the accident selection methodology described in Volume 1, Appendix B, the consequences and risks associated with multiple facility releases were eliminated from further consideration because they do not represent the maximum reasonably foreseeable accidents within the frequency categories defined in Volume 1, Appendix B, Table 5.15-5.

05.11.03 (006) General

COMMENT

Commentors state that the effects of a large earthquake at the Nevada Test Site should be evaluated as a high consequence, low probability event.

RESPONSE

In the EIS, the accident yielding the largest radiation dose (i.e., the bounding event) is the airplane crash into the dry cell facility scenario. This accident scenario assumes a breach of the containment and a subsequent airplane fuel fire resulting in a plume of contaminants. The results of this hypothetical accident are provided in Volume 1, Appendix F, Part Two, Tables 5.15.1 through 5.15.6.

A large-earthquake scenario was considered in the EIS. It was determined that the earthquake scenario differs from the airplane crash scenario in that there is limited combustible material in the structures, the spilled airplane fuel is not present during an earthquake, and ignition sources are minimal. Thus, the impact of subsequent fires and resultant contaminant plumes was found to be less in the earthquake scenario than for the airplane-crash scenario. As a result, a more detailed analysis was not warranted.

05.11.03 (007) General

COMMENT

The commentor expresses disbelief that impacts from accidents such as Three Mile Island or Chernobyl would not cause damage if they occurred at the Idaho National Engineering Laboratory.

RESPONSE

The nature of potential accidents associated with storing SNF, as well as treating and storing radioactive wastes, at INEL differs from the types of accidents the commentor mentions. Nuclear fuels in the reactor accidents cited were so intensely radioactive that the heat they generated internally was sufficient to melt or burn the fuels in the absence of cooling. For SNF in long-term storage at INEL, natural decay of radioactivity has occurred long enough that the heat the fuel generates would be much lower than that required for fuel melting. The fraction of radionuclides available to be released to the environment is much smaller for nonmelted fuel than for reactor fuel that could melt by internally generated heat.

This EIS shows that the risk to workers and the public from INEL facility accidents would be small for all of the alternatives considered.

05.11.03 (008) General

COMMENT

The commentor notes that flooding could occur at the Idaho National Engineering Laboratory and that impacts to water resources should be addressed.

RESPONSE

The INEL accident analyses, summarized in Volume 1, Appendices B and D, and Volume 2, Chapter 5 considers flooding and other natural phenomena as potential causes of accidents. Some potential accidents were selected for detailed analysis because they were comparatively likely, and some causes were selected for detailed analysis because of their large potential consequences. The consequences of a seismic failure of the high-level waste tanks was selected for detailed analysis instead of flooding because the radioactive inventory in the high-level waste tanks has a larger potential for consequences to water resources than a flood. The high-level waste tank failure accident is reported in Volume 2, section 5.14, and the impacts to the aquifer would be small under all the alternatives that were analyzed.

05.11.03 (009) General

COMMENT

The commentor states that risks associated with Idaho National Engineering Laboratory aboveground storage, waste management, and reburial of wastes for the Pit 9 Retrieval project have not been characterized in the EIS. The commentor further asks that if the Pit 9 waste is not safe to store above ground, what is the case with the safety of the tons of high-level waste in storage.

RESPONSE

The Pit 9 Retrieval Project is an on-going project initiated under INEL FFA/CO and applies to all alternatives. Simply stated, the project will excavate previously buried wastes, separate transuranic components, and rebury the remaining waste. The separated components would be placed in drums and stored in the Transuranic Storage Area of the RWMC. While the Project has separate NEPA documentation, the Pit 9 Retrieval Project impacts were included in this EIS as part of the INEL baseline. A summary of Pit 9 Retrieval Project is given in Volume 2, Appendix C. Risks, including accident risks, associated with the Pit 9 Retrieval Project are part of the baseline impacts summarized in Volume 2, Chapter 5. Post-treatment low-level waste from Pit 9 could be stored safely above ground, but low-level waste contaminated with fewer than 10 nanocuries per gram alpha-emitting radionuclides could be returned to shallow land burial. The section in the EIS Summary entitled Public Worker Health Effects notes that the risk from facility accidents would be small for the alternatives considered.

05.11.03 (010) General

COMMENT

The commentor states that collocation issues are not discussed, and that there is little written about the secondary impacts from an accident in one facility on other operating facilities at the Idaho National Engineering Laboratory.

RESPONSE

Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment due to facility accidents at INEL. As indicated in the EIS, the discussion is a summary of facility accidents detailed in *Accident Assessments for Idaho National Engineering Laboratory Facilities*. The discussion includes evaluations and analyses of accidents that were extensively reviewed. Qualitative assessments of accidents associated with existing and proposed operations, and their potential for causing accidents or secondary impacts in another facility, were part of the accident evaluation. No cases were identified where an accident in one facility would cause an accident in another facility greater than the bounding accident already considered in the EIS. Secondary impacts to other facilities were limited to potential cleanup costs. No other collocation issues were identified.

05.11.03 (011) General

COMMENT

Commentors suggest that particles released from the main stack at the Idaho Chemical Processing Plant in an incident on April 2, 1992, could be dispersed by wind and that a single 3-millirem-per-hour particle could cause an exposure of 10 millirem in about 3 1/2 hours. Commentors suggest that long-term ingestion of such particles was not analyzed because of the assumption of interdiction measures.

RESPONSE

In the incident at the ICPP main stack, a release of quarter-sized flakes of ammonium nitrate occurred at an elevation of about 250 feet. All detectable material was found within an area 2,560 yards wide by 350 yards long, about 12 acres. Thus, it is unlikely that any detectable radioactivity was transported beyond the INEL boundary. A subsequent cleanup effort with high efficiency particulate air filtered vacuum equipment returned the contaminated area to levels below those for noncontaminated areas, in accordance with DOE Order 5480.11, *Radiation Protection for Occupational Workers*.

Resuspension of radioactive materials from the ground by wind is acknowledged as a potential dispersion mechanism. Windborne resuspension reduces the amount of exposure at any given distance from the point of releases, but increases the area in which some exposure occurs. The commentor incorrectly concludes that direct contact with a 3-millirem-per-hour particle for about 3 1/2 hours would result in an effective whole body dose of 10 millirem. Rather, only that part of the body in contact with

the particle would receive a localized dose of 10 millirem. Depending on the exposure pathway, it may take thousands of such particles to result in an effective whole body dose of 10 millirem. For the INEL facility accidents with the maximum reasonably foreseeable consequences, and with the most unfavorable meteorological conditions, some restrictions on use of agricultural products might be implemented in accordance with established protective action guides.

05.11.03 (012) General

COMMENT

Commentors raise the issue of health risks involved should there be an accidental spill or a leak to the water table at the Idaho National Engineering Laboratory.

RESPONSE

Volume 1, Chapters 3 and 5 and site-specific Appendices A through F; and Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment due to a range of large and small facility accidents. The maximum reasonably foreseeable accident considered with a potential impact to the Snake River aquifer was the release of the entire contents of a high-level waste tank at the Idaho Chemical Processing Plant. This accident is discussed in Volume 2, section 5.14. The assessment shows that even without taking credit for mitigation measures, impacts to the aquifer would be small; that is, concentrations at the site boundary would be within requirements of the safe drinking water standards.

05.11.03 (013) General

COMMENT

The commentor states that the EIS fails to fully assess the Idaho Chemical Processing Plant high-level waste tanks and vaults, including structural constituents, seismic (risks), leakage in and out of the vaults, and service line leaks.

RESPONSE

A maximum reasonably foreseeable accident associated with the high-level waste tanks was performed for the EIS, as reported in Volume 2, section 5.14. A more detailed description of the assessment is given in *Accident Assessments for Idaho National Engineering Laboratory Facilities*. The analysis assumed a seismic event of sufficient magnitude to cause one or more tanks to fail, and 300,000 gallons of high-level waste to be released to the soils beneath the tank farm. Modeling of migration of contaminants into the Snake River Plain aquifer showed that even without any mitigation measures, the maximum concentration of radionuclides at the nearest site boundary would be within requirements of safe drinking water standards.

05.11.03 (014) General

COMMENT

Commentors express disbelief that a criticality would occur only once in 10,000 years in a spent nuclear fuel storage pool; risk methods used to estimate number of latent cancers a criticality could produce are also not believable to commentors.

RESPONSE

DOE acknowledges a typographical error in Volume 1, Chapter 5. The estimated probability of a criticality accident at the ICPP is 1 chance in 1,000 per year of operation, not 1 in 10,000 as printed. While DOE recognizes the potential for a criticality accident in an SNF storage pool, there has never been a nuclear criticality in an SNF storage pool in the history of the DOE complex or in the much larger experience base represented by the commercial nuclear power industry.

The evaluations in this EIS of the probability of an inadvertent criticality consider a number of factors, including facility design controls, administrative controls, fuel inventories, fuel types, degraded conditions of some fuels, and fuel-handling frequencies. In addition to the estimated probability of occurrence, the risk depends on the consequences of a criticality, which were conservatively calculated in the EIS.

The risk factors for cancer induction used in the EIS were taken from the most recent International Commission on Radiological Protection recommendations (*1990 Recommendations of the International Commission of Radiological Protection*), which reflect the most recent and most widely accepted analysis of all currently available data. The authors of ICRP 60 reviewed all available studies. Volume 2, Appendix A provides a useful primer on radioactivity and radiation dose. Volume 2, Appendix F-4 provides a discussion of how radiation doses were calculated and how cancer risks were estimated. Volume 1, Appendix D, section F.I.3.3 and Volume 2, Appendix F-4 discuss the terminology and risk factors used by the International Commission on Radiological Protection and how these factors were applied in calculating the effects of radiation on human health in this EIS.

Cancer fatalities were used in the EIS to summarize and compare the results, since this effect was viewed to be of the greatest interest to the most people. The typographical error in Volume 1, Chapter 5 has been corrected.

05.11.03 (015) General**COMMENT**

The commentor asks DOE to clarify whether the "accident scenario with the highest risk" as reported in the Summary is equivalent to the "maximum credible accident" or "maximum conceivable accident" or "maximum foreseeable accident" or "maximum reasonably foreseeable accident" as reported in Volume 2.

RESPONSE

The accident scenario with the highest risk as reported in the Summary is not necessarily the same as a "maximum credible" or "maximum conceivable" or "maximum foreseeable" or "maximum reasonably foreseeable" accident. The evaluation of facility accidents in Volume 1, Appendices A through F, section 5.15; and Volume 2, section 5.14 consider a range of accidents, from relatively common events, such as handling accidents, to very rare events, such as an aircraft crash into a facility. The assessments included "maximum reasonably foreseeable" accidents. For NEPA purposes, they are accidents that "have catastrophic consequences even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason" [40 CFR section 1502.22(b)]. In many cases, these accidents were beyond the design basis of the facilities and more severe than the maximum reasonably foreseeable accident for the facilities. Accident risks were determined by multiplying accident consequences by accident probabilities, and those with the highest risk are reported in the Summary because they bound the risks from facility accidents.

05.11.03 (016) General**COMMENT**

The commentor suggests that because of the potential for causing contamination in the event of a seismically initiated Mackay Dam failure, a dynamic analysis of the dam structure should be undertaken to determine its level of seismic resistance.

RESPONSE

DOE considered the failure of the Mackay Dam in its analysis and found that the consequences of the potential event would be much less than the maximum reasonable foreseeable accident, as discussed below. As a result, a dynamic analysis of the dam structure to determine its level of seismic resistance is unwarranted.

Mackay Dam is an earthenfill structure completed in 1917 and has a storage capacity of 44,500 acre-feet. The dam was not built to conform to seismic or hydrologic design criteria. In 1978, Mackay Dam was classified as a high-hazard dam by the State of Idaho, based on inspections by the Idaho Department of

Water Resources and the U.S. Army Corps of Engineers (*Phase I Inspection Report*). Mackay Dam is 11 miles northwest of the epicenter of the 1983 Borah Peak earthquake. Following the earthquake, the dam was inspected and there was no structural damage to the dam or the outlet works. Therefore, although the structure's ability to withstand severe seismic activity is unknown, the performance of the structure during the Borah Peak earthquake demonstrated the stability of the embankment during moderate earthquake ground motion (*Flood Routing Analysis for a Failure of Mackay Dam*). Following the Borah Peak earthquake, stabilization work was completed on the right abutment of the dam and the spillway was cleared of rock debris. The dam was inspected by the Idaho Department of Water Resources and a certificate was issued for continued operation of the dam and storage (Letter, Department of Water Resources to Mr. J. Doyle Jensen, Big Lost River Irrigation District, April 20, 1985).

In spite of the good record for the dam, various postulated dam failure scenarios have been examined with regard to flooding of INEL facilities. These postulated failures include piping failures, seismically induced dam collapse, and overtopping of the dam structure during the hypothetical probable maximum flood. In all cases, the reservoir was assumed to be full at the start of the initiating event. In the case of seismic failure, the failure was assumed to occur during the 25-year return period flood with an inlet flow to the full reservoir of 4,030 cubic feet per second (*Flood Routing Analysis for a Failure of Mackay Dam*). These conditions bound any additional water that could be impounded by ice dams above the reservoir, because the Big Lost River plain is relatively flat and the depth of the river is relatively shallow (a few feet), making the storage of significant bodies of water behind ice dams beyond reasonably foreseeable.

In all the above cases, it is assumed that the Big Lost River diversion dam would be over-topped by the floodwaters, with the probable maximum flood being by far the worst case (*Flood Routing Analysis for a Failure of Mackay Dam*). The probability of a probable maximum flood leading to dam failure has been estimated to be less than 1.0E-6 per year [*Flood Evaluation Study; Radioactive Waste Management Complex* (Draft)]. Although the probability for a seismically induced failure of the dam has not been calculated, the probability of seismic failure causing total collapse, coupled with a full reservoir and a 25-year recurrence interval flood is believed to be very small. None of the postulated failures of the Mackay Dam would overtop dikes at the RWMC (*Safety Analysis Report for the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory*), although there would be some flooding at Test Reactor Area, ICPP, Expanded Core Facility, and Test Area North areas (*Flood Routing Analysis for a Failure of Mackay Dam*). Even for probable maximum flood conditions, the flood waters and any transported contamination would be contained within the boundaries of INEL (*Flood Routing*

Analysis for a Failure of Mackay Dam). Groundwater contamination could be introduced during a flood, but the accident has been bounded by the assessment of a seismic failure of the high-level waste tanks at the ICPP, which is assumed to rupture one or more tanks, releasing 300,000 gallons of high-level waste to the soils beneath the ICPP tank farm. The maximum reasonably foreseeable event would be several orders of magnitude more severe than flood-induced contamination over a large surface area.

05.11.03 (018) General

COMMENT

The commentor expresses the opinion that DOE and the Department of Defense should stop producing and disposing of radioactive waste because the area at the Idaho National Engineering Laboratory is both seismically and volcanically active and could cause a radioactive release to the Snake River Plain aquifer.

RESPONSE

Seismic hazards and geologic analyses can be found in Volume 1, section 4.2 and Appendix B, section 4.6 and Volume 2, section 4.6 and Appendix F-2. Seismically induced accidents are discussed in Volume 2, section 5.14 and Appendix F-5. DOE takes seismic hazards very seriously, and INEL uses independently reviewed analyses to support the enforcement and implementation of DOE Orders and standards. An extensive effort has occurred over the past several years to upgrade DOE Orders and standards related to natural phenomena hazards. Studies have been under way for many years and are continuing at the INEL to ensure that seismic hazard characterization is based on up-to-date information and state-of-the-art methods. New geologic information on seismic hazard characterization is continually reviewed to determine if additional geologic studies are needed.

DOE has analyzed the effects of a hypothetical lava flow event at INEL . The geologic potential of a lava flow is discussed in Volume 2, section 4.6.4, and the estimated consequences of such an event for the various alternatives are shown in Volume 2, section 5.14, Tables 5.14-3, -5, -6, -8, and -9. The methodology used for performing these analyses is documented in Volume 2, Appendix F-5 and in *Accident Assessments for the Idaho National Engineering Laboratory Facilities*. As stated in the analyses, the DOE used conservative assumptions to account for the uncertainty in modeling the effects of an accident involving molten lava coming into contact with radioactive materials. The health risks to the public are well below DOE's *Nuclear Safety Policy* .

DOE has considered the potential for a volcanic ashfall event at INEL in Volume 2, section 4.6.4 and Volume 2 Appendix F-2.1.2. As stated in section 4.6.4, potential ashfall events are not expected to impact the site. The risk associated with an ashfall event is bounded by the accidents evaluated in

Volume 2, section 5.14. The impacts on the Hanford Site resulting from the Mount St. Helens eruption and ash fall were small. The Volcanism Working Group (*Assessment of Potential Volcanic Hazards for the New Production Reactor Site at the Idaho National Engineering Laboratory*) determined that hazards from volcanic events are small for INEL. Therefore, a silicic ash-flow hazard at the INEL does not represent a reasonably foreseeable significant adverse impact on the human environment.

A hypothetical accident involving the instantaneous release of the contents of a high-level waste tank represents the situation with the most potential impact on the Snake River Plain aquifer resulting from geologic conditions at the INEL and is discussed in Volume 2, sections 5.14 and Volume 2, Appendix F-2. Under this scenario, maximum radionuclide concentrations are predicted to reach the INEL boundary 300 years after the accident and predicted concentrations will be less than EPA MCLs or DOE DCGs.

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, sets forth DOE procedures to design, assess, and operate DOE facilities so that workers, the general public, and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. This Order specifically requires facilities to be re-evaluated upon any change in design and construction standards. Existing facilities at INEL have undergone continual safety analysis and seismic design review. Several of the projects described in Volume 2, Appendix C of the EIS are proposed by DOE to replace or upgrade facilities at the INEL. Likewise, actions such as the transfer of fuels from potentially vulnerable facilities to modern facilities have resulted from the ongoing safety analysis and seismic design reviews.

No new analyses are required for DOE Idaho Operations Office-managed facilities because the EIS summarizes existing credible scientific evidence relevant to understanding the existing environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. The evaluation of impacts is based on methods generally accepted by the scientific community. The analyses reported in the EIS evaluate the potential consequences including direct, indirect, cumulative, irreversible and irretrievable effects and long-term productivity losses. See also the responses to comments 05.08.01 (014) and 05.08.01 (030).

General discussions of waste management procedures and plans are covered in Volume 2, Chapters 1 and 2. Therein it is noted that the DOE is committed to a strategy emphasizing waste minimization and avoidance, with the goal being that most newly generated radioactive waste will be created during necessary cleanup activities and decommissioning of contaminated facilities that no longer serve essential missions. The DOE complex-wide management and cleanup of wastes associated with those

activities is outside the scope of this EIS. However, they are currently being addressed in the forthcoming *Waste Management Programmatic EIS*.

With respect to cleaning up INEL, the INEL Environmental Restoration Program, including both remediation and decontamination and decommissioning, is discussed in Volume 2, section 2.2.6. For a description of the significant progress already made in this program at INEL, see the response to comment 02.04 (047).

The generation and storage of SNF is discussed in Volume 1, section 1.1. Therein it is noted that most DOE SNF was generated in DOE production and experimental reactors that have ceased to operate, so considerable source reduction has already occurred. See Volume 1, Appendix E for further information on experimental reactors. In addition, the Navy is developing longer-lived Naval reactor cores, thereby reducing the amount of SNF that will be generated. Completely eliminating the sources of SNF, however, is outside the scope of this EIS.

05.11.03 (019) General

COMMENT

The commentor suggests that an additional failure scenario of the Mackay Dam be evaluated (collapse-induced flooding during high water at times when cold weather results in ice obstructions on the river).

RESPONSE

The Mackay Dam failure scenarios analysis in *Flood Routing Analysis for a Failure of Mackay Dam* and cited in the EIS includes a probable maximum flood scenario considered to be the most severe flood event reasonably possible using NRC siting criteria for commercial nuclear reactors. The Mackay Dam failure study includes sensitivity analyses that indicate significant changes in parameters would result in minor variations in flooding at INEL. Therefore, DOE believes the Mackay Dam failure model accurately assesses reasonably foreseeable INEL flooding hazards that could occur as a result of flooding of the Big Lost River. The combination of probable maximum flood estimated frequency and additional events and their probabilities would result in flooding hazards with probabilities lower than those that are reasonably foreseeable.

No new analyses are required for DOE Idaho Operations Office-managed facilities because the EIS summarizes credible scientific evidence relevant to understanding the existing environment, identifying reasonably foreseeable impacts, and evaluating potential consequences. This information is provided in Volume 2, section 4.8 and Volume 2, Appendix F-2.

The results of accident analyses (including beyond reasonably foreseeable accidents with potential impacts greater than seismically induced accidents) indicate that the risk to the public from alternatives described in this EIS would be small. Therefore, additional information or characterization of reasonably foreseeable seismic events with lesser potential impact would have no effect on the decision-making process.

05.11.03 (020) General

COMMENT

Commentors state that nuclear waste, spent nuclear fuel, and other dangerous materials can be involved in accidents.

RESPONSE

Volume 1, Chapters 3 and 5 and site-specific Appendices A through F, and Volume 2, Chapters 3 and 5 and Appendix F discuss risks to the public, workers, and the environment, and secondary effects resulting from a range of potential accidents. The discussions include evaluations and analyses of accidents. Although DOE cannot guarantee that no accidents will occur, the results of evaluations and analyses in this EIS indicate that risks to workers, the public, and the environment would be small for all the alternatives considered. (See the EIS Summary, Public and Worker Health Effects.)

05.11.03 (021) General

COMMENT

The commentor suggests that the EIS discuss an accident at the Idaho National Engineering Laboratory involving up to 6,000 gallons of hydrofluoric acid.

RESPONSE

An accidental release of hydrofluoric acid is discussed in Volume I, Appendix B, section 5.15. Hydrofluoric acid is stored outside in the ICPP facility area in a 30,290-liter (8,000-gallon) storage tank. Although there are only about 11,356 liters (3,000 gallons) in the tank, the accident was modeled assuming a full storage tank. The tank is over a catch basin that would contain the contents of the tank if the tank ruptures or if there is a piping failure. All the tank's contents were assumed to leak immediately. The amount of hydrofluoric acid released and the surface area of the acid in the catch basin were considered in the analysis. Downwind concentrations of acid are independent of the amount of acid spilled and depend only on the evaporation rate from the catch basin. The evaporation rate, in turn, depends on the surface area of the catch basin, as well as other factors. The duration of the release, however, depends on the total amount of acid spilled.

The EIS shows that the consequence of this potential event at the nearest site boundary is 0.078 milligrams per cubic meter of hydrofluoric acid. As to the impact to the maximally exposed individual, this concentration represents 0.2 percent of the Emergency Response Planning Guide Level 3 (ERPG-3) for hydrofluoric acid. For reference purposes, 100 percent of the ERPG-3 level is the maximum concentration of the specific toxic material from which a person not wearing a respirator could escape within 30 minutes, without having his ability to escape impaired or experiencing irreversible side effects.

05.11.03 (022) General

COMMENT

The commentor questions whether the maximally exposed individual is the person at the site boundary and recommends that further analysis be done to show that this individual has indeed received the maximum individual dose.

RESPONSE

The accident analyses in the EIS were performed with the plume rise going to the locations where maximum dose is received. See Volume 1, section 5.1.

05.11.03 (023) General

COMMENT

The commentor suggests that after an accident, communication with members of the public who may consume contaminated vegetables and other food produced in the vicinity is not well established at the Idaho National Engineering Laboratory.

RESPONSE

Volume 1, section 5.7 and Volume 2, section 5.19 discuss accident mitigation. DOE has issued a series of Orders specifying the requirements for emergency preparedness, and each DOE site has established an emergency management program. These programs are developed and maintained to ensure adequate response for most accident conditions and to provide the framework to readily extend response efforts for accidents not specifically considered.

The emergency management program incorporates activities associated with planning, preparedness, and response, including simulated emergency exercises with states, counties, and other agencies.

Emergency preparedness requirements for the facilities would be part of the planning that would occur after a ROD. Command, control, and communication are key parts of these emergency management programs. However, the details of such planning are beyond the scope of the EIS.

For the off-site population, the need for any protective action would be based on the guidance provided in the protective action guides developed by EPA. Interdiction activities by INEL accident recovery personnel are expected to take place following an accident to limit doses to off-site individuals at risk. This interdiction can limit ingestion exposure to the public.

For accidents with maximum reasonably foreseeable consequences at INEL, interdiction in accordance with protective action guides was assumed in the EIS analyses. Doses resulting from the ingestion pathway were calculated assuming contaminated foods comprised 10 percent of the person's 1-year diet following the accident. More information on the parameters used in the accident analysis and the assumptions regarding ingestion of contaminated food can be found in *Accident Assessments for Idaho National Engineering Laboratory Facilities*, sections 2.1.2. and 2.1.3.

05.11.03 (024) General

COMMENT

Commentors raise the issue of impacts a nuclear accident could have on the State of Idaho, such as impacts on tourism and the economy.

RESPONSE

Volume 1, Chapter 5 and Appendices A through F, and Volume 2, Chapters 3 and 5 and Appendix F of the EIS discuss reasonably foreseeable accidents and their impacts. Although DOE cannot guarantee that accidents will be prevented or that contamination will not occur, for all alternatives considered in the EIS, the risk to workers and the public from facility accidents would be small. DOE expects that impacts from reasonably foreseeable accidents on tourism and the economy would be limited and of short duration. As noted in Volume 2, section 5.14, there would be a potential for limited economic impacts.

05.11.03 (025) General

COMMENT

The commentor wants to better understand the assumptions used to determine risk acceptability, what constitutes acceptable risk, and who is responsible for this determination.

RESPONSE

Risks are presented in the EIS without a determination of acceptability. Acceptable risks can be determined only by the individual.

As used in this EIS, risk is defined as the product of the probability of an event times the consequences of that event. Volume 1, Appendices A through F, and Volume 2, Appendix F provide the details of how the risk analyses for this EIS were performed.

05.11.03 (026) General

COMMENT

Commentors state that accidents, accidental releases, and long-term effects of accidents are unpredictable.

RESPONSE

DOE cannot guarantee that accidents will not occur. Given that Volumes 1 and 2, Chapter 5 summarize the results of analyses of reasonably foreseeable accidents. Volumes 1 and 2, Chapter 5 also discuss impact avoidance and mitigation measures. These analyses show that the risks of reasonably foreseeable accidents under all the alternatives considered would be small.

05.11.03 (027) General

COMMENT

The commentor states that assumed ground-level releases from a facility accident may underestimate the impacts to the off-site population, because the modeling assumptions bias the model output and the conclusions of the accident analysis. An example provided is that a small number of workers close to the release point receive a higher dose than the large numbers of members of the public outside the site perimeter.

RESPONSE

The environmental impact analyses are designed to produce a reasonable projection of the upper bound for potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context, "conservative" means that an assumption or analysis would tend to overproduce, rather than underpredict, any adverse impacts. However, unreasonably conservative analyses do not provide a useful basis for comparing alternatives. Therefore, the aim has been to avoid unreasonable conservatism and base the environmental impact analyses on realistic, site-specific information whenever possible. Facility accidents were modeled using a release elevation consistent with the specific accident scenario. For example, some scenarios would have an elevated release point, such as through a stack, and others would have a ground-level release point. Each alternative has been analyzed using comparable methods and levels of conservatism so that the relative impacts of alternatives can be assessed accurately.

Volume 2, Appendix F-5.3.1 has been revised to state that the methods used in the analysis would produce higher estimates of radiation exposures near the point of release.

05.11.03 (028) General

COMMENT

The commentor suggests that following an accident, certain roadways could be inaccessible due to plume direction or weather conditions, and that this should be acknowledged.

RESPONSE

The EIS has been changed to acknowledge that under certain conditions, the ability of people to use designated evacuation routes could be impeded.

05.11.03 (029) General

COMMENT

The commentor requests clarification of what is meant by "not credible" with respect to an aircraft crash at the Hanford Site.

RESPONSE

The EIS has been revised to explain that if an event has a probability of occurring less than once in 1 million years, additional analyses were not performed.

05.11.03 (030) General

COMMENT

The commentor states that there could be a considerable error in the assumption that the maximum amount of contaminated foods consumed in the year following an accident for a person at the Idaho National Engineering Laboratory's nearest site boundary would be 10 percent of their diet.

RESPONSE

For the purposes of this EIS, accident assessments were performed using realistic, but generally conservative assumptions. As part of the health impact analysis to the maximally exposed individual following a potential accident, that individual's total dose received comprises four sources of exposure: air immersion, inhalation, ingestion, and direct ground-surface exposure.

That portion of the dose resulting from the ingestion pathway was calculated assuming contaminated foods comprised 10 percent of the person's 1-year diet following the accident and there were no interdiction actions unless EPA protective action guides were projected to be exceeded. The assumption of 10 percent is based on an engineering judgment of what is reasonable for most of the people living

near the site, as well as to try to make the scenario realistic, but generally conservative. Raising the percentage to a greater value would represent an unwarranted overconservatism in the total dose to the MEI.

The environmental impact analyses are designed to provide a reasonable projection of the upper bound for potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context, "conservative" means that an assumption or analyses would tend to overproduce, rather than underpredict any adverse impacts. However, overly conservative analyses do not provide a useful basis for comparison among alternatives.

More information on the parameters used in the accident analyses and the assumptions regarding ingestion of contaminated food can be found in *Accident Assessments for Idaho National Engineering Laboratory Facilities*, sections 2.1.2 and 2.1.3.

05.11.03 (031) General

COMMENT

The commentor suggests that the degrading structural integrity of spent nuclear fuel is a significant risk driver and that the EIS should include this prominent factor in the discussion of risk for the No Action alternative. As an example, the commentor states that the degraded fuel at the Hanford Site was said to be contributing to elevated radionuclide activities, which contaminates the groundwater that flows into the Columbia River.

RESPONSE

The accident risks presented in the EIS for the No Action alternative reflect an assessment of the current accident probabilities associated with SNF management, including the probabilities associated with degraded (vulnerable) fuels and facilities. Under the No Action alternative, DOE would limit actions to the minimum necessary for safe and secure management of SNF at the generation site or current storage location.

Volume 2, section 5.1.2 has been modified to state: "Consequences would be bounded by existing accident assessments, but likelihood may increase."

05.11.03 (032) General

COMMENT

The commentor states that the cumulative impacts from more than one accident initiated simultaneously by a major earthquake must be evaluated in the EIS.

RESPONSE

As discussed in Volume 2, section 4.6.3, seismic events were found to be the most likely common-cause initiators with the potential to cause releases at more than one facility and involve more than one waste type. Further, the potential for simultaneous accidents caused by a single seismic initiator is described in Volume 2, section 5.14.2. DOE's analysis shows that potential multiple-facility releases or multiple-release mechanisms from a single facility resulting from a severe seismic event would be bounded by those resulting from the postulated accidents at the Argonne National Laboratory-West Hot Fuel Examination Facility. Consistent with the accident selection methodology described in Volume 1, Appendix B, section 5.15.3, the consequences and risks associated with multiple facility releases were eliminated from further consideration because they do not represent the maximum reasonably foreseeable accidents within the frequency categories defined in Volume 1, Appendix B, Table 5.15-5.

05.11.03 (033) General

COMMENT

The commentor states that nonradiological health effects resulting from an accidental release of hazardous materials through a groundwater or surface water pathway at the Idaho National Engineering Laboratory have been overlooked.

RESPONSE

Such events are summarized in Volume 2, section 5.8. Under all of the alternatives considered, the possible future sources of contamination would be small compared with previous practices. Therefore, in this section DOE concludes that (a) only contaminant concentrations below EPA MCLs and DOE DCGs would migrate beyond the site boundary, resulting in small impact to the quality of groundwater leaving the INEL site; (b) adverse effects to groundwater quality have occurred in localized areas within the INEL site (contaminant plumes), but these plumes have not affected the regional quality of water; (c) state-of-the-art waste management practices applied under the alternatives would result in further reduction of contaminants existing in water resources (through source reduction and reduction of existing contamination through normal attenuation and radioactive decay); (d) computer modeling of vadose zone and saturated zone contaminant transport indicates that contaminant plumes with concentrations above the primary MCLs would continue to decrease at least through 2030 and the overall quality of the groundwater would be improving; and (e) water use at the INEL site for any alternative would have minimal effect on the quantity of water in the Snake River Plain aquifer.

05.11.03 (034) General

COMMENT

The commentor suggests a seismically induced accident associated with the 100-K basins should be included in the Hanford Site accident assessments since an "unreviewed safety question" was declared on May 5, 1994.

RESPONSE

A discussion of the seismic effect on the 100-K basins has been added to Volume I, Appendix A, section 5.15.

05.11.03 (035) General

COMMENT

The commentor states that thousands of cancers could result from one mistake that causes an accident involving transportation or a criticality in an inversion layer.

RESPONSE

Volumes I and 2, Chapter 5 discuss the probabilities and consequences of transportation and facility accidents, including those caused by human error. These discussions and their supporting documents include extensive evaluations of accident consequences using generally accepted engineering principles and practices including analysis under various meteorological conditions. The EIS shows that the risks to the public from facility and transportation accidents would be small for the alternatives considered.

05.11.03 (036) General

COMMENT

The commentor states that a dam failure, rather than flooding at the Hanford Site, is the event that would inundate spent nuclear fuel facilities. A reference to the dam failure discussion would be appropriate.

RESPONSE

Volume I, Appendix A, section 4.8 discusses natural flooding at the Hanford Site because there is a potential for collapse of the shoreline along the riverbank in the White Bluffs area. A cross-reference to dam failure in Appendix A has been added. Neither the probable maximum flood, nor a flood caused by collapse of the shoreline in the White Bluffs area would impact SNF operations at the Hanford Site. Flooding from a 50 percent failure of Grand Coulee Dam would inundate the K-basins.

05.11.03 (037) General

COMMENT

The commentor states that only "worst case" accidents should be the basis for a decision, or that worst-case, maximum credible accidents require evaluation.

RESPONSE

CEQ regulations no longer require analysis of worst-case accidents. Rather, CEQ regulations require only assessment of effects of reasonably foreseeable accidents. In accordance with CEQ regulations and DOE guidance, the evaluation of reasonably foreseeable accidents in the EIS considers both high-risk and high-consequence accidents over a range of frequency of occurrences. (See Volume 1, Appendices A through F, section 5.15 and Volume 2, section 5.14.) The high-risk and high-consequence accidents were considered because they produce effects that are very unlikely to be exceeded by severe accidents. Smaller-consequence accidents were considered, particularly if they had a high probability of occurrence, because they could potentially represent a higher risk (risk = probability x consequence) than those lower probability accidents with higher consequences. The EIS shows that the risk to workers and the public from all accidents analyzed would be small for all alternatives considered.

05.11.03 (038) General**COMMENT**

The commentor notes that spent nuclear fuel is dangerous, but that so is gasoline if not handled properly. If gasoline had the same handling requirements as spent nuclear fuel, it would be too expensive to buy.

RESPONSE

DOE agrees that potential consequences from accidents involving some hazardous materials are much greater than those from SNF management.

05.11.03 (039) General**COMMENT**

The commentor states that DOE has not considered impacts from shipboard fires and earthquakes.

RESPONSE

The EIS addresses seismicity in Volume 1, section 5.2.4, accidents in Volume 1, section 5.7.12, and accidents involving shipboard fires in Volume 1, Appendix D, section F-1.4.4. Locations considered for SNF management have emergency action plans and equipment to respond to accidents and other emergencies. Shipboard fires would be included as one of the types of accidents, if applicable to the location. The plans would be updated to cover any new SNF facilities and activities. DOE would coordinate activities with state and local agencies to establish and implement an appropriate emergency response training program for potential accidents for the location. The details of such planning are beyond the scope of the EIS.

5.11.3.1 Not used

5.11.3.2 Not used

5.11.3.3 Miscellaneous

05.11.03.03 (001) Miscellaneous

COMMENT

The commentor states that the source terms in Volume 2, Table 4.7.1 are constants and wants to know the range of values over a 10-year period. Additionally the commentor requests projection of source terms under postulated abnormal conditions involving several facilities.

RESPONSE

The projection requested by the commentor is provided in Volume 2, Chapter 5, which presents the impacts of the alternatives, including impacts under abnormal and accident conditions.

5.12 Transportation Issues

05.12 (001) Transportation Issues

COMMENT

Commentors object to the shipment of radioactive material because the risk is perceived to be too high. Commentors state that an adequate study of the worst-case accident is needed and a policy is required to publicly fund response team training, and that some longshoremen may refuse to handle high-level waste shipments.

RESPONSE

DOE complies with the DOT regulations for transporting radioactive material. These regulations are designed to protect workers and the public by minimizing the risks associated with transporting radioactive material. The EIS analyzes a full range of alternatives, from no action, which involves extremely limited transport of radioactive material, to centralization, which involves extensive transport of radioactive material. For all alternatives, the potential risks from transportation would be small. This includes the risks associated with maximum reasonably foreseeable accidents. The probabilities and consequences of maximum reasonably foreseeable transportation accidents are discussed and evaluated in Volume I, Appendices D and I. Although the consequences of an accident of this type might be high, the probability of such an accident having high consequences is on the order of one chance in 10 million years, and the consequences of most accidents, including those with a probability of occurring more frequently, would be less than those of the accidents analyzed.

With more than 50 years of radioactive material transportation in the commercial and government sectors, there have been few transportation accidents involving radioactive materials, and these have resulted in little or no release of radioactivity. Nonetheless, emergency response teams are trained and ready throughout the United States to respond quickly in the event of a transportation accident. DOE recognizes the importance of preparedness for potential accidents involving SNF transportation. DOE, DOT, and FEMA provide training and materials to local emergency responders to prepare them to handle accidents properly. DOE provides for Radiological Assistance Program teams, which consist of trained experts equipped and prepared to quickly respond to an accident, and assist local emergency response personnel if requested. This response network, along with other preventive measures, such as shipping container design and testing, and adherence to stringent regulations, supports the continued safe shipping of SNF.

SNF shipping containers that could be handled by longshore workers are designed to meet national and international standards for safety, including radiation levels at the outside of the containers.

This EIS analyzes transportation from ports of entry. The potential for radiological exposures to longshore workers is within the scope of the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel*.

05.12 (002) Transportation Issues

COMMENT

One commentor states a definition of the term "general transportation" in Appendix I could not be found.

RESPONSE

The term "general transportation" is discussed in Volume 1, Appendix I, section 1-9.1 and refers to "transportation activities that take place that are unrelated to the alternatives evaluated in this EIS or to reasonably foreseeable actions. Examples of these activities are shipments of radiopharmaceuticals to nuclear medicine laboratories and shipments of commercial low-level radioactive waste to commercial disposal facilities." The activities described by general transportation activities are those that occur independent of DOE work and over which DOE has no control.

05.12 (003) Transportation Issues

COMMENT

The commentor states that the EIS should address the condition of the transportation infrastructure (e.g., rail lines, crossings, bridges, and tunnels).

RESPONSE

Adequate rail lines, crossings, bridges, and tunnels exist to support the SNF transportation. The shipment of SNF requires no special transportation infrastructure that is not also necessary for safe transport of commodities in the United States today. DOT is the regulatory agency responsible for establishing and enforcing the standards for the transportation infrastructure.

05.12 (005) Transportation Issues**COMMENT**

The commentor states that DOE should halt shipments of spent nuclear fuel during inclement weather.

RESPONSE

Although the comment is not specifically related to the effects of weather on SNF transport, the same response applies for radioactive material transportation. DOT requirements for containers and the EIS modeling codes used to analyze potential impacts of transportation account for such things as bad weather, accidents, natural phenomenon, etc.

05.12 (006) Transportation Issues**COMMENT**

The commentor states that the EIS used a generic approach to the mitigation of impacts and states that the secondary route comparison factors discussed in the mitigation section are critical in some rural sections of Idaho. The commentor also notes that TRANSAX-92 demonstrated that state corridor emergency responders are not prepared for radiological incidents.

RESPONSE

The primary and secondary route comparison factors discussed in the mitigation section were developed by DOT; DOE and the Navy believe them to be accurate. Pursuant to 49 CFR 397.67, motor carriers transporting hazardous material required to be placarded or marked in accordance with 49 CFR 177.823 and not subject to a nonradioactive hazardous material routing designation, shall operate the vehicle over routes that do not go through heavily populated areas, places where crowds are assembled, tunnels, narrow streets, or alleys, except where the motor carrier determines that: (1) there is no practicable alternative; (2) a reasonable deviation is necessary to reach terminals, points of loading and unloading, facilities for food, fuel, repairs, rest, or a safe haven; or (3) a reasonable deviation is required by emergency conditions, such as a detour that has been established by a highway authority, or a situation exists where a law enforcement official requires the drivers to take an alternate route.

DOE participates with other Federal, state, and local authorities to sponsor and fund various emergency response training courses throughout the United States. These courses are provided for the benefit of state and local authorities responsible for public safety and emergency response to natural disasters and man-made accidents, including those involving nuclear materials. The government has organized, trained, and equipped state and Federal emergency response teams that are quickly available to assist local authorities in the event of an emergency.

05.12 (007) Transportation Issues

COMMENT

The commentor states that DOE does not have a good record with respect to building apparatus such as nuclear fuel casks and waste repositories, and getting the cooperation of the states within a very short period of time.

RESPONSE

The commentor is referring to lengthy delays in the construction and opening of the Yucca Mountain and Waste Isolation Pilot Plant sites, as well as the 5- to-10-year time period for designing and certifying radioactive material shipping casks.

DOE operates within the framework of Federal regulations and DOE policy, which are designed for public and stakeholder involvement when procuring shipping casks or constructing new facilities. Unfortunately, such a process is costly and time consuming; however, DOE feels it is a process that affords the best opportunity to obtain facilities or apparatus designed with the highest standards of safety, utility, and public/stakeholder input into the process.

05.12 (008) Transportation Issues

COMMENT

The commentor states that DOE did not address the environmental impacts of moving spent nuclear fuel.

RESPONSE

Volume I, Appendices D and I analyze the transportation of SNF. NEPA, 42 USC Section 4321 et. seq., and CEQ regulations at 40 CFR Part 1500 et. seq. require that an EIS describe the purpose and need for the proposed action; alternatives, including no action; the affected environment; and the environmental consequences associated with the proposed action and alternatives. Volumes 1 and 2 of this EIS meet these requirements. In each volume, Chapter 2 describes the purpose and need for the proposed action; Chapter 3 describes the alternatives being considered; Chapter 4 describes the affected environment; and Chapter 5 describes the environmental consequences.

Input was solicited from the public during a 90-day public comment period, which allowed commentors to send written comments, give oral comments and send a facsimile by a toll-free telephone line, or attend one or more of the 33 public hearings held in 20 locations around the United States.

All supporting documents referenced in the EIS are on file and are available to the public.

05.12 (010) Transportation Issues

COMMENT

The commentor requests specific information on the number of 40-year-period spent nuclear fuel shipments, highway routes affected, and populations exposed to risks.

RESPONSE

Specific information on the number of SNF shipments is in Volume I, Appendices D and I.

The HIGHWAY computer code predicts highway routes for transporting radioactive materials within the United States. The HIGHWAY code currently describes approximately 240,000 miles of roads. A complete description of the interstate highway system, United States highways, most of the principal state highways, and a number of local and community highways are identified in the database. The HIGHWAY computer code calculates routes that maximize the use of interstate highways. This feature allows the user to predict routes for shipping radioactive materials that conform to DOT regulations (as specified in 49 CFR Part 177). The routes calculated conform to applicable guidelines and regulations; therefore, they represent routes that could be used.

The impacts of transportation for all programmatic alternatives considered in this EIS would be small.

05.12 (011) Transportation Issues

COMMENT

The commentor questions the need for cross-country shipments under the Regionalization by geography alternative.

RESPONSE

For the Regionalization by geography alternative, all existing and future SNF would be shipped to the destination site without crossing the Mississippi River. However, there would be cross-country shipments of Naval SNF. To examine all Naval SNF in a cost effective manner, examination would occur at one location. Because the Navy defuels and refuels ships at shipyards on the east and west coasts, cross-country shipments would be necessary for the fuel to reach the examination and storage site. Overviews of the alternatives analyzed in the EIS are found in Volume I, Chapter 3.

05.12 (012) Transportation Issues

COMMENT

The commentor states that a history of the movement of spent nuclear fuel is not in the EIS and provides a specific example that gives the understanding that all previous shipments of spent nuclear fuel brought to the Savannah River Site from Newport News/Hampton Roads have been transported by truck, representing many hundreds of shipments. Yet, the discussion of movements out of the Newport News/Hampton Roads area in Volume 1, section 4.6.2 mentions only 10 shipments, each conducted by rail.

RESPONSE

The EIS conducted a comprehensive transportation cumulative impacts analysis, evaluating the historical, present, and future or projected shipments of radioactive material, which includes radioactive waste and SNF. Dose information is contained in Volume 1, Appendix I. The transportation cumulative impacts analyses includes historical shipments of SNF and is found in Volume 1, Appendix D for Naval SNF and Appendix I for non-Naval SNF.

The example given by the commentor refers to Naval SNF shipments, which travel by rail. The additional references provided in Table I-58 contain the historical data for non-Naval SNF shipments, which predominantly travel by truck.

05.12 (013) Transportation Issues

COMMENT

The commentor suggests specific information regarding Fort St. Vrain fuel, number of shipments, destination facility, and inventory be added to the Final EIS.

RESPONSE

The EIS already contains this information in either Volume 1 or Volume 2. Volume 1 reference from a 1994 letter to distribution from T.L. Wichmann, *Spent Nuclear Fuel Inventory Data*, gives specific information regarding quantity of Fort St. Vrain fuel currently stored at INEL and the quantity that could be received in the future. The quantity that could be received could be stored at a specific location, but may be managed in other facilities and in other ways. The EIS has bounded the information by the assumptions and methodologies used in calculating the individual and cumulative impacts. Because the EIS is considered to bound the information suggested by the commentor, the EIS has not been changed.

05.12 (014) Transportation Issues

COMMENT

The commentor states that the EIS concentrates on the radiological impacts of transportation to the exclusion of the other hazardous materials.

RESPONSE

Volume 2, section 5.11 discusses the transportation of both hazardous and radioactive materials for both incident-free and accident cases. In incident-free transportation, there are no emissions from materials being transported, so the only hazardous materials emissions considered were those from particulates and sulfur dioxide present in urban population zones. The methodologies for determining transportation impacts associated with hazardous materials transportation accidents are discussed in Volume 2, section 5.11.1. The analysis of the maximum reasonably foreseeable case truck accident scenario for all alternatives is in Volume 2, Table 5.11-15. The impacts of a hazardous material transportation accident are low under all alternatives.

05.12 (015) Transportation Issues

COMMENT

The commentor states that the EIS should discuss the impacts of the increase in highway traffic and the associated roadway congestion, as well as the impacts of increased rail traffic.

RESPONSE

A discussion of highway and rail transportation impacts and potential accident impacts is in the sections of the EIS entitled Traffic and Transportation, Transportation, and Offsite Transportation of SNF. Based on public and agency comments, DOE has modified descriptions of on-site traffic patterns where appropriate. DOE complies with the DOT requirements for off-site transportation of SNF, including the use of licensed shipping containers that meet DOT performance requirements. As a result, the potential for exposing the public to radiation hazards is extremely low. DOE further minimizes accident risks by following training and route-selection guidelines and uses other procedural controls for hazardous and radioactive shipments. In the unlikely event of an accident, DOE and local governmental authorities will implement emergency response measures. As described in the EIS Summary, Public and Worker Health Effects section, the overall risk from transportation would be small.

See also the response to comment 05.12 (003).

05.12 (016) Transportation Issues

COMMENT

The commentor expresses concern that the EIS inadequately addresses the nonradiological impacts of transportation activities, and questions the adequacy of the 1982 reference document used in the EIS.

RESPONSE

Incident-free nonradiological fatalities were estimated using unit risk factors. These unit risk factors account for the fatalities associated with exhaust emissions, but the distances used to estimate the impacts must be doubled to reflect the round-trip distance, because these impacts occur whether or not the shipment contains radioactive material. Two sets of data were evaluated: 1) data from *Non-radiological Impacts of Transporting Radioactive Material* and 2) data from the *Motor Vehicle-Related Air Toxics Study*. In *Non-radiological Impacts of Transporting Radioactive Material*, the nonradiological unit risk factor for trucks was 1.0×10^{-7} fatalities per kilometer, and the nonradiological unit risk factor for trains was 1.3×10^{-7} fatalities per kilometer. These unit risk factors are applicable only in urban areas. In *Motor Vehicle-Related Air Toxics Study* the unit risk factor was calculated to be 7.2×10^{-11} fatalities per kilometer; this unit risk factor is applicable in all areas (i.e., rural, suburban, and urban). Based on the routes analyzed in this EIS, the unit risk factors from *Non-radiological Impacts of Transporting Radioactive Material* were found to overestimate impacts by about 20 or 30 times relative to the unit risk factors from *Motor Vehicle-Related Air Toxics Study*. Therefore, the unit risk factors from *Non-radiological Impacts of Transporting Radioactive Material* were used as a conservative estimate of the incident-free nonradiological fatalities presented in this EIS. Unit risk factors from *Non-radiological Impacts of Transporting Radioactive Material* account for all fatalities, not just cancer fatalities. Other effects of chronic exposure to diesel exhaust emissions have been followed in occupationally exposed workers, but these data are not sufficient to make a correlation between the effects and the exposure experienced (*Motor Vehicle-Related Air Toxics Study*). Therefore, these impacts were not estimated in the EIS.

5.12.1 Not used

5.12.2 Rail

05.12.02 (001) Rail

COMMENT

The commentor states that the Mackay Branch has been abandoned by the Union Pacific Railroad and there is an application before the Interstate Commerce Commission to abandon the Scoville Branch from Arco, Idaho, to Mile Post 43.

RESPONSE

The map showing the Mackay Branch will be corrected to reflect abandonments by the Union Pacific Railroad.

5.12.3 Waterborne**05.12.03 (001) Waterborne****COMMENT**

The commentor states that purpose-built ships would greatly add to the safety of handling foreign research reactor spent nuclear fuel shipped to ports in the United States.

RESPONSE

The risks associated with the transport by ship of FRR SNF and its handling at U.S. ports, including purpose-built ships, are being evaluated in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft)*.

05.12.03 (002) Waterborne**COMMENT**

Commentors question the choice of ports of entry to the United States that are analyzed in the EIS and state that the EIS does not consider transportation or radioactive material handling impacts, such as shipboard fires, at port facilities.

RESPONSE

The analysis of impacts at port facilities and nearby communities, the specific port selection process, and the overseas transportation of FRR SNF to United States ports is being addressed in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel (Draft)* (FRR EIS). Only the impacts of transportation of SNF from these ports of entry to DOE facilities are analyzed in this EIS.

The criteria used to choose the ports of entry are outlined in the Notice of Intent for the FRR EIS (*Federal Register* Vol. 58, No. 202, October 21, 1993, pages 54336-54340). These criteria included: (a) adequacy of harbor and dock characteristics to satisfy the cask-carrying ship requirements, (b) availability of safe and secure lag storage, (c) adequacy of overland transportation systems from ports to the storage sites, (d) experience in safe and secure handling of hazardous cargo, (e) emergency preparedness status at the port and nearby communities, and (f) proximity to the proposed storage sites. A range of alternative ports will also be analyzed in the FRR EIS. The decision regarding port selection will not be made until both this EIS and the FRR EIS are completed.

In addition, in response to public comments, this EIS discusses the consequences of a shipping accident that results in a shipboard fire approximately 2 miles from Seattle (Volume I, Appendix D, section F).

05.12.03 (003) Waterborne

COMMENT

The commentor is concerned that Puget Sound will be a possible point of entry for hundreds of shipments of radioactive material and that the DOE fails to recognize the danger for this urban area.

RESPONSE

The analysis of impacts at port facilities and nearby communities, the specific port selection process, and the overseas transportation of FRR SNF to United States ports is being addressed in the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft) (FRR EIS). Only the impacts of transportation of SNF from these ports of entry to DOE facilities are analyzed in this EIS.

The criteria used to choose the ports of entry are outlined in the Notice of Intent for the FRR EIS (*Federal Register* Vol. 58, No. 202, October 21, 1993, pages 54336-54340). These criteria included: (a) adequacy of harbor and dock characteristics to satisfy the cask-carrying ship requirements, (b) availability of safe and secure lag storage, (c) adequacy of overland transportation systems from ports to the storage sites, (d) experience in safe and secure handling of hazardous cargo, (e) emergency preparedness status at the port and nearby communities, and (f) proximity to the proposed storage sites. A range of alternative ports will also be analyzed in the FRR EIS. The decision regarding port selection will not be made until both this EIS and the FRR EIS are completed.

In addition, in response to public comments, this EIS discusses the consequences of a shipping accident that results in a shipboard fire approximately 2 miles from Seattle (Volume I, Appendix D, section F).

5.12.4 Packaging

05.12.04 (001) Packaging

COMMENT

A commentor raises the issue of the proposed movement of nuclear waste from Washington, DC, to Tennessee in what his sources indicate are leaky containers.

RESPONSE

DOE is not proposing to ship nuclear waste from Washington, DC, and believes that the commentor may have Washington state or other states with DOE facilities in mind. DOE is evaluating in this EIS several

alternatives that would entail transporting SNF to ORR for storage. Any transportation would be conducted in compliance with DOT regulations using NRC transportation standards.

05.12.04 (002) Packaging

COMMENT

A commentor provides recommendations for the packaging of radioactive materials for transportation.

RESPONSE

DOE complies with the applicable requirements of DOT regulations covering the packaging of radioactive materials. DOE has conducted analyses using representative packaging for radioactive materials in the EIS; if an alternative is chosen that requires transportation of radioactive materials, the recommendations made by the commentor will be considered. These analyses are adequate for comparison of alternatives under consideration in this programmatic EIS.

05.12.04 (003) Packaging

COMMENT

The commentor believes the EIS does not adequately address the potential health effects from external radiation from spent nuclear fuel casks.

RESPONSE

Volume 1, Appendices D and I provide analyses of potential health effects from external radiation associated with SNF transportation. These analyses show that the health effects from external radiation under all alternatives considered in the programmatic EIS would be small.

5.12.5 Routes

05.12.05 (001) Routes

COMMENT

The commentor states that the EIS should analyze a more realistic scenario of transportation than either all shipments by truck or all shipments by rail. A combination of the two forms of transportation should be analyzed.

RESPONSE

The assumption of all shipments by truck or all shipments by rail serves to produce analytical results representing the limits of potential transportation impacts; any combination of truck and rail shipments would have impacts between these extremes. Therefore, additional analyses are not required. In each case of transport by truck or rail, the potential impacts would be small.

05.12.05 (002) Routes

COMMENT

The commentor states that the description of the regional transportation infrastructure around the Hanford Site implied that Interstate 90 would be used for shipping campaigns, and that the shipping campaigns in northern Idaho are not considered in the EIS.

RESPONSE

The description of the regional transportation infrastructure is a discussion of the existing transportation environment at and around the Hanford Site; it is not meant to imply that Interstate 90 may be used for shipping campaigns. The analysis of transportation risks is provided in Volume 1, Appendices D and I. These analyses cover all appropriate shipping routes and show that the risks for all of the programmatic alternatives considered would be small.

5.12.6 Regulations

05.12.06 (001) Regulations

COMMENT

One commentor questions the regulatory status of on-site shipments in noncertified containers.

RESPONSE

The Hazardous Materials Transportation Act applies only to hazardous material shipments conducted "in commerce." A letter written in 1991 from the U.S. Department of Transportation, Research and Special Programs Administration, addresses the definition of the term "in commerce" and the applicability of the Hazardous Materials Transportation Act to shipments conducted on DOE sites. The referenced letter states that shipments conducted in areas to which the general public does not have unrestricted access are not "in commerce" and as such, need not meet the requirements of 49 CFR. The above discussion notwithstanding, DOE has implemented specific procedures, as required by DOE Order 5480.3, *Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes*, which ensures the health and safety of the public and workers are protected during onsite shipments. These procedures include (but are not limited to) speed restrictions, use of escort vehicles, and prior notification of appropriate emergency response personnel that the shipment will take place.

05.12.06 (002) Regulations

COMMENT

Commentors question the adequacy of transportation regulations, including radiation limits, container accident safety requirements, and routing. For example, commentors question the external radiation limits associated with the shipping containers, the ability of a shipping container to withstand fire, and the routing of radioactive material shipments.

RESPONSE

A brief discussion of transportation regulations is in Appendix I of the EIS. DOE follows DOT regulations for shipping radioactive material, which include requirements for external radiation, ability of a shipping container to withstand hypothetical accident conditions (including fire), and transportation routing. These requirements were established by DOT to protect workers and the public and are designed to minimize the risks associated with transporting radioactive material. DOE has no reason to question the adequacy of the DOT regulations. As discussed in the EIS, the risk from transportation would be very small.

The criteria used to choose the ports of entry are outlined in the Notice of Intent for the EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Reactor Spent Nuclear Fuel* (FRR EIS). These criteria included: (a) adequacy of harbor and dock characteristics to satisfy the cask-carrying ship requirements, (b) availability of safe and secure lag storage, (c) adequacy of overland transportation systems from ports to the storage sites, (d) experience in safe and secure handling of hazardous cargo, (e) emergency preparedness status at the port and nearby communities, and (f) proximity to the proposed storage sites. A range of alternative ports will also be analyzed in the FRR EIS. The decision regarding port selection will not be made until both this EIS and the FRR EIS are completed.

05.12.06 (003) Regulations

COMMENT

Commentors ask about notification and inspection of radioactive materials shipments. In particular, commentors question the inspection of foreign research reactor spent nuclear fuel.

RESPONSE

The DOE complies with all DOT regulations regarding notification and inspection of radioactive materials shipments. The inspection of FRR SNF before it reaches the United States would be the responsibility of the shipper, who must certify that the radioactive material is in proper condition for transport. This includes compliance with external radiation and contamination requirements.

05.12.06 (004) Regulations

COMMENT

The commentor states that the EIS has not acknowledged the right of Indian Tribes to regulate transportation of spent nuclear fuel and other hazardous materials across Tribal lands under the Hazardous Materials Transportation Act.

RESPONSE

DOE is and always has been committed to safe and secure transportation of SNF to appropriate facilities for storage or other management activities. Consistent with this commitment, DOE will comply with applicable requirements promulgated by a state, a political subdivision, or an Indian Tribe that is authorized and has not been preempted by the Hazardous Materials Transportation Act, Atomic Energy Act, or other applicable Federal law.

5.12.7 Not used

5.12.7.1 Accidents

05.12.07.01 (001) Accidents

COMMENT

Commentors state that the consequences of the maximum reasonably foreseeable transportation accident are provided only for a rural population zone. The commentor asks about the consequences if the same accident occurred in an urban population zone.

RESPONSE

NEPA requires that an EIS evaluate reasonably foreseeable impacts from proposed actions. For this EIS, an accident is considered reasonably foreseeable if it has a probability of at least 1×10^{-7} per year, or one chance in 10 million years. Factors that affect accident probability include state-specific accident rates; accidents per kilometer; the fraction of accidents that occur in rural, suburban, and urban population zones; the probability that an accident will be of a certain severity; and the annual shipping mileage in rural, suburban, and urban population zones. Weather conditions also affect the probability of accident consequences because stable, worst-case, weather conditions are only about one-tenth as likely as neutral, average weather conditions.

Volume 1, Appendix I, Table I-41 summarizes the maximum reasonably foreseeable transportation accident for the Regionalization by geography alternative, in which all SNF is sent to the Hanford and SRS. The footnotes to the table state that the maximum reasonably foreseeable accident occurs in a suburban population zone, not a rural zone. If this same accident were postulated to occur in an urban

population zone, the accident probability would be less than 1×10^{-7} per year, which makes it so unlikely that the scenario was not analyzed.

Volume I, Appendix I, Table I-31 summarizes the maximum reasonably foreseeable transportation accident for the Decentralization alternative. Footnote "a" to the table states that the maximum reasonably foreseeable accident occurs in a rural population zone. If an accident of equal severity were postulated to occur in an urban or suburban population zone, the accident probability has been calculated to be less than 1×10^{-7} per year, which makes it so unlikely that the scenario was not analyzed. The methodology used to calculate the probability of rail transportation accidents is summarized in Appendix I.

Volume I, Appendix I, Table I-55, summarizes the maximum reasonably foreseeable transportation accident for the Centralization alternative at ORR. The table shows that under neutral weather conditions, the maximum reasonably foreseeable transportation accident could occur in an urban area with a probability of 1×10^{-7} per year. If the accident occurred under stable weather conditions, the probability would be one-tenth of the probability under neutral weather, or 1×10^{-8} per year, which is less than one chance in 10 million per year. Calculations documented in the references also show that an accident of equal severity in a suburban area also has a probability of less than 1×10^{-7} per year. Only in the rural population zone, because most of the distance traveled by the shipments would be in rural areas, has a probability greater than 1×10^{-7} per year for an accident of maximum severity to occur under stable, worst-case, weather conditions. Other less severe accidents would have a probability of less than one chance in 10 million per year in urban and suburban areas under stable, worst-case, weather conditions, but their consequences would be less than the results shown in Table I-55.

The consequences of transportation accidents in rural areas include ingestion doses because this is a predominantly agricultural area where residents most likely eat what they produce from the land. This is in contrast to the consequences for transportation accidents in urban and suburban areas, which do not include ingestion doses. Residents of these areas are most likely not involved in agriculture and do not produce what they eat at their resident location. Therefore, the consequences of transportation accidents in rural areas may be greater than the consequences in suburban or urban areas, even though the population densities in the later areas are higher.

05.12.07.01 (002) Accidents

COMMENT

A commentor states no emergency response systems are set up to respond to transportation accidents involving spent nuclear fuel.

RESPONSE

DOE has developed and implemented emergency response systems to respond to transportation accidents involving DOE radioactive materials and SNF. This is discussed in Volume 1, Appendix I, section 6. To date, accidents involving SNF have been rare. In the event of an accident involving an SNF shipment in transit, local fire and police organizations are first to respond. DOE, DOT, and FEMA provide training and training materials to local emergency responders to prepare them to handle accidents properly. DOE provides Radiological Assistance Program teams, which consist of trained experts equipped and prepared to quickly respond to an accident and assist local emergency response personnel if requested. This response network, along with preventive measures, such as shipping container design and testing, and adherence to stringent regulations, supports the continued safe shipping of SNF.

DOE uses the Transcom satellite tracking system for each of its SNF shipments. This system uses a transponder located on the trailer with the shipment that relays continuous position of the shipment via satellite to computer terminals at DOE facilities around the country. In the unlikely event a problem occurs with a shipment, the exact position of the shipment can be immediately determined remotely in order to dispatch response teams and aid in assessing the situation.

5.12.8 Need

05.12.08 (001) Need

COMMENT

Commentors note that the future selection of a national central repository would require further shipments of spent nuclear fuel and that analyses of these shipments should be included in the EIS. Additionally, the commentors state that the public has not been properly sensitized to the full transportation issues.

RESPONSE

Further shipments of SNF might be needed when a decision is made regarding ultimate disposition in a permanent repository. Assessment of the impacts of these shipments is not included in this EIS because the method for ultimate disposition has not been selected and such analyses would be premature. Volume 1 describes the alternatives for SNF management until 2035. This amount of time may be

required to make and implement a decision for ultimate disposition of SNF. DOE has evaluated in the EIS a range of reasonable alternatives for safely managing SNF during the period 1995 to 2035.

To inform the public concerning SNF transportation issues, this EIS evaluates the transportation impacts for a reasonable range of alternatives. The alternatives vary from no action, involving limited transport of radioactive material, to centralization, which involves extensive transport of radioactive material. The analyses in the EIS show that the potential risks from transportation of SNF would be small for all the alternatives considered. Minimizing transportation is one of the factors that has been considered in the DOE decision-making process.

05.12.08 (002) Need

COMMENT

The commentor questions why and how these waste products must be moved.

RESPONSE

Transportation of SNF and radioactive wastes may be necessary to implement alternatives for safely and effectively managing these materials during the period evaluated by the EIS. The need for these activities is discussed in Volume I, Chapters 1 and 2, and in Volume 2, Chapters 1 and 2. Most SNF and radioactive wastes would be transported by truck or train using shipping containers that satisfy all applicable requirements of DOT and NRC. DOE follows DOT regulations for the shipment of radioactive material, which include requirements for routing, external radiation limits, and the ability of a shipping container to withstand hypothetical accident conditions, including fire. A brief discussion of transportation regulations is in Volume I, Appendix I.

5.12.8.1 Cost/Shell Game

05.12.08.01 (001) Cost/Shell Game

COMMENT

The commentor notes that the increased shipments required to centralize spent nuclear fuel at the Nevada Test Site matter because of the low risk of transportation and the eventual need to transport the spent fuel to Nevada for ultimate disposition at Yucca Mountain.

RESPONSE

The commentor is correct that for all alternatives, the potential risks from transportation would be very small. It is true that centralization at NTS could provide interim storage of SNF in close proximity to the potential site of ultimate disposition. DOE has considered these, as well as other factors, in the

identification of a preferred alternative and the ROD. See also the response to comment 04.04 (008) on DOE's preferred alternative.

5.13 Emergency Preparedness

05.13 (001) Emergency Preparedness

COMMENT

Commentors state that DOE has not agreed to pay for monitoring, training, and equipping local emergency responders at ports of entry and along shipping routes. One commentor states that the EIS should establish DOE responsibility for training emergency responders to DOE.

RESPONSE

As a shipper of radioactive materials, DOE is responsible for complying with the regulations applicable to the safety of its shipments. This includes assisting state, tribal, and local emergency responders if an accident occurs. DOE's Transportation Emergency Preparedness Program includes initiatives on planning and training, exercises, and technical assistance to state, tribal, and local governments.

DOE participates with other Federal, state, and local authorities to sponsor and fund various emergency response training courses throughout the United States. These courses are usually provided for the benefit of local, state, and tribal authorities responsible for public safety and emergency response to natural disasters or man-made accidents. The funds for these training sessions come from Federal grants or direct allocations of state tax dollars. Trainees provide their own transportation to these sessions and, generally provide their own emergency response equipment; however, Federal assistance is provided at times. The Federal Government has organized, trained, and equipped state and Federal regional emergency response teams, which are quickly available to assist local authorities in the event of an emergency.

5.13.1 Facilities

05.13.01 (001) Facilities

COMMENT

The commentor wants to know the mechanics of dissemination of information to the public when incidents occur at the Idaho National Engineering Laboratory.

RESPONSE

The DOE Idaho Operations Office maintains a Warning Communications Center (WCC) that is manned 24 hours a day, 7 days a week. WCC personnel operate in four teams, with each team on duty 1 week at

a time. Incident information is immediately passed to the WCC by INEL personnel and others. Depending on the nature of the incident, different media are informed. Incidents such as car collisions that impact traffic are sent to local radio stations only. With radioactive materials releases that could affect the public, however, information is immediately sent to not only local radio stations, but to all state television stations, major state radio stations, newspapers, and public officials. Information is updated frequently, and during an incident, additional personnel are brought in to answer questions from public officials, the press, and the general public.

05.13.01 (002) Facilities

COMMENT

Commentors propose that DOE inform all those living within a 500-mile radius of nuclear waste storage sites of the wastes generated and stored nearby and the significant danger these wastes represent to all life.

RESPONSE

The action proposed by the commentors is being accomplished by the preparation and publication of this EIS and other site-specific EISs that will be prepared to assess the environmental impacts of SNF and radioactive waste management at DOE sites. SNF and radioactive waste management pose risks that must be understood and minimized. This EIS evaluates these hazards and the engineered safeguards and management practices designed to reduce or eliminate the hazards. Sites have emergency action plans and equipment to respond to accidents and other emergencies. DOE requirements for emergency response preparedness are contained in DOE Orders 5500.1B, 2B, and 3A (*Emergency Management System; Emergency Categories, Classes, and Notification and Reporting Requirements; and Planning and Preparedness for Operational Emergencies*, respectively). DOE emergency notification requirements are based on the Emergency Response Planning Zone determined for each facility based on hazard assessments for the facilities. DOE notifies out to the distance required by the Emergency Response Planning Zone and applicable state and local requirements.

05.13.01 (003) Facilities

COMMENT

The commentor points out that, in the event of an incident involving spent nuclear fuel at the Idaho National Engineering Laboratory, large numbers of highly trained personnel are always on hand to combat the effect of any incidents.

RESPONSE

The commentor is correct. INEL's highly trained work force includes a broad range of technical disciplines and skills; this expertise, knowledge of plant systems and procedures, and training in

emergency response actions and priorities are key elements in the control of emergency situations and the mitigation of impacts.

05.13.01 (004) Facilities

COMMENT

The commentor questions whether statements related to the evacuation time for motorists at the nearest public highway to the Idaho National Engineering Laboratory are substantiated.

RESPONSE

The commentor is referring to a statement in Volume 2 that a motorist at the nearest public access highway could be evacuated in 2 hours. In the event of an accident at an INEL facility that results in an airborne release to the environment, normal precautionary actions include establishment of road blocks on affected portions of public highways traversing the site. The road blocks prevent members of the public from entering the affected area; site security personnel would also patrol the affected portion of highway to ensure no motorists remained after the road blocks were established. Evaluations of site security response times indicate that these actions can be accomplished well within the 2-hour period assumed in the Volume 2 accident analysis.

5.13.2 Transportation

05.13.02 (002) Transportation

COMMENT

The commentor suggests that switching from truck to train for transportation of spent nuclear fuel might result in inadequate emergency preparedness along the new routes.

RESPONSE

The EIS addresses accidents in Volume 1, section 5.7.12. Locations considered for SNF management have emergency action plans and equipment to respond to accidents and other emergencies. The plans would be updated to cover any new SNF facilities and activities. DOE would coordinate activities with state and local agencies to establish and implement an appropriate emergency response training program for potential accidents. The details of such planning are beyond the scope of the EIS.

05.13.02 (004) Transportation

COMMENT

The commentor states that the Shoshone-Bannock Tribes have limited emergency response personnel and lack any equipment in the event of an accident on the Fort Hall Reservation.

RESPONSE

In the event of an accident involving a hazardous or radioactive material shipment on the Fort Hall Reservation, local fire and police organizations are first to respond. DOE, DOT, and FEMA provide training and training materials to local emergency responders to prepare them to handle accidents properly. If the accident involves a release of hazardous or radioactive material, assistance is available on short notice from the State Hazardous Materials Team located 15 minutes away in Pocatello. DOE provides for Radiological Assistance Program teams consisting of trained experts equipped and prepared to quickly respond to a radiological accident and assist local emergency response personnel, if requested. The DOE response team could respond to a request for assistance from the Tribes in much less than 4 hours, based on documented response times to other locations such as Dubois, Idaho, and the State of Oregon. Although the accident analysis presented in the EIS takes no credit for emergency response measures, the impacts of the potential accidents would be small.

05.13.02 (005) Transportation**COMMENT**

The commentors state that emergency response systems are not set up to respond to transportation accidents involving spent nuclear fuel.

RESPONSE

To date, accidents involving SNF have been rare, but they do occur; however, no significant releases have resulted from any of the accidents during SNF transportation. In the event of an accident involving an SNF shipment in transit, local fire and police organizations are first to respond. DOE, DOT, and FEMA provide training and training materials to local emergency responders to prepare them to handle accidents properly. DOE provides for Radiological Assistance Program teams, which consist of trained experts equipped and prepared to quickly respond to an accident and assist local emergency response personnel if requested. This response network, along with preventive measures, such as shipping container design and testing and adherence to stringent regulations, supports the continued safe shipping of SNF.

05.13.02 (006) Transportation**COMMENT**

The commentor states that DOE needs to define a position regarding the funding of local emergency response in states along spent nuclear fuel transportation corridors.

RESPONSE

DOE recognizes the importance of preparedness for potential accidents involving transportation of SNF. Currently, training is available on a limited basis at the awareness level for first responders. DOE is

working with state and local officials through the Transportation External Coordination Working Group to develop a national approach for training and technical assistance.

5.13.3 Not used

5.13.4 Infrastructure/Coordination

05.13.04 (001) Infrastructure/Coordination

COMMENT

Commentors question the adequacy of notification of civil agencies and inspection of shipments of radioactive materials. In particular, some commentors express concern about the inspection of foreign research reactor spent nuclear fuel.

RESPONSE

DOE complies with DOT regulations and, when applicable, the International Atomic Energy Agency regulations regarding notification and inspection of radioactive material shipments. Foreign shippers transporting material to ultimate destinations within the United States are also required to comply with the regulations. Inspection of FRR SNF before it reaches the United States is the responsibility of the shipper, who must certify that the radioactive material is in proper condition for transport. This includes compliance with external radiation and contamination requirements.

The Naval Nuclear Propulsion Program does not announce the times or routes of shipments to make it more difficult for terrorists, saboteurs, or hijackers to plan and execute an attack on these shipments.

This is in accordance with Federal Government policy and regulations governing such shipments. The Navy's policy on notification is also in full compliance with the applicable state and Federal regulations for such shipments containing highly enriched weapons-grade uranium.

05.13.04 (002) Infrastructure/Coordination

COMMENT

The commentor requests that DOE consider Governor Campbell's request for assistance with South Carolina's emergency response capability because of the shipment of foreign research reactor spent nuclear fuel within the state.

RESPONSE

DOE responded to former Governor Campbell's request by providing funds to assist with South Carolina's emergency response capability.

5.14 Not used

5.15 Socioeconomics

05.15 (001) Socioeconomics

COMMENT

The commentor states that the negative public perception of spent nuclear fuel storage facilities at the Oak Ridge Reservation could lead to rejection by certain persons or businesses of the nearby community as a suitable place to live or conduct business. That rejection would have a corresponding negative economic impact on the community.

RESPONSE

Volume 1, Appendix F, Part Three, section 5.3 discusses the socioeconomic impacts of the EIS alternatives on the region of influence around ORR. Because the actual environmental impacts associated with SNF management under all alternatives considered in the EIS would be small, there is no reason to believe that storage or examination of SNF at any of the locations evaluated would have any adverse effect on the local economy.

05.15 (002) Socioeconomics

COMMENT

Commentors state they are concerned about the loss of spent nuclear fuel management jobs under any of the alternatives.

RESPONSE

Employment and job issues are discussed in Volume 1, Chapter 5 and site-specific Appendices A through F, and in Volume 2, Chapters 4 and 5. These sections discuss direct and indirect job creation and impacts on the labor force of affected communities. The EIS Summary section Spent Nuclear Fuel-Related Employment concludes that employment-related impacts would be small for all the alternatives considered.

05.15 (003) Socioeconomics

COMMENT

Commentors suggest looking at clean energy sources and toward alternative jobs that would be generated.

RESPONSE

The development of clean energy sources and the associated new jobs and employment opportunities are not within the scope of this EIS.

05.15 (005) Socioeconomics

COMMENT

Commentors state that the EIS socioeconomic analysis should include effects on local property values, subsequent effects on the tax base, and the effects on the effort to diversify the local economy.

RESPONSE

Because the environmental impacts associated with SNF management under all alternatives would be small, there is no reason to believe that storage or examination of SNF at any location evaluated would have a discernible effect on local property values, as described where appropriate in Volume 1, Appendices A through F, and Volume 2, section 5.3. Changes in the economic conditions under any of the alternatives considered would be small relative to the local economies of the potential sites and would not effect long-term housing demand and property values. Consequently, impacts on the local tax base and any efforts to diversify local economies would be small.

05.15 (006) Socioeconomics

COMMENT

The commentor notes that in addition to the four county school districts, there are city school districts in Oak Ridge and Harriman, Tennessee.

RESPONSE

The average daily memberships for city school districts, such as Oak Ridge and Harriman, are included in the total average daily membership presented for the four county school districts in Volume 1, Appendix F, Part Three, section 4.3.3.

05.15 (007) Socioeconomics

COMMENT

The commentor states that the EIS should include a more detailed socioeconomic analysis for Nye and Clark Counties in Nevada, including consideration of the impact of this project in conjunction with other activities planned for the Nevada Test Site.

RESPONSE

The EIS, Volume 1, Appendix F, Part Two, section 5.16, presents the potential cumulative impacts from the proposed SNF management facilities. The approach for analysis in Volume 1, Appendix F, Part Two, section 5.3, is adequate for comparing alternatives in a programmatic EIS.

05.15 (008) Socioeconomics**COMMENT**

The commentor states that the environmental and health risks associated with nuclear waste storage outweigh any economic benefit.

RESPONSE

Volume 1, section 5.3 and Volume 2, section 5.15 of the EIS evaluate potential impacts to the off-site public from both radiological and nonradiological hazards. The analyses show that the impacts from all alternatives would be small.

05.15 (009) Socioeconomics**COMMENT**

The commentor is concerned that the unique situation of the Shoshone-Bannock Tribes and/or the Fort Hall Reservation is not discussed. The assumed migration rates fail to consider the interests of the Tribes or Reservation, and greater household sizes on the Reservation must be addressed in the EIS. In addition, socioeconomic analysis should treat the Reservation as a separate entity due to the markedly higher unemployment rate on the Reservation and because 70 percent of the food each resident consumes is acquired by hunting and gathering.

RESPONSE

The purpose of this EIS is to analyze the potential impacts related to the alternatives. Impacts related to changes in baseline conditions are addressed in general to support the impact analysis. However, there would be no significant impacts to the socioeconomic resources of the region of influence as a result of the changes in regional economic, transportation, health, accidents, or environmental conditions induced by the SNF management alternatives at the potential sites or environmental restoration and waste management program alternatives at the INEL. Therefore, it was not considered necessary to specifically analyze potential impacts to the Shoshone-Bannock Tribes or the Fort Hall Reservation. Impacts of implementation of any of the EIS alternatives are expected to be small.

With respect to INEL, employees represent less than 2 percent of employed persons residing on the Fort Hall Reservation (25 out of 1,544). Employment changes at INEL as a result of the alternatives are not expected to disproportionately affect the Tribes or the Reservation; therefore, separate analyses were not performed.

The migration assumptions do account for a proportion of the population remaining in the area if jobs are lost. If the commentor is concerned that residents of the Reservation would not migrate, that possibility is reflected in the migration assumptions contained in the EIS. Household size assumptions were used to

determine estimates of migrating population. Because it is unlikely that any affected person on the Reservation would migrate, the difference in household size does not impact the population analyses.

Transportation and accident analyses do not indicate that Reservation lands would be damaged; therefore, no impact to agricultural production or hunting or gathering are expected. The residents' food supply is not expected to be impacted.

05.15 (010) Socioeconomics

COMMENT

The commentor observes that there is no discussion on the adequacy of public facilities and services in the region of influence around the Idaho National Engineering Laboratory.

RESPONSE

Data regarding community resources are presented in Volume 2, section 4.3.3. The data do not indicate any remarkable excesses or deficiencies in levels of service; therefore, their adequacies were not specifically evaluated. The data-collection process did not reveal outstanding problems in levels of service.

05.15 (011) Socioeconomics

COMMENT

The commentor disagrees with the use of current employment figures rather than more recent employment projections for the Idaho National Engineering Laboratory and states that the analysis ignores cumulative impacts and reasonably foreseeable actions.

RESPONSE

The EIS has been revised to reflect current projections of employment, including the results of the INEL contractor consolidation including program changes at Argonne National Laboratory-West.

Cumulative employment impacts are presented in Volume 2, section 5.15. The cumulative employment figures include the effects of (1) baseline changes at INEL, (2) alternative impacts, and (3) off-site (i.e., non-DOE) project impacts. The cumulative employment impacts are based on the best available data at the time of the analyses. The projected INEL employment figures are bounding for the region of influence. With the announced INEL employment reductions, employment estimates for any of the Volume 2 alternatives are easily accommodated within the existing site and region of influence infrastructure.

The Final EIS and ROD will be issued in 1995; therefore, fiscal year 1995 would be used as the baseline for analyzing potential impacts that could result from implementation of the SNF and INEL environmental restoration and waste management alternatives. The analysis in Volume 2, section 5.3 evaluates the potential impacts under each alternative relative to conditions in 1995. However, INEL employment data are provided beginning with fiscal year 1990 (Volume 2, section 4.4.3 and Figure 4.3-1); therefore, the reader may compare the projected impacts to employment levels during years prior to 1995. The issue raised in the comment regards baseline employment only. The absolute impacts of the alternatives remain the same regardless of which baseline year is chosen. It is the "relative" impact that differs. Furthermore, the analysis conducted estimates the impacts of the alternatives, not of changes in baseline. Change in baseline employment is not an alternative, and therefore, is not analyzed as such.

05.15 (012) Socioeconomics

COMMENT

The commentor states that the socioeconomic analyses should have identified local jurisdictions surrounding the Idaho National Engineering Laboratory and discussed the fiscal health and impacts of the alternatives on those specific areas.

RESPONSE

Community resources were analyzed, and the results are presented in Volume 2, section 4.3.3 and Table 4.3-4. Existing economic, social, and community profiles for affected communities are presented.

The potential socioeconomic impacts associated with the alternatives are so small that detailed analysis of local jurisdictions is not needed. Most INEL employees live in Bonneville County (67 percent). Therefore, it could be expected that any potential impacts would be focused in that area.

05.15 (013) Socioeconomics

COMMENT

The commentor states that the higher wage rate of Idaho National Engineering Laboratory employees, as compared to the average wage rate in the region of influence, was not considered in the socioeconomic analysis.

RESPONSE

It is true that INEL jobs on average are higher paying than the average private-sector job in Idaho. However, job losses (under the Ten-Year Plan and Minimum Treatment, Storage, and Disposal alternatives) and job gains (under the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives), as discussed in Volume 2, section 5.3, are not expected to be sufficient to generate adverse impacts with or without wage differentials taken into account. Volume 2, section 5.3 describes methods

used to analyze impacts, including total employment and earnings impacts that were estimated using Regional Input-Output Modeling System multipliers. As described in Volume 2, section 4.3, during fiscal year 1990, INEL directly employed approximately 11,100 persons, while the population directly supported by INEL employment was estimated to be approximately 38,000 persons.

05.15 (014) Socioeconomics

COMMENT

Commentors object to shipment and storage, and potential sabotage of nuclear waste at Idaho National Engineering Laboratory, because it would seriously affect the tourist industry and economy of Idaho and western Wyoming.

RESPONSE

Because the actual environmental impacts associated with SNF management under all alternatives considered in the EIS would be small, there is no reason to believe that storage or examination of SNF at any of the locations evaluated would have any significant effect on tourism. Even the impacts of hypothetical accidents are limited in extent and small enough that there should be no impact on tourism.

05.15 (015) Socioeconomics

COMMENT

The commentor raises an issue about the lack of quantitative analysis of the socioeconomic impacts that would result from a 1-year restriction of agricultural use of land surrounding the Idaho National Engineering Laboratory that has been contaminated following an accident and release of radioactive material.

RESPONSE

The impacts have been addressed in Volume 2, section 5.14 in a qualitative manner. While it is anticipated that the major part of the land that would be restricted following an accident at INEL would be onsite, there is a potential for existing agricultural land near INEL to become contaminated and also restricted from use. More likely, however, is the possibility of a temporary restriction of land use pending completion of surveys to ascertain whether contamination has occurred under allowable limits. Such temporary restriction would be of short duration.

Although the economic value of any contaminated land is highly subjective, in the event that damages are incurred as a result of contamination and restriction of land use, persons injured may be able to recover their losses in accordance with applicable laws and regulations.

05.15 (016) Socioeconomics**COMMENT**

The commentor requests that the socioeconomic portion of the EIS address DOE's strategic plan to improve U.S. competitiveness in a world economy and to transfer technology from the public to the private sector. Specifically, the commentor asks what the impacts of each alternative are on competitiveness and technology transfer.

RESPONSE

DOE is in the process of identifying technologies for transfer from the public to the private sector at each of its facilities and has ongoing programs targeting improving U.S. competitiveness in the world economy. The activities associated with SNF management use existing technologies and do not appear to offer opportunities for technology transfer.

05.15 (017) Socioeconomics**COMMENT**

The commentor is of the opinion that managing spent nuclear fuel at the Savannah River Site, coupled with projected employment declines, will impede economic development in the region and have an adverse impact on the quality of public education in Aiken County, South Carolina.

RESPONSE

As noted in Volume I, Appendix C, section 5.3, DOE believes that the projected decline in employment at SRS would be offset, in part, by the creation of operations jobs to support SNF management activities. DOE does not anticipate any adverse impacts to the public education system under any of the management alternatives being considered.

In terms of economic development in Aiken County and the region, DOE believes that the research and development activities and opportunities that may accompany SNF management activities could stimulate economic development in the region.

05.15 (018) Socioeconomics**COMMENT**

The commentor notes the importance of maintaining the pool of experts.

RESPONSE

The commentor is correct in noting the importance of maintaining a pool of expert personnel. In addition, it is necessary to maintain the existing infrastructure and skilled resources necessary to manage SNF as well as other nuclear materials and waste. One of the factors considered in identifying sites for SNF management was maximizing the use of existing expertise and overall SNF infrastructure, including

environment, safety, and health; waste management safeguards and security; and emergency response capabilities.

05.15 (022) Socioeconomics

COMMENT

The commentor raises an issue about adverse employment impacts to the Shoshone-Bannock Tribes and asks whether DOE will mitigate those impacts.

RESPONSE

Volume I, section 5.7.2 states that DOE will minimize impacts by coordinating with the local and regional planning agencies to address impacts on community services, housing, infrastructure, utilities, and transportation.

05.15 (023) Socioeconomics

COMMENT

The commentor states that the number used for the population located within 50 miles of the Nevada Test Site is too low and that workers from the Nevada Test Site are not considered in the analysis.

RESPONSE

Volume I, Appendix F, Part Two, section 5.7 states that a population of 15,100 persons was estimated to be within 50 miles of the proposed SNF facilities at NTS in 1995. This population estimate is based on 1990 census data extrapolated to 1995 using county growth rates. Volume I, Appendix F, Part Two, section 4.3, considers Nye and Clark counties, where most of the NTS work force resides.

05.15 (024) Socioeconomics

COMMENT

The commentor states that DOE needs to make firm commitments to mitigate adverse employment impacts that could occur, ranging from retraining displaced workers to providing support for the local communities.

RESPONSE

As stated in Volume I, Chapter 5, DOE will coordinate its planning efforts with local communities and county planning agencies to address impacts on community services, housing, infrastructure, utilities, transportation, and employment. In the past, DOE has worked to retrain and refocus workers due to changes in mission, such as the transition from past emphasis on defense-related activities during the Cold War to current environmental restoration activities. Also, as in the case of the City of Idaho Falls, DOE is working with community leaders to help diversify the economic base away from a large dependence on DOE activities at INEL.

5.16 Safeguards and Security

05.16 (001) Safeguards and Security

COMMENT

The commentor states that this EIS addresses nothing new in establishing a viable waste policy and that moving nuclear wastes around only delays the problem to the next generation.

RESPONSE

DOE is committed not only to developing Federal geologic repositories for permanent isolation of SNF, but to providing safe interim storage pending availability of permanent disposal facilities.

Transportation of SNF is necessary to varying degrees under the alternatives DOE is analyzing for providing safe interim storage and management of SNF. The alternatives have definite purposes for relocating SNF, such as storing similar fuel types within a single secure facility. Thus, the alternatives attempt to balance transportation concerns with other worthy considerations, including nonproliferation, worker safety, and cost effectiveness.

The potential impacts from storing radioactive materials associated with SNF are discussed in Volume 1, Chapter 5. Environmental consequences of SNF management for all alternatives are discussed in Volume 1, section 5.1, and mitigation measures are discussed in Volume 1, section 5.7. DOE has a program for safety managing and storing SNF and other radioactive materials at each of the sites considered in the EIS. It is DOE policy to design, construct, and operate its facilities in a way that provides a level of safety and safety assurance that meets applicable Federal, state, local, and DOE requirements and regulations. DOE will manage SNF in accordance with applicable Federal, state, local, and DOE requirements and regulations in a manner that ensures protection of the environment and the health and safety of the public and site employees.

05.16 (002) Safeguards and Security

COMMENT

The commentor states that there should be "a lot more" security associated with the various alternatives described in Volume 1, and these alternatives should all be comparable with the measures taken for the Centralization alternative.

RESPONSE

DOE has security systems in place at all facilities that handle nuclear materials. The extent of the security systems established for the various alternatives would be appropriate for the activities involved.

Security precautions are routine for all shipments of DOE nuclear material. Security precautions have, for more than 40 years, resulted in no known theft of DOE nuclear materials.

See also the response to comment 05.16 (001).

05.16 (003) Safeguards and Security

COMMENT

Commentors request declassification of environmental, safety, and health documentation relevant to establishing historical Idaho National Engineering Laboratory source terms (radioactive releases), because unavailability of this previously classified documentation has prevented an accurate assessment of the impacts.

RESPONSE

This comment relates to DOE's dose reconstruction project, which is outside the scope of this EIS.

The U.S. Department of Health and Human Services (HHS) and DOE have two Memoranda of Understanding (MOUs) for public health responsibilities around DOE sites. Under the MOU, which was signed in December 1990, DOE transferred the responsibility for managing and conducting energy-related analytic epidemiologic research to HHS. HHS has delegated responsibility to the Centers for Disease Control and Prevention (CDC). Baseline health effects studies for both DOE workers and for members of the surrounding public are either under way or planned at all facilities. To support this effort, DOE has directed that all worker health and exposure data and all data regarding releases of radioactive and toxic materials be released. DOE is responding to all CDC requests for declassification of documents relating to the dose reconstruction project. All studies will be made available to the public and the scientific community. For more information on this matter, contact the DOE Office of Public Affairs.

In recent years, DOE has released significant amounts of previously classified data and will continue to release additional information as it becomes declassified. Although most environmental monitoring data are not classified, other data on DOE activities are very sensitive and will remain classified until released by the Secretary of Energy.

05.16 (005) Safeguards and Security

COMMENT

The commentor asks about the consequences of terrorist attacks, and states that storage and disposal facilities should be where the least damage could occur.

RESPONSE

The EIS evaluates 10 sites as reasonable alternatives for some level of SNF management activity. The analysis in the EIS includes a number of factors including the potential risks to the public from both operations and reasonably foreseeable accident conditions. Discussions on public health and safety can be found in the Occupational Public Health and Safety sections in Volume I (and its associated site-specific Appendices A through F), and in the Health and Safety section in Volume 2. The EIS concludes that there would be no significant risks to the public or the environment due to SNF management activities at any of the 10 sites being considered.

The consequences of postulated terrorist acts are expected to be bounded by the results of other human-initiated events, such as plane crashes, explosions, fires, etc.; therefore, terrorist attacks require no specific analysis. SNF is not attractive to terrorists due to the bulk of the fuel and transport containers and also to the high radiation fields surrounding unshielded SNF.

DOE and the Navy have extensive security systems at all facilities handling nuclear materials. Security precautions are routine for all shipments of government-owned nuclear material. For more than 40 years, security precautions have successfully prevented the theft of government-owned nuclear materials.

05.16 (006) Safeguards and Security**COMMENT**

The commentor is opposed to alternatives that centralize spent nuclear fuel at a single location because an attack on a nuclear fuel storage facility could release large quantities of radioactivity, which, in turn, would cause significant loss of human life.

RESPONSE

DOE has extensive security systems in place at all facilities that handle nuclear materials. Security precautions, including emergency response team notification, are routine for all shipments of DOE nuclear material. Even in the event of a successful attack on a DOE nuclear facility, the accident analyses detailed in the EIS, which bound any credible terrorist attack scenario, describe consequences far less severe than "the extinction of mankind" mentioned by the commentor. However, scenarios involving the use of nuclear weapons are outside the scope of this EIS. Volume 2, section 5.14 has been changed to include acts of terrorism as an initiating event.

05.16 (007) Safeguards and Security

COMMENT

The commentor is opposed to nuclear power because of the concern about nuclear materials falling into "the wrong hands."

RESPONSE

DOE has extensive security systems in place at all facilities that handle nuclear materials. Security precautions, including emergency response team notification, are routine for all shipments of DOE nuclear material. Security precautions have, for more than 40 years, successfully prevented the theft of DOE nuclear materials. Questions and concerns regarding nuclear nonproliferation are outside the scope of this EIS. However, Volume 1, sections 1.2.3 and 1.2.4 refer the reader to other DOE-sponsored NEPA reviews. Nuclear nonproliferation policies will be addressed in two future DOE publications: *EIS on a Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* and *Programmatic EIS for the Management and Disposition of Excess Nuclear Material* (Draft).

5.17 Monitoring

05.17 (001) Monitoring

COMMENT

The commentor states that adequate funds must be available to support environmental monitoring activities at Idaho National Engineering Laboratory.

RESPONSE

INEL has adequate funds to support environmental monitoring activities per DOE Order 5400.1, *General Environmental Protection Program*, which implements the established environmental protection program at INEL.

05.17 (002) Monitoring

COMMENT

The commentor states that the EIS does not evaluate the potential need for additional environmental monitoring of new Idaho National Engineering Laboratory facilities described under the alternatives.

RESPONSE

The purpose of the EIS is to evaluate the potential environmental impacts from proposed activities. The EIS is not intended to substitute for the assessments required by regulations. Any facilities constructed

or operated under the chosen alternative will comply with applicable regulatory requirements, including requirements for monitoring emissions from facilities and surveillance of the surrounding environment.

05.17 (003) Monitoring

COMMENT

The commentor has requested documentation of the results of the environmental monitoring programs, particularly those of the Environmental Protection Agency, in the Volume I site descriptions.

RESPONSE

DOE has added references to the environmental monitoring results at the various sites discussed in Volume 1, Chapter 4.

05.17 (004) Monitoring

COMMENT

The commentor requests that the EIS contain a detailed monitoring plan for the preferred alternative and describe the feedback mechanisms by which the monitoring results are used to modify mitigation strategies based on changing information.

RESPONSE

The *Idaho National Engineering Laboratory Environmental Monitoring Plan* has been provided as a reference for the EIS. For existing facilities, it is independent of the alternative selected. For monitoring new facilities, more specific information, such as specific locations and facility operational parameters, is required before an appropriate monitoring plan could be prepared. The facility-specific monitoring plan would be prepared after final issuance of an EIS. DOE believes that inclusion of a detailed monitoring plan in this EIS would not provide useful information to decisionmakers, because it would not provide a discriminator for comparison of the alternatives.

5.18 General Operations

05.18 (001) General Operations

COMMENT

The commentor questions what techniques are being developed to ensure safe, long-term storage of nuclear waste, and that this is not dangerous material and ways of safely storing it really need to be reexamined.

RESPONSE

Numerous technologies are already available for managing radioactive materials, and others are being considered for this purpose. Technological options for SNF management are described in Volume 1,

section 1.1.3 and Appendix J. Current management practices for all types of radioactive wastes are discussed in Volume 2, section 2.2.7, and technology development activities are described in Volume 2, section 3.1. (Volume 2 is specific to INEL, but waste management technologies also generally apply to other DOE sites.) DOE has established a policy of compliance with all applicable Federal, state, and local regulations and DOE Orders. All radioactive materials will be managed to protect the environment and the health and safety of the public and site employees.

05.18 (002) General Operations

COMMENT

The commentor believes that technologies for safe, long-term storage of nuclear waste and plutonium may not exist because the material being stored has a long half-life and will outlast the storage containers.

RESPONSE

DOE has a program to safely manage and store radioactive materials (including both radioactive wastes and SNF) at each of the sites considered in the EIS. The potential impacts of storing SNF and associated mitigation measures are discussed in Volume 1, Chapter 5. Supporting information on types of SNF and storage options for them is provided in Volume 1, Appendix J. Management and storage of radioactive materials at INEL are described in Volume 2, Chapters 1 and 2. It is DOE's policy to comply with applicable Federal, state, and local regulations and DOE Orders. All radioactive materials will be managed to ensure protection of the environment and the health and safety of the public and site employees.

One of the concerns that must be addressed prior to ultimate disposition is the concern raised by the commentor that the waste may outlast some storage methods. While ultimate disposition is outside the scope of this EIS, DOE is researching and developing disposition technologies that will address the issue of the longevity of the waste and ensure that the public and environment are protected.

General long-term solutions proposed for managing SNF at INEL are discussed in Volume 2, Chapters 1 and 2. The alternatives for safe SNF management in the interim are discussed in section 3.1 of Volume 1.

5.18.1 Waste Management

05.18.01 (002) Waste Management

COMMENT

Commentors raise an issue about the disposing of hazardous and radioactive wastes using environmentally unacceptable methods.

RESPONSE

DOE accepts the responsibility to operate its hazardous and radioactive waste management activities in compliance with applicable requirements. DOE continues to improve the procedures and technologies associated with waste management. Accordingly, the lessons learned from past waste management practices and the knowledge being gained from current research and development programs are incorporated into future waste management programs. One purpose of this EIS is to further these objectives.

Volume 1 is intended to provide the public and decisionmakers with a programmatic view of proposed actions and alternatives for managing SNF. For all alternatives analyzed, DOE is committed to meeting applicable Federal, state, local, and DOE requirements to ensure that SNF is safely managed and that the environment and health and safety of the public and site employees are protected. Under the No Action alternative, only the minimum actions necessary for continued safe management of SNF would be implemented.

Volume 2 is a site-specific assessment of SNF and environmental restoration and waste management alternatives at INEL. Again, the intent of Volume 2 is to provide the public and decisionmakers with the information necessary to select the best alternative for these activities at INEL. DOE is also preparing a programmatic EIS for waste management, which will provide a broader view of complex-wide waste management programs similar to the way Volume 1 of this EIS addresses the programmatic concerns for SNF.

05.18.01 (003) Waste Management

COMMENT

The commentor states that for Volume 1, high-level, transuranic, and mixed waste are different wastes, with different risks, and should be dealt with separately in the EIS. The commentor also asks for a definition of mixed waste.

RESPONSE

DOE agrees with the comment that these three wastes are of different types, with different risks, and different disposal requirements. While it would be necessary in a site-specific EIS to treat each of these as separate entities, for this programmatic EIS, they were lumped together (and separated from low-level wastes) for two reasons: (1) the volumes of high-level, transuranic, and mixed wastes that would be generated from SNF management under the No Action alternative are uniformly small compared with volumes of these wastes already at DOE sites, and (2) high-level, transuranic, and mixed wastes must eventually be disposed of offsite, whereas low-level wastes can be disposed of onsite. A definition of mixed waste has been added to Appendix H.

05.18.01 (004) Waste Management**COMMENT**

The commentor indicates that Figure 5-2 and the text on page 5-25 do not agree.

RESPONSE

The text in Volume 1, section 5.1.3.3 indicates that the Hanford Site would generate 110 cubic meters per year of high-level, transuranic, and mixed waste due to processing. Volume 1, Figure 5-2 illustrates the volumes of waste that would be generated from the Decentralization alternative.

05.18.01 (005) Waste Management**COMMENT**

The commentor has questions about safe temporary storage and ultimate disposal of radioactive materials.

RESPONSE

DOE has a program to safely manage and store radioactive materials, including SNF, at each of the sites considered in this EIS. It is DOE's policy to design, construct, and operate its facilities in a manner that provides a level of safety and safety assurance that is in accordance with applicable Federal, state, and local regulations and DOE Orders. DOE will manage radioactive materials and wastes in a manner that ensures protection of the environment and the health and safety of the public and site employees.

Management and disposal of radioactive wastes are discussed in Volume 2, Chapter I. Current management practices for each type of radioactive waste (which are improvements on past techniques) are given in Volume 2, section 2.2.7. The potential impacts of storing radioactive materials associated with SNF are discussed in Volume 1, Chapter 5. Specific supporting information on types of SNF and storage options for them are presented in Volume 1, Appendix J.

05.18.01 (006) Waste Management

COMMENT

The commentor asks about three waste treatment facilities under development by the Scientific Ecology Group, Inc. at the Oak Ridge Reservation site.

RESPONSE

Scientific Ecology Group, Inc., has three commercial waste treatment facilities under development, which are not located at ORR. It has recently completed construction of a Carlsbad, New Mexico, facility; has recently purchased property for a Hanford, Washington, site; and is in the planning stages for an Idaho Falls, Idaho, site. As stated in Volume 1, Appendix F-4, Scientific Ecology Group, Inc., operates a low-level radioactive waste incinerator at ORR. The addition of a second radioactive waste incinerator is being considered, as stated in Volume 1, Appendix F, Part Three, section 5.16. While some enhancements to this facility will be made, it will remain within the property boundaries of the site. The potential incremental impacts from the addition of a second radioactive incinerator are assessed in a qualitative manner in the EIS.

05.18.01 (007) Waste Management

COMMENT

The commentor questions the meaning of off-site disposal as a waste management activity at the Nevada Test Site.

RESPONSE

Off-site disposal in the context of Volume 1, section 4.4 means disposal off of the Nevada Test Site at a DOE facility or permitted and licensed commercial disposal facility. The destination disposal site would depend on the type of waste. The text in the Final EIS has been changed to clarify that DOE does not manage wastes offsite.

05.18.01 (008) Waste Management

COMMENT

Commentors want all wastes disposed of in Resource Conservation and Recovery Act-permitted hazardous waste and/or Environmental Protection Agency/Nuclear Regulatory Commission-permitted radioactive waste disposal sites as appropriate.

RESPONSE

DOE waste management policies and practices embrace numerous laws and regulations governing hazardous and radioactive wastes. A comprehensive list of these requirements is provided in Volume 2, Chapter 7, and associated environmental permits are also discussed there. Current management practices for radioactive and nonradioactive wastes are described in Volume 2, section 2.2.7, which is specific to

INEL, but also generally applies to wastes at other DOE sites. DOE has established a policy of complying with all applicable Federal, state, and local regulations and DOE Orders, including applicable regulations establishing disposal requirements, including RCRA disposal of wastes in hazardous waste sites, and, if appropriate, EPA/NRC-permitted radioactive waste disposal sites. All radioactive and nonradioactive materials will be managed to protect the environment and the health and safety of the public and site employees.

05.18.01 (009) Waste Management

COMMENT

The commentor states that several types of low-level radioactive waste should be considered greater-than-Class-C waste, which requires an engineered barrier for disposal in burial grounds.

RESPONSE

DOE radioactive wastes are specifically managed according to DOE Order 5820.2A, *Radioactive Waste Management*, which classifies radioactive wastes somewhat differently than regulations promulgated by NRC for commercial radioactive wastes. In particular, DOE has only one category for low-level wastes, which encompasses the A, B, C, and greater-than-Class-C distinctions made by NRC. Specific management measures may still be prescribed for DOE low-level wastes according to the type and quantity of radionuclides present, analogous to standards for disposal of commercial radioactive wastes. For example, DOE low-level waste analogous to NRC greater-than-Class-C waste is required by DOE Order 5820.2A, *Radioactive Waste Management*, to be handled as a special case, and is not permitted to be buried in the RWMC. Additional information on special-case waste at INEL has been added to Volume 2, section 3.1.3.

05.18.01 (011) Waste Management

COMMENT

The commentor urges that until we can eliminate the generation of nuclear waste, keep it where we can see it and monitor it, and people have an interest in seeing that the generation is eventually eliminated or substantially curtailed.

RESPONSE

Under the No Action alternative, DOE would limit actions to the minimum necessary for safe and secure management of SNF at the generation sites or current storage locations. Most DOE SNF was generated in DOE production and experimental reactors that have ceased to operate, so considerable source reduction has already occurred. SNF management plans are presented for all alternatives in Volume 1, section 1.1, and mitigation measures are discussed in section 5.7.

05.18.01 (012) Waste Management

COMMENT

The commentor expresses an opinion that all waste should be stored in a retrievable manner using the best technologies available.

RESPONSE

Descriptions of how wastes would be managed under the proposed alternative actions are in Volumes 1 and 2, section 3.1. These alternative actions also consider the best technologies available. Technology development activities, including stabilization technologies, aimed at advancing the best technologies available for waste management are described in Volume 2, section 3.1.

05.18.01 (013) Waste Management

COMMENT

The commentor wants to know if the statement on Volume 1, page 5-72 stating "but with processing approximately 2 cubic meters per year (3 cubic meters per year) of high-level waste generated" refers to a process or a reprocessing activity at the Savannah River Site.

RESPONSE

The statement refers to "processing," as shown in Volume 1, Appendix C, section 3.1.

05.18.01 (014) Waste Management

COMMENT

The commentor suggests a wording change in Volume 1, Appendix A, section 2.3 to better define the characteristics of the *Hanford Spent Nuclear Fuel Management Plan*.

RESPONSE

The suggested wording change has been incorporated into the EIS.

05.18.01 (015) Waste management

COMMENT

The commentor states that the EIS should reconsider the procedures for burial at the Idaho National Engineering Laboratory Radioactive Waste Management Complex of the material removed from the ends of fuel modules during examination at the Expanded Core Facility, and that the EIS does not contemplate changes to this procedure.

RESPONSE

The Navy and DOE rely on definitions and classifications of nuclear materials set forth in the Nuclear Waste Policy Act, as amended, and regulations issued by EPA (40 CFR 261) and NRC (10 CFR 61). The categories set forth in these regulations are "Spent Nuclear Fuel," "High-Level Waste," "Transuranic

Waste," "Low-Level Waste," "Low-Level Mixed Waste," "Greater-than-Class-C Waste," and "Hazardous Waste."

Volume 1, Appendix H sets forth the definition of SNF used in this EIS as "fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated." The definition of high-level waste in Volume 1, Appendix H is "highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced from reprocessing and a solid waste derived from the liquid..." Transuranic waste is defined as "waste containing more than 100 nanocuries of alpha-emitting transuranic isotopes, with half-lives greater than 20 years, per gram of waste, ..." Low-level waste is defined as "waste that contains radioactivity and is not classified as high-level waste, transuranic waste, or spent nuclear fuel."

The ends removed from Naval SNF modules at the Expanded Core Facility are structural material that provides support and directs the flow of cooling water during operation. The material removed from the ends of the fuel modules does not contain any fuel or fission products from fuel and therefore cannot be considered SNF. It does not contain transuranic elements or fission products and thus cannot be considered high-level waste or transuranic waste. The amounts of radioactivity in the end boxes cause them to be classified as low-level waste. Consequently, the material removed from the ends of the modules at the Expanded Core Facility is categorized as low-level waste due to the amount of radioactivity in it. Their disposal at the RWMC at INEL is accomplished in accordance with applicable regulations. As indicated in Volume 1, Appendix D, section 5.2.15, the amount of low-level waste generated each year at the Expanded Core Facility is 425 cubic meters. The radioactive isotopes, which represent 99 percent of the activity in the material removed from the ends of fuel modules, are identified below.

ISOTOPE	HALF LIFE
Fe55	2.73 years
Co60	5.271 years
Ni59	76,000 years
Ni63	100 years

A description of the composition of material removed from the ends of fuel modules during examination has been added to Volume 1, Appendix D, Attachment B.

5.18.2 SNF Management

05.18.02 (001) SNF Management

COMMENT

The commentor states that he was unaware that spent fuel storage generates transuranic waste and is concerned that this may be due to extensive fuel leakage.

RESPONSE

As reported in Volume 1, section 5.1.1 and site-specific Appendices A through F, transuranic waste is generated in small quantities by the routine operations associated with transporting, receiving, and managing SNF (from filters, ion exchange columns, etc., particularly during examination and stabilization activities) rather than extensive leakage.

5.18.3 Not used

5.18.4 Past Practices

05.18.04 (001) Past Practices

COMMENT

The commentor points out that the vulnerability assessment states that canned fuel in ICPP-603 being transferred to ICPP-666 could lead to contamination and additional vulnerabilities, and that the EIS fails to address this issue.

RESPONSE

DOE is aware of the potential for contamination if transfers are not conducted in a safe, well-planned manner. All fuels to be transferred from ICPP-603 at the Idaho Chemical Processing Plant to ICPP-666 have been inspected for corrosion and other potential breaches. Potentially breached or deteriorated fuels will be placed in suitable containers to prevent release of radioactive material. All fuels will be transported in shielded transfer casks. ICPP-666 has extensive monitoring and water purification capabilities, and any leaking container or fuel element would be identified and necessary corrective actions taken. No additional vulnerabilities are anticipated.

The EIS discusses the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities* (known as the vulnerability assessment) and associated action plans to resolve identified vulnerabilities in Volume 1, section 1.1.2 and Appendix I-2 and in Volume 2, section 2.2.5.

05.18.04 (002) Past Practices

COMMENT

Many commentors raise issues about DOE's past record of waste-handling practices at such sites as Hanford, Oak Ridge, and Idaho National Engineering Laboratory, resulting in releases to the environment.

RESPONSE

DOE has identified, or is currently evaluating many of the problems that exist with its waste management infrastructure, or that have resulted from past releases of contaminants to the environment. Waste management strategies are continually evolving to meet current regulatory requirements and take advantage of technology advancements. Many facilities across the DOE complex are either undertaking, evaluating, or planning upgrades or replacements to come into compliance with applicable regulations. Historical contaminant releases are addressed by DOE's Environmental Restoration Program. Each DOE site listed on EPA's National Priorities List must negotiate an agreement with the appropriate regulatory agencies to prioritize work and develop enforceable schedules for cleanup of contaminated areas. An example is INEL's FFA/CO, which is signed by DOE, EPA Region X, and the State of Idaho.

As discussed in Volume 1, Chapter 1, DOE is committed to complying with all applicable Federal and state laws and regulations, DOE Orders, and interagency agreements governing SNF and environmental restoration and waste management.

As discussed in Volume 1, Chapter 3, safe management of SNF requires that many factors be analyzed, including site security, presence of skilled workers, safety, and the affected environment. The EIS did not reach a decision regarding in which state or states SNF will be stored. Analysis of impacts for a number of potential storage locations were included in the EIS. As part of the public comment process, specific public input regarding the eventual location of SNF storage facilities was sought. Consideration of this input was part of the process used in arriving at the preferred alternative. The preferred alternative in the EIS, as well as other factors, will be considered in the ROD for the proposed action.

Volume 1, section 5.1.1 summarizes potential impacts from waste management activities associated with the SNF management alternatives. Site-specific details are discussed in Volume 1, Appendix A for the Hanford Site, Volume 1, Appendix F, Part Three for ORR, and Volume 1, Appendix B for INEL.

5.18.5 Mitigation

05.18.05 (001) Mitigation

COMMENT

The commentor wants mitigations measured for their effectiveness and addressed in the EIS. A thorough discussion of proposed mitigation for direct, indirect, and cumulative impacts should be included. A Council on Environmental Quality regulation states that an EIS should include the means to mitigate adverse environmental effects.

RESPONSE

As discussed in Volume I, Chapter 5, the EIS evaluated impacts to socioeconomics, utilities, materials and waste management, occupational health and safety, public health and safety, and transportation; in all cases, the results indicate that impacts to the environment and to humans would be small. However, general mitigation techniques are discussed in Chapter 5. This level of detail is appropriate for a programmatic EIS. Follow-onsite-specific NEPA analyses would address specific mitigation features considered for identified impacts. Comparison of specific impacts by alternatives for Volume 2 is provided in Table 3.3-1, with an indication of proposed mitigation measures. Possible mitigation measures are further discussed in Volume 2, Chapter 5. Specific mitigation measures to be undertaken will be developed for the ROD, and if necessary, a formal mitigation action plan will be developed, as appropriate.

5.19 Miscellaneous

05.19 (001) Miscellaneous

COMMENT

Several commentors state preferences for truck, rail, barge, or air as modes of transportation. Numerous reasons were provided for favoring one mode of transportation over another.

RESPONSE

The EIS evaluates truck, rail, barge, and ship transportation because they are believed to be most practical in terms of risk and cost. Other modes of transportation were not evaluated.

Truck transport of radioactive material is a legal and viable option and the potential risks from this mode of transportation are very small. Rail transport of radioactive material is also a legal and viable option. The EIS evaluates both truck and rail transportation for DOE shipments. Navy SNF has been transported by rail, except for transportation by ship from Pearl Harbor Naval Shipyard to Puget Sound Naval Shipyard, where the containers are transferred to railcars and heavy-lift transporters move casks to the

nearest rail access at the Kesselring Site. Transport of SNF or radioactive waste by air would not occur under any alternative being considered in this EIS.

An analysis of barge transport analysis has been added to the EIS.

05.19 (002) Miscellaneous

COMMENT

The commentor identifies errors or omissions in the text and suggests alternative wording to clarify the meaning of the text.

RESPONSE

The errors or omissions identified by the commentor have been corrected in the Final EIS.

05.19 (003) Miscellaneous

COMMENT

The commentor expresses support for DOE ecological activities and research at the Idaho National Engineering Laboratory, which are not specific to this EIS.

RESPONSE

The comment is noted.

05.19 (004) Miscellaneous

COMMENT

Commentors express fear of moral impacts and obligations, catastrophic events, radiation and/or nuclear materials, and emotional concerns over the management of nuclear material such as spent nuclear fuel.

RESPONSE

DOE has attempted in this EIS to develop reasonably foreseeable, quantifiable environmental impacts due to the proposed action(s), including operations and accident consequences. Other potential concerns such as moral, emotional, and psychological (including fear, dread, mental anguish, negative effects on youth, hatred, etc.) issues are beyond the scope of required NEPA evaluations. The U.S. Supreme Court, in *Metropolitan Edison v. People Against Nuclear Energy*, 103 S. Ct. 1556 (1983), clearly delineated the aforementioned NEPA evaluative requirements.

05.19 (005) Miscellaneous

COMMENT

Many commentors state they are concerned about errors and inconsistent use of information throughout the document, while others express concern about misleading discussions that need to be clarified.

RESPONSE

The EIS has been reviewed for errors and inconsistencies, including those identified by individual commentors. Changes have been made to the EIS to correct errors or clarify misleading discussions.

05.19 (006) Miscellaneous**COMMENT**

Commentors express reservation and/or discontent about residing near nuclear waste and/or radioactivity.

RESPONSE

DOE is aware of general public fears regarding radiation and radioactivity, a significant portion of which arise from a basic unfamiliarity with such risks. The EIS analyzes the cumulative effects of DOE and Navy operations at the 10 candidate sites for management activities involving SNF. The EIS concludes that there would be no significant risk due to either operations or credible accidents involving the management of SNF, including transportation, at any of the candidate sites.

05.19 (008) Miscellaneous**COMMENT**

The commentor questions the existence or effectiveness of quality assurance or quality control within DOE or its facilities.

RESPONSE

DOE and its contractors implement quality assurance/quality control requirements for all phases of work and facility operations. Formal quality program requirements are derived and implemented from DOE Order 5700.6C, *Quality Assurance*, which defines the interrelations of criteria and includes requirements for managing, achieving, and assessing quality that result in improved safety and reliability of DOE's products and services. In accordance with these requirements, approved quality programs are invoked at the project/program level. These quality programs are tailored to meet the specific needs and requirements of the projects/programs and apply the appropriate industry standard criteria unique to that work, e.g., NQA-I for nuclear reactor operations, EPA environmental quality assurance management requirements for remediation activities, etc. In recent years, DOE has adopted the Total Quality Management philosophy, whereby employees at all levels are encouraged to take ownership in applying quality principals for all aspects of their respective duties and interactions, resulting in more immediate and positive results.

05.19 (009) Miscellaneous

COMMENT

The commentor asks why the value for the State of Idaho appears to be omitted from Volume I, Figure 5.15-1 of the EIS.

RESPONSE

This error has been corrected.

05.19 (011) Miscellaneous

COMMENT

Commentors raise the issue of the potential impacts to the environment and the people of Idaho.

RESPONSE

Descriptions of the existing environment at INEL and the potential impacts to the environment as a result of implementation of the alternative actions are in Volumes 1 and 2, Chapters 4 and 5, respectively.

These chapters discuss the current environmental situation and the expected consequences, if any, of the alternative actions on the environment and show that the impacts would be small for all alternatives. The measures that DOE could implement to control or reduce impacts to the environment are described in Volume 1, section 5.7 and Volume 2, section 5.19. As described in these sections, DOE is committed to operating its facilities in compliance with all applicable laws and regulations protecting environmental resources to ensure that the impacts of DOE activities on those resources are small.

05.19 (012) Miscellaneous

COMMENT

The commentor notes that the EIS identifies irreversible and irretrievable commitments of air and water resources likely to occur due to the proposed action and notes "the assertion that air quality resources may be and groundwater resources already have been irretrievably impacted." The commentor also states that DOE has an obligation to protect natural resources under its jurisdiction and to remediate harm that the agency has caused.

RESPONSE

The identification of irreversible and irretrievable commitments of resources is a standard component of an EIS. Irreversible and irretrievable commitment of resources refers to the process of making resources unavailable for use as a result of past, present, or proposed actions. Irreversible and irretrievable commitment of resources does not imply adverse environmental impacts. The discussion of cumulative impacts in Volume 2, section 5.15 shows that the impacts from past, present, and proposed actions at INEL would be small.

05.19 (013) Miscellaneous

COMMENT

The commentor suggests specific deletions, corrections, or additions to the EIS.

RESPONSE

If the suggested change was considered editorial or significant to the decision-making process, the appropriate change has been incorporated into the EIS.

05.19 (014) Miscellaneous

COMMENT

The commentor states that a discussion of Oak Ridge spent fuel inventories in Volume 1, Appendix I incorrectly refers the reader to a section that does not exist.

RESPONSE

Volume 1, Appendix F, Part Three, section 2.3.7 has been modified to correct this error.

05.19 (015) Miscellaneous

COMMENT

The commentor expresses the opinion that all facets of DOE's nuclear program are lethal and under the protection of bureaucrats.

RESPONSE

This EIS addresses the programmatic management of SNF in the interim to ultimate disposition, as well as environmental restoration and waste management activities at INEL over the next 10 years. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Although vulnerabilities exist, DOE has the management skill, scientific capability, and Secretarial mandate to safely manage SNF and INEL waste management and environmental restoration activities during the period covered by this EIS. See also the response to comment 03.07 (004).

05.19 (016) Miscellaneous

COMMENT

The commentor states that a description of the amount of radiation expected to be released in the course of this project is a necessary item in the EIS.

RESPONSE

This information is provided for all alternatives and all sites considered in the EIS. Volumes 1 and 2, Chapter 5 summarize information on potential releases to the environment. Additional details are provided in Volume 1, Appendices A through D and K, and Volume 2, Appendix F.

05.19 (017) Miscellaneous

COMMENT

The commentor identifies sections of Volume 2 of the EIS that require clarification or additional information to more completely address the material in appropriate sections.

RESPONSE

The EIS has been modified to include the additional information requested by the commentor in Volume 2, Chapter 4.

05.19 (018) Miscellaneous

COMMENT

The commentor requests a specific change to the EIS.

RESPONSE

The commentor's suggested language has been incorporated in Volume I, section 5.1.1.

05.19 (019) Miscellaneous

COMMENT

The commentor is unclear what the term "estimated population dose" means and states that the text in Volume I refers to Figure 5-1 as representing the estimated population dose, but that figure does not contain that term.

RESPONSE

The statement should have referred to estimated annual latent cancer fatalities. The sentence referred to by the commentor has been revised in the EIS.

**Department of Energy Programmatic
Spent Nuclear Fuel Management
and
Idaho National Engineering Laboratory
Environmental Restoration and
Waste Management Programs
Final Environmental Impact Statement**

**Volume 3
Part B**



April 1995

**U.S. Department of Energy
Office of Environmental Management
Idaho Operations Office**

VOLUME 3, PART B: CONTENTS

SEE PART A FOR INTRODUCTION, ACRONYMS, AND CHAPTERS 1 THROUGH 5.

6.	SPENT NUCLEAR FUEL MANAGEMENT SPECIFIC	6-1
6.1	Vulnerabilities	6-1
6.1.1	Working Group Report and Action Plans	6-7
6.2	Existing Facilities	6-8
6.3	Inventories (amount and characteristics)	6-20
6.3.1	Types	6-25
6.3.2	Hazards	6-26
6.4	Technologies	6-27
6.4.1	Storage	6-31
6.4.2	Stabilization	6-33
6.5	Ultimate Disposition	6-34
6.6	Interim Management	6-49
6.7	Cost	6-53
6.8	Commercial Spent Nuclear Fuel	6-57
6.9	Miscellaneous	6-59
7.	INEL ER&WM PROGRAMS SPECIFIC	7-1
7.1	Waste Management	7-3
7.1.1	Past Practices	7-6
7.1.2	Existing Facilities	7-7
7.1.3	Inventories and Characteristics	7-10
7.1.4	Technologies	7-13
7.1.5	Ultimate Disposition	7-14
7.2	Environmental Restoration	7-15
7.2.1	FFA/CO Issues	7-15
7.2.2	Waste Generation	7-18
7.2.3	Technologies	7-19
7.2.4	Decontamination and Decommissioning	7-20
7.2.5	Not used	7-21
7.2.6	Cost	7-22
7.3	Regulatory Compliance	7-22
7.4	Miscellaneous	7-23

8.	NAVAL PROGRAM SPECIFIC	8-1
8.1	Preferences	8-1
8.2	NEPA Related Comments	8-5
8.3	Policy	8-8
8.3.1	Government Policy and Credibility.....	8-8
8.3.2	Legislative and Regulatory Compliance	8-19
8.3.3	Mission	8-20
8.3.4	Environmental Justice	8-28
8.3.5	Past Practices	8-29
8.4	Proposed Action and Alternatives	8-35
8.5	Technical Issues	8-50
8.5.1	Amount and Characteristics of Navy Fuel	8-50
8.5.2	Cultural Resources	8-57
8.5.3	Safety and Effects of Radiation	8-60
8.5.4	Socioeconomics	8-65
8.5.5	Seismic Analyses	8-68
8.5.6	Analyses of Normal Operations and Accidents	8-77
8.5.7	Emergency Planning	8-102
8.5.8	Cumulative Impacts	8-107
8.5.9	Waste Characterization and Management	8-108
8.5.10	Transportation Analyses	8-112
8.5.11	Costs	8-119
8.6	Miscellaneous	8-125
9.	MISCELLANEOUS	9-1
9.1	Unrelated Comments	9-1

APPENDIX A:

Responses to Comments by Individuals, Organizations, or Agencies

APPENDIX B:

Responses to Comments by Comment Document Number

APPENDIX C:

Responses - Comment Contributor Correlation

6. SPENT NUCLEAR FUEL MANAGEMENT SPECIFIC

6.1 Vulnerabilities

06.01 (002) Vulnerabilities

COMMENT

Commentors express the opinion that spent nuclear fuel is currently stored in poor conditions and that DOE will not take responsibility for the waste currently existing. Commentors also state that they do not trust DOE to manage additional spent nuclear fuel any better in the future, because DOE may not have learned from the last 40 years of spent nuclear fuel management.

RESPONSE

DOE acknowledges its responsibility to safely manage spent nuclear fuel (SNF). The Secretary of Energy has publicly affirmed that current DOE policy and practice emphasize safety and environmental considerations above other program goals. DOE is formally committed to protecting the safety and health of its workers, the public, and the environment. Furthermore, DOE intends to design, construct, and operate facilities in a safe manner, relying on lessons learned from the last 40 years of SNF management. DOE is working to rectify and eliminate any adverse environmental impacts from past programs.

Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This report, called the spent nuclear fuel vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2, and Volume 2, section 2.2.5. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, the impacts of SNF management activities would be small.

06.01 (005) Vulnerabilities

COMMENT

The commentor states that the EIS fails to acknowledge current problems with spent fuel handling and storage, and that these problems will continue to be ignored if DOE begins its massive transportation and concentration program.

RESPONSE

Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This report, commonly referred to as the spent nuclear fuel vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, sections 1.1.2 and J-2, and Volume 2, section 2.2.5. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, DOE is committed to complying with applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees. See also the response to comment 03.05 (024).

06.01 (006) Vulnerabilities**COMMENT**

The commentor raises two issues: (1) the ability of the K-basins to withstand a credible earthquake and (2) the chemical breakdown of the spent nuclear fuel in the basins.

RESPONSE

The continued management, storage, and chemistry of spent nuclear fuel currently stored at the Hanford Site will be evaluated in the *Hanford Spent Nuclear Fuel Management EIS* (tiered from this EIS) and in the *EIS for the Management of Spent Nuclear Fuel from the K-Basins at the Hanford Site, Richland, Washington*. The EISs will consider both the seismic conditions and the chemistry of the spent nuclear fuel.

06.01 (008) Vulnerabilities**COMMENT**

The commentor states that existing storage conditions for N-Reactor fuels in the Hanford Site K-basins must be corrected immediately because of degradation from corrosion and hydriding.

RESPONSE

Descriptions of SNF stored at the Hanford Site and technologies for managing SNF are presented in Volume 1, section I.1. Hanford-specific information on N-Reactor fuel and conditions at the K-basins is given in Volume 1, Appendix A, section 2.3. More general information on management options for degraded SNF and associated management technologies is in Volume 1, Appendix J, sections J-3 and J-4. DOE agrees that it is necessary to deal with spent N-Reactor fuel, especially in the 105-KE Basin. This situation was prominently identified in the *Spent Fuel Working Group Report on Inventory and*

Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities (called the spent nuclear fuel vulnerability assessment). These concerns also are reflected in a June 1994 Tri-Party Agreement to initiate encapsulation of uncontainerized fuel. This agreement between the State of Washington, the Environmental Protection Agency (EPA), and DOE has a target date of December 2002 for removal of SNF and sludge from the 105-K basins. See also the response to comment 06.01 (006).

06.01 (009) Vulnerabilities

COMMENT

The commentor requests that the EIS address cleanup of Idaho National Engineering Laboratory contamination and the safety of existing spent nuclear fuel storage facilities, particularly ICPP-603.

RESPONSE

The evaluation in Volume 2 of this EIS bounds environmental impacts from environmental restoration (or cleanup) activities at the Idaho National Engineering Laboratory (INEL). However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, the Environmental Protection Agency (EPA) Region X, and the State of Idaho on December 9, 1991, the Federal Facility Agreement and Consent Order (FFA/CO). The FFA/CO establishes a comprehensive process that integrates the remediation requirements of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the corrective action requirements of the Resource Conservation and Recovery Act (RCRA), and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. Records of Decision (RODs) under the FFA/CO process are signed by all three entities and represent a joint determination that environmental protection will be achieved through implementation of the selected remedy. The FFA/CO's role in INEL's environmental restoration program is discussed in detail in Volume 2, sections 2.2.6 and 7.2.5.

DOE has a program for safely managing and storing SNF and other radioactive materials at each of the sites considered in the EIS. It is DOE's policy to design, construct, and operate its facilities in a way that provides a level of safety and safety assurance that is in accord with applicable Federal, state, and local regulations and DOE Orders. DOE will manage SNF in a manner that ensures protection of the environment and the health and safety of the public and site employees. The potential impacts from storing radioactive materials associated with SNF are discussed in Volume 1, Chapters 5. Environmental consequences of SNF management are presented for all alternatives in Volume I, section 5.1, and mitigation measures are discussed in section 5.7.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Problems at existing storage facilities have been identified in *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities*. This report, commonly called the SNF vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, sections 1.1.2 and J-2 of the EIS. Additional information is included in Volume 2, section 2.2.2.

06.01 (011) Vulnerabilities

COMMENT

The commentor asserts that DOE failed to acknowledge the urgency of the vulnerabilities associated with existing storage facilities at the Hanford Site, as highlighted in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities*, and that the EIS needs to be modified to include the three specific actions included in the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) in January 1994.

RESPONSE

DOE concurs that action is necessary to deal with spent N-Reactor fuel, especially in the 105-KE Basin. This situation was prominently identified in the spent nuclear fuel vulnerability assessment. These concerns also are reflected in a June 1994 Tri-Party Agreement to initiate encapsulation of uncontainerized fuel. This agreement between the State of Washington, EPA, and DOE has a target date of December 2002 for removal of SNF and sludge from the 105-K Basins. A fourth amendment to the Tri-Party Agreement (January 1994) contains specific milestones related to managing SNF at the Hanford Site. Descriptions of SNF stored at Hanford and technologies for managing SNF are in Volume 1, section 1.1. Hanford-specific information on N-Reactor fuel and K-basin conditions is given in Volume 1, Appendix A, section 2.3. More general information on management options for degraded SNF and associated management technologies is in Volume 1, Appendices J-3 and J-4, respectively.

06.01 (013) Vulnerabilities

COMMENT

The commentor states that the EIS is based on an unjustified presumption that spent nuclear fuel must be moved to be stored.

RESPONSE

Volume 1, section 1.1.2 discusses the corrective actions for the SNF vulnerability assessment conducted by DOE. Volume 1, section 1.1 of the EIS presents a comprehensive discussion on the options available for managing SNF, including storing, stabilizing, transporting, and preparing it for final disposition. Specific technologies to accomplish these options are discussed in Volume 1, Appendix J. These options are incorporated to varying degrees in all of the alternatives, as described in Volume 1, Chapters 3 and 5. Volume 1, Figures 3-1 and 3-6 show the number of shipments expected for each alternative, and Figure 3-7 compares estimated shipments among all of the alternatives. The wide range in shipment numbers reflects DOE's desire to consider all realistic transportation possibilities and the related stakeholder concerns. In addition, the alternatives have definite purposes for relocating SNF, such as storing similar fuel types within a single secure facility. Thus, the alternatives attempt to balance transportation concerns with other worthy considerations, including nonproliferation, worker safety, and cost effectiveness.

06.01 (014) Vulnerabilities

COMMENT

Commentors note that descriptions of alternatives in Volume 1, Tables 3-1 through 3-4 mention the fuel storage problems at Test Area North but not at other storage facilities at the Idaho National Engineering Laboratory that were identified as not meeting current standards, such as the fuel in pool storage at ICPP-603. The commentor adds that no matter what alternative is selected, fuel should be moved from all facilities that do not meet current standards.

RESPONSE

DOE is currently taking steps to correct outdated and potentially unsafe facilities. Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and their Environmental, Safety and Health Vulnerabilities*. This report, commonly called the SNF vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, sections 1.1.2 and Appendix J-2 of the EIS. Additional site-specific information is presented in Volume 1, Appendices A through F. INEL plans to move SNF from ICPP-603 by December 31, 2000, as an interim action, and the impacts of the action are included in the No Action alternative. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives. For all alternatives analyzed, DOE is committed to

complying with applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees.

06.01 (016) Vulnerabilities

COMMENT

The commentor states that the condition of the spent nuclear fuel and the spent nuclear fuel storage facilities is not adequately covered in the EIS, and cites specific problems with the spent nuclear fuel and the K-basins at the Hanford Site. In addition, the commentor believes that, based on the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities*, it is apparent that none of the facilities in the DOE complex is acceptable for the continued storage of existing inventories of spent nuclear fuel, much less additional fuel from another location.

RESPONSE

DOE believes that the condition of SNF and existing storage facilities, as well as the associated vulnerabilities, are adequately represented in the EIS. Problems with the K-basins and other storage facilities identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities* are being addressed by corrective action plans that are proceeding independently of this EIS.

06.01 (017) Vulnerabilities

COMMENT

The commentor states that it is urgent to address the vulnerabilities at the Hanford Site identified in the *Spent Fuel Working Group Report*.

RESPONSE

Descriptions of SNF stored at the Hanford Site and technologies for managing SNF are in Volume 1, section 1.1. Hanford-specific information on N-Reactor fuel and K-basin conditions is given in Volume 1, Appendix A, section 2.3. More general information on management options for degraded SNF and associated management technologies is discussed in Volume 1, Appendix J, sections J-3 and J-4. DOE agrees that it is necessary to deal with spent N-Reactor fuel, especially in the 105-KE basin. This situation was prominently identified in the spent nuclear fuel vulnerability assessment. These concerns also are reflected in a June 1994 Tri-Party Agreement to initiate encapsulation of uncontainerized fuel. This agreement between the State of Washington, EPA, and DOE has a target date of December 2002 for removal of SNF and sludge from the 105-K basins.

Under all alternatives except No Action, production reactor SNF would be removed from its present storage location. Volume 1, Appendix A, section 2.3 has been revised to provide additional information on the Hanford Site vulnerabilities described in the spent nuclear fuel vulnerability assessment of December 1993.

6.1.1 Working Group Report and Action Plans

06.01.01 (001) Working Group Report and Action Plans

COMMENT

Some commentors state that the safety and health vulnerabilities, some of which have been identified in the *Spent Fuel Working Group Report* have been ignored or are not acknowledged in the EIS, and ask whether the public had input to the report. Others ask if the No Action alternative would be used by DOE as an excuse to avoid its responsibilities for spent nuclear fuel vulnerabilities, and some commentors cited this as a reason for supporting the No Action alternative.

RESPONSE

The *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities* (spent nuclear fuel vulnerability assessment) and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2, and Volume 2, section 2.2.5 for INEL. These sections note that Phase I, Phase II, and Phase III Action Plans have been released for public comment.

Additional site-specific information is presented in Volume 1, Appendices A through F. The environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in Volume 1, section 5.7. For all alternatives analyzed, DOE is committed to comply with applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees. With the exception of the No Action alternative, all alternatives fully address the identified vulnerabilities. Although the No Action alternative includes actions for safe and secure SNF management, as discussed in Volume 1, section 5.1.2, the minimal actions allowed by the No Action alternative may not completely resolve all the long-term vulnerabilities at all existing facilities identified in the SNF vulnerability assessment, particularly for degraded SNF. As a result of public comments, additional information on the vulnerability assessment and corrective action plans and their relationship to this EIS has been added to Volume 1, Appendices A, C, and F.

For additional discussion on the No Action alternative as it relates to SNF storage, see the response to comment 06.05 (016).

6.2 Existing Facilities

06.02 (002) Existing Facilities

COMMENT

The commentor states that the use of a hypothetical spent nuclear fuel processing project in the EIS is misleading because DOE started constructing the fuel processing facility at Idaho Chemical Processing Plant in 1991.

RESPONSE

The hypothetical facility is described in Volume 2, Appendix C, SNF6. This facility was used to provide a basis for estimating the impacts of constructing the facility at other sites considered in the EIS. The project data sheet states that the existing Fluorinal Dissolution Process (Idaho Chemical Processing Plant Building 601) and Fuel Processing Restoration Project were considered as part of the structure of this hypothetical project.

06.02 (003) Existing Facilities

COMMENT

Commentors question where spent nuclear fuel from foreign research reactors would be stored if brought into the United States, and express concern about the ability of existing spent nuclear fuel storage areas at Savannah River Site to safely store foreign research reactor spent nuclear fuel, given the current conditions of spent nuclear fuel storage areas.

RESPONSE

Foreign research reactor (FRR) SNF is discussed in Volume 1, sections 1.1 and 1.2. DOE has decided to accept up to 409 SNF elements, which will be stored temporarily at the Savannah River Site. DOE is preparing a separate EIS entitled *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft), which will determine whether to accept up to 25,000 additional elements and which port(s) of entry would be used. Volume 1 of this EIS addresses the cumulative environmental impacts of managing all DOE FRR SNF through 2035, including the additional 25,000 FRR elements.

Consequently, the impacts associated with FRR SNF are evaluated under the management alternatives analyzed in Volume 1, along with the DOE SNF generated in the United States. Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage*

of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Material and Their Environmental, Safety and Health Vulnerabilities (spent nuclear fuel vulnerability assessment). This report and associated action plans to resolved identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2. Additional site-specific information is presented in Volume 1, Appendices A through F. As noted in the summary section of Volume 1, on a nationwide or site-specific basis, the implementation of any of the alternatives would not significantly contribute to cumulative impacts. The main storage location(s) Preferred Alternative language for all DOE SNF, including that from foreign research reactors if the decision is to accept such fuel into this country, will be addressed in the ROD for this EIS. For locations of foreign research reactors SNF management under DOE's preferred alternative, see the response to comment 04.04 (008).

06.02 (005) Existing Facilities

COMMENT

The commentor notes that the EIS emphasizes the use of new facilities and believes that DOE should make more effective use of existing and currently uncompleted facilities.

RESPONSE

DOE did consider facility usage in its decision-making process for the identification of a preferred alternative for SNF management. The alternatives considered in this EIS include those based on using existing facilities and those based on using new facilities. To the extent practical, DOE favors using or modifying existing facilities when safety and environmental considerations would not be compromised and when such modifications and operations are relatively cost effective. Although not part of the EIS, a separate cost report on SNF management has been prepared and identifies the cost difference between using existing facilities and building new facilities.

06.02 (006) Existing Facilities

COMMENT

The commentor asks when more effective storage facilities will be available.

RESPONSE

Following the ROD for this EIS, if the alternative selected requires new storage facilities, DOE will begin upgrading existing facilities or building new facilities as soon as possible after appropriate National Environmental Policy Act (NEPA) reviews are performed and funding is available. A typical construction schedule for new nuclear facilities is 7 to 10 years. In the meantime, DOE will continue its program of safely managing and storing SNF and other radioactive materials at each of the sites

considered in the EIS. DOE manages SNF in accordance with applicable Federal, state, and local regulations and DOE Orders in a manner that ensures protection of the environment and the health and safety of the public and site employees.

06.02 (007) Existing Facilities

COMMENT

The commentor states that DOE failed to analyze what it will do when ICPP-666 is full, which could be long before 2002.

RESPONSE

DOE analyzed various methods of expanding the storage capacity at INEL to accommodate projected receipts under each of the alternatives. The capacity of Building 666 at the Idaho Chemical Processing Plant (ICPP) can be increased by implementing the Increased Rack Capacity for ICPP-666 Project, described in Volume 2, Appendix C, SNF2. This project would extend the ability to receive fuel at ICPP-666 by several years. In addition, depending on the alternative selected, additional storage capacity at INEL could be provided by additional racking at ICPP-666 [see Volume 2, Appendix C, SNF3, Additional Increased Rack Capacity (ICPP-666)] or by constructing Project SNF4, Dry Fuel Storage Facility: Fuel Receiving, Canning/Characterization, and Shipping (see Volume 2, Appendix C, SNF4).

06.02 (008) Existing Facilities

COMMENT

The commentor asks if there are sufficient glass containers available at the Savannah River Site to handle all of the wastes that might be shipped to that site under some of the alternatives considered in the EIS.

RESPONSE

DOE believes that the commentor is referring to the vitrified (glass) high-level waste logs being produced in the Savannah River Site Defense Waste Processing Facility. This facility does not require glass containers, rather it adds inert materials to the waste materials and melts them into a vitrified form in preparation for interim storage or disposition. This technology is not directly applicable to SNF, but to the liquid high-level waste produced from processing SNF. Detailed information on this activity is available in the *Supplemental EIS - Defense Waste Processing Facility, Savannah River Site*.

06.02 (009) Existing Facilities

COMMENT

The commentor notes that, while the EIS states that spent nuclear fuel is stored in water pools or above-grade dry storage, there is some spent nuclear fuel in below-grade dry storage at the Idaho

Chemical Processing Plant at the Idaho National Engineering Laboratory.

RESPONSE

Some SNF is stored in below-grade dry storage at ICPP. Volume 1, section 5.8.3 has been changed to clearly include isolation from the environment in below-grade dry storage.

06.02 (010) Existing Facilities

COMMENT

The commentor identifies specific safety issues associated with the continued management, storage, and chemistry of spent nuclear fuel, principally N-Reactor fuel, currently stored at the Hanford Site, or suggests continued wet storage for N-Reactor fuel.

RESPONSE

DOE has fully evaluated the safety issues associated with SNF management at the Hanford Site and other DOE sites and reported the results of this evaluation in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This EIS evaluates the impacts associated with SNF management at Hanford, including normal emissions and accidental releases and has found that they would be small. The continued management, storage, and chemistry of SNF currently stored at Hanford will be evaluated in the Hanford-specific NEPA reviews. One such NEPA review is being prepared for the transfer of fuel from the K-basins.

Appendix A has been revised to reflect the proposed path forward for the K-basins.

06.02 (011) Existing Facilities

COMMENT

The commentor expresses an opinion that DOE is currently storing "other spent fuel high-level nuclear waste" at the Hanford Site in illegal "once-through" cooling pools that discharge water directly into already contaminated soils and flush contaminants into the Columbia River.

RESPONSE

Storing SNF in basins is not illegal; the SNF storage basins do not use "once-through" cooling. The spent nuclear fuel vulnerability assessment fully describes SNF at Hanford and identifies vulnerabilities associated with this storage. Eight of the Hanford production reactors, all of which have been retired, did use "once-through" cooling systems. Direct discharges to the Columbia River from the K-basins are in accordance with an existing, legal National Pollutant Discharge Elimination System permit. Appropriate measures are being taken to isolate from the rest of the basin a known area in the K-East basin where leaks to the ground have occurred.

06.02 (012) Existing Facilities

COMMENT

The commentor raises an issue about the numerical designation of a specific spent nuclear fuel storage facility.

RESPONSE

The numerical designation of the facility in question is of no intended significance.

06.02 (013) Existing Facilities

COMMENT

The commentor states that the spent fuel capacity, which could be provided by the reracking of the High Flux Isotope Reactor at the Oak Ridge Reservation, is not addressed in the EIS.

RESPONSE

A discussion of the SNF management program at the Oak Ridge Reservation (ORR) is in Volume 1, Appendix F, Part Three, section 2.3.

06.02 (014) Existing Facilities

COMMENT

Commentors suggest that the discussion of transuranic waste in Volume 1, Appendix F, Part Three does not explain how or why the waste is generated. Commentors also question whether the Oak Ridge Reservation has facilities capable of handling more waste than is obligated by present programs.

RESPONSE

Small quantities of radioactive wastes, including transuranic wastes, would usually be generated during some fuel stabilization activities. The quantities identified in Volume 1, Appendix F, Part Three are estimates of the maximum amount that could be generated from these activities. Actual quantities generated are likely to be smaller. A discussion of transuranic wastes is presented in the EIS in Volume 1, section 3.3.4. Additional information about waste generation can be found in the reference, *F-Team Final Report*. This report is available in reading rooms and information locations listed in the EIS.

SNF management generates low-level waste. For ORR, this is described in Volume I, Appendix F, Part Three, section 5.14.2, which states that low-level waste generated by SNF management activities under the wet-storage option is estimated at 7,800 cubic meters, and the dry storage option would generate significantly less. This section shows that ORR has a capacity for storing low-level liquid waste of about 98,300 cubic meters. The addition of 7,800 cubic meters would not significantly impact the capacity or the decisions associated with low-level waste management at ORR.

SNF management also generates small amounts of transuranic waste, although transuranic waste is not shipped to ORR, as commentors' remarks imply. This is discussed in Volume 1, Appendix F, Part Three, section 5.14.2, which states that transuranic waste generated by SNF management activities would be shipped directly to the Waste Isolation Pilot Plant, if it is available. If the Waste Isolation Pilot Plant is not available, ORR transuranic management capacity would be evaluated, including options for additional storage.

06.02 (015) Existing Facilities

COMMENT

Commentors state that reactor-irradiated nuclear materials are currently stored in poor conditions, cite some examples of the vulnerabilities at Idaho National Engineering Laboratory from the *Spent Fuel Working Group Report* and express the opinion that DOE may not manage additional spent nuclear fuel any better in the future.

RESPONSE

Problems at existing SNF storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and their Environmental, Safety and Health Vulnerabilities*. This DOE report, also called the vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, sections 1.1.2 and Appendix J-2, and Volume 2, section 2.2.5. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in Volume 1, section 5.7. For all alternatives analyzed, DOE is committed to comply with applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees.

The Secretary of Energy has publicly affirmed that current DOE policy and practice emphasize safety and environmental considerations above other program goals. DOE is committed to protecting the safety and health of its workers, the public, and the environment. Furthermore, DOE intends to design, construct, and operate facilities in such a way as to provide a level of safety equal to or better than that associated with the operation of commercial facilities. DOE is working as quickly as possible to rectify and eliminate adverse environmental impacts from past programs.

Immediate actions to correct any possible unsafe storage practices and to address SNF vulnerabilities include transfer of SNF from the Underwater Fuel Storage Facility at ICPP-603 and other facilities to new, more modern facilities at ICPP-666. These actions also involve inspection and canning of corroded

fuels. Volume 2, Table 2.2-1 lists specific corrective actions and schedules to address SNF vulnerabilities at INEL.

06.02 (016) Existing Facilities

COMMENT

The commentor asserts that DOE has not demonstrated that safe storage methods are available; that DOE kept secret the fact that spent nuclear fuel storage areas at ICPP-603 had been unsafely storing spent nuclear fuel; that only after a whistleblower gave this information to the State was it admitted by DOE; and that transfers of spent nuclear fuel from ICPP-603 at the Idaho National Engineering Laboratory may not be as safe or as quick as projected.

RESPONSE

DOE is taking the actions necessary to ensure safe SNF storage, including the SNF currently being transferred from ICPP-603. In the absence of substantiation of the commentor's assertion, DOE has no reason to question the safety or speed of the transfers from ICPP-603 or the requirements that ensure safety. DOE has aggressively identified and disseminated information about the vulnerabilities and deficiencies of its SNF management facilities.

See the response to comment 06.02 (015) for more information on vulnerabilities associated with SNF storage.

06.02 (019) Existing Facilities

COMMENT

Commentors state that DOE should reconstruct all existing facilities at the Idaho National Engineering Laboratory that do not comply with the current design standards, such as those for seismic and confinement requirements.

RESPONSE

DOE Order 5480.28, *Natural Phenomena Hazards Mitigation*, sets forth DOE policy for designing, constructing, and operating DOE facilities so that workers, the general public, and the environment are protected from the impacts of natural phenomena hazards on DOE facilities. This Order specifically requires facilities to be reevaluated when there is any change in design and construction standards. Additionally, in accordance with DOE Order 5480.23, *Nuclear Safety Analysis Reports*, existing facilities at INEL are required to undergo periodic safety analyses, including seismic and confinement design reviews. When appropriate, design modifications are made. Besides design modifications, DOE uses emergency preparedness plans and administrative controls to minimize potential hazards.

INEL reactors and confinement structures meet requirements as outlined in their safety analysis reports, safety evaluation reviews, and safety basis documents. These reviews show that potential impacts at the site boundary are within regulatory limits. Engineered barriers are designed for operations that have a potentially high impact or high probability of occurrence.

The seismic analyses, which have been completed for some facilities at INEL, show that most facilities are adequate to meet current earthquake standards. For facilities that do not meet current standards, corrective actions have been identified and implemented. As an example, DOE is taking action to transfer spent nuclear fuels from potentially vulnerable facilities to modern facilities. Further, several of the projects described in Volume 2, Appendix C are proposed by DOE to replace or upgrade existing facilities at INEL.

06.02 (020) Existing Facilities

COMMENT

The commentor states that long-term radiation exposure has compromised spent nuclear fuel confinement barriers in Savannah River Site canyons by changing the concrete into a spongy substance. Additionally, the commentor requests that DOE identify the canyon confinement boundaries and those conditions that will ensure their safe maintenance.

RESPONSE

Periodic inspections of Savannah River Site canyons reveal some erosion of interior surfaces due to long-term exposure to acids and bases. This erosion, or etching, has left the surface with a pitted or spongy appearance. Tests have shown this to be only a surface phenomenon that does not compromise the structural integrity of the 4- to 5-foot-thick concrete confinement barriers.

06.02 (021) Existing Facilities

COMMENT

Commentors state that DOE has failed to recognize in the EIS the problems with existing storage facilities, such as compliance with environmental laws and safety requirements, and question whether the vulnerabilities identified in the *Spent Fuel Working Group Report* will be addressed adequately. One commentor notes that the U.S. District Court ordered immediate action to mitigate unsafe storage practices at the Idaho National Engineering Laboratory.

RESPONSE

As noted by the commentors, DOE prepared a report on vulnerabilities of the current program and has been directed by the Secretary of Energy to develop an integrated, long-term SNF program. The SNF vulnerability assessment and associated action plans to resolve identified vulnerabilities are

acknowledged in Volume 1, section 1.1.2 and Appendix J, and Volume 2, section 2.2.5. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management for all alternatives are discussed in Volume 1, section 5.1, and mitigation measures are discussed in Volume 1, section 5.7. For all alternatives analyzed, DOE is committed to meeting applicable Federal, state, and local requirements and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees. However, under the No Action alternative, the minimum actions deemed necessary for the continued safe management of SNF would be implemented.

Action has been taken at INEL to correct any possible unsafe storage practices, including transfer of SNF from the Underwater Fuel Storage Facility and other facilities into more modern facilities, as well as inspection and canning of corroded fuel. However, the U.S. District Court did not order that immediate action be taken to mitigate unsafe storage practices at INEL.

06.02 (022) Existing Facilities

COMMENT

The commentor asks why Volume 1, Table 1-2 lists only 45 non-DOE facilities, while the text talks about 55 such facilities.

RESPONSE

There are a total of 57 non-DOE facilities representing domestic, licensed, small generators of SNF. The 45 facilities identified in Volume 1, Table 1-2, Appendix E, Table 2.1-1 are non-DOE facilities that may contribute to projected SNF inventories during the next 40 years. The EIS has been revised to make this distinction.

06.02 (023) Existing Facilities

COMMENT

The commentor requests that the word "proposed" be deleted from Volume 1, Appendix E, section 3.3 with regard to the Fort St. Vrain Independent Spent Fuel Storage Installation, because the facility is in operation.

RESPONSE

The requested changes have been made.

06.02 (025) Existing Facilities

COMMENT

The commentor suggests that a reference to Las Vegas being 80 kilometers to the east of the Nevada Test Site is incorrect and should be deleted.

RESPONSE

The sentence intended to infer that the Union Pacific railroad is near Las Vegas, not the Nevada Test Site. The EIS has been clarified.

06.02 (028) Existing Facilities

COMMENT

The commentor identifies three issues related to the transfer of fuel between the K-basins at the Hanford Site.

RESPONSE

Volume 1, Appendix A, section 3.1 and Attachment A discuss basin storage at the Hanford K-basins. The potential for an inadvertent criticality related to this transfer has been considered (Smith, G. L., 1991, Westinghouse Hanford Company, Richland, Washington, internal memorandum to J. P. Schmidt, Westinghouse Hanford Company, Richland, Washington, *Consequences Analyses of Hypothetical K-Basin Accident Scenarios, 105 KE/KW Accident Liquid Discharge*, August 14; and Monthey, M. J., 1993, *Engineering Study of the Transfer of Irradiated Fuels on the Hanford Site*, WHC-SD-TP-ES-001, Rev. 0, Westinghouse Hanford Company, Richland, Washington). The details provided in Volume 1, Appendix A, section 3.1 and Attachment A are adequate for the evaluation and comparison of alternatives in this programmatic EIS.

06.02 (029) Existing Facilities

COMMENT

The commentor requests more information concerning near-term plans for the Hanford Site K-basin fuels.

RESPONSE

The EIS evaluates five alternatives for SNF interim management over a 40-year period. Near-term actions for any specific SNF management location will be the subject of site-specific NEPA evaluations.

Volume I, Appendix A, section 2.3 has been revised to provide additional information on the current status of K-basin fuel. Additional information concerning foreign processing of N-Reactor fuel was added to Volume 1, section 3.2.5 and Appendix A.

06.02 (030) Existing Facilities**COMMENT**

The commentor suggests that removal of all fuel from pool storage at ICPP-603 by December 31, 2000, at the Idaho National Engineering Laboratory be added as a project in Volume 1, Appendix B, Table 3-2 (potential spent nuclear fuel projects for each alternative).

RESPONSE

On-site SNF movement is under-way. This activity is considered part of normal SNF management and is not considered a potential activity.

06.02 (031) Existing Facilities**COMMENT**

The commentor requests that the EIS provide information on the capacity of ICPP-666 following each of the rerack projects and a comparison of the capacities to the amount of SNF expected at the Idaho National Engineering Laboratory under the Ten-Year Plan alternative and the Maximum Treatment, Storage, and Disposal alternative.

RESPONSE

The EIS has been modified to incorporate the requested information. Specific changes are found in Volume 2, Appendix C, Projects SNF2, Increased Rack Capacity for ICPP-666, and SNF3, Additional Increased Rack Capacity (ICPP-666). The comparison to the amount of SNF expected under the Ten-Year Plan alternative and the Maximum Treatment, Storage, and Disposal alternative is provided in Volume 2, section 3.1.1. The EIS has been changed to compare rack capacity and projected inventories under the various alternatives.

06.02 (032) Existing Facilities**COMMENT**

The commentor states that the short-term impacts of the transfer of spent nuclear fuel from ICPP-603 to other facilities are not addressed in the EIS.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

06.02 (033) Existing Facilities

COMMENT

The commentor notes that there has been nuclear waste stored at the Idaho National Engineering Laboratory for the past 40 years, which was not intended to be long-term storage, but expresses the opinion that this does not justify adding additional waste, and that possibly all of it should be moved.

RESPONSE

Volume 2, Chapter 5 and Volume 1, Appendix D discuss the impacts of waste management on INEL and SNF management, respectively. These impacts would be small under all the alternatives considered in the EIS.

06.02 (034) Existing Facilities

COMMENT

The commentor states that the safety of existing technologies and facilities has been demonstrated for decades.

RESPONSE

This comment is consistent with the EIS, which shows environmental impacts from all the alternatives considered would be small.

06.02 (035) Existing Facilities

COMMENT

The commentor states that the EIS does not adequately address spent nuclear fuel facilities and requests that specific information such as layout plans, design standards, proposed safety measures, and environmental monitoring plans be added. Additionally, the commentor states that use of existing facilities is unacceptable because the 40-year project lifetime exceeds the design lifetime of the facilities.

RESPONSE

This is a programmatic EIS to aid in making programmatic decisions for SNF management. As such, it evaluates the general technologies and types of facilities required under the different alternatives. The specific information requested by the commentor will be developed as part of the implementation of the programmatic decisions. The information would be available in later facility-specific NEPA reviews, permit applications and design documents.

DOE recognizes the commentor's concern regarding facility design life. DOE is taking steps to evaluate facility design lives and taking appropriate action to upgrade facilities to safely extend their lives or to replace facilities that cannot be upgraded.

06.02 (036) Existing Facilities

COMMENT

The commentor believes that releases due to degrading cladding have been calculated, and should be used.

RESPONSE

Volume 1, Appendix A of the EIS has been modified to include an evaluation of the risks identified by the commentor.

06.02 (037) Existing Facilities

COMMENT

The commentor questions the capacity of K-basins to combine 105-KE and 105-KW volumes.

RESPONSE

The footnote for Volume 1, Appendix A, Table 3-2 has been changed to clarify the capacities of the K-basins with reracking.

6.3 Inventories (amount and characteristics)

06.03 (001) Inventories (amount and characteristics)

COMMENT

The commentor notes an apparent discrepancy between Volume 1, Table 1-1, which states that there is no existing foreign research reactor spent nuclear fuel in the United States, and the Foreign Research Reactor EIS Implementation Plan, which addresses 15,000 elements of foreign research reactor spent nuclear fuel.

RESPONSE

The Volume 1, Table 1-1 column headed "Existing" refers to SNF currently managed by DOE at DOE facilities. Until received in the United States, FRR SNF is not managed by DOE and is not considered part of the existing inventory. Although the Implementation Plan for the EIS on the *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* refers to 15,000 elements of FRR SNF that would be eligible for return to the United States for management by DOE in the event FRR SNF acceptance policy is renewed, the revised Implementation Plan refers to 25,000 elements of FRR SNF eligible for return to the United States. These elements are not currently in the United States or managed by DOE except for fuel shipments returned under the *Environmental Assessment of Urgent-Relief Acceptance of Foreign Research Reactor Spent Nuclear Fuel* (Draft).

06.03 (002) Inventories (amount and characteristics)

COMMENT

The commentor states that DOE refers to approximately 290 metric tons of heavy metal instead of approximately 1,200 metric tons of spent nuclear fuel at the Idaho National Engineering Laboratory.

RESPONSE

The 290 metric tons of heavy metal (MTHM) and 1,200 metric tons (total assembly weight) of SNF that DOE currently manages at INEL refer to the same amount of material and are consistent. DOE uses the heavy metal content of SNF as a common measure of the amount of fuel matrix in a fuel element. This is done to provide a standard of comparison among fuel types. Fuel elements vary widely in the amount of structural material in relation to the amount of fuel matrix associated with them. The amount of structural materials removed prior to storage may depend on fuel type. MTHM provides a uniform basis for measuring of quantity, irrespective of the structure of the fuel element. DOE recognizes and manages the structural material, either as an integral part of the fuel element, or as a separate material, as appropriate.

06.03 (003) Inventories (amount and characteristics)

COMMENT

The commentor states that the Kema Suspension Reactor Fuel is not addressed in the EIS.

RESPONSE

At the time the Draft EIS was prepared, the Kema Suspension Reactor Fuel was not on the SNF Inventory. Subsequently, the fuel was placed on the inventory. The EIS has been modified to address this fuel. A discussion of the SNF management program at ORR, where the Kema Suspension Reactor SNF is stored, can be found in Volume 1, Appendix F, Part Three, section 2.3.

06.03 (004) Inventories (amount and characteristics)

COMMENT

The commentor points out that Volume 1, Appendix B states that there is no DOE production reactor fuel stored in Idaho. Volume 1, Appendix B, Table 2-2 indicates production fuel is stored at the Idaho Chemical Processing Plant. The commentor suggests resolving this apparent discrepancy.

RESPONSE

The ICPP does not store production reactor fuel, but only stores other aluminum-clad fuel from the Savannah River Site, as referenced in Volume 1, Appendix B, Table 2-2.

06.03 (005) Inventories (amount and characteristics)

COMMENT

The commentor notes that in Volume 1, Table 1-8, the spent nuclear fuel inventory at the Oak Ridge Reservation is 3.02 metric tons of heavy metal and in section 1.1 the inventory is stated to be 2 metric tons of heavy metal and requests clarification.

RESPONSE

The correct SNF inventory at ORR is 3.02 MTHM. The inventory number in Volume 1, section 1.1 has been corrected to 3.02 MTHM.

06.03 (006) Inventories (amount and characteristics)

COMMENT

The commentor notes that Volume 1, Appendix B, Table 2-2 indicates that graphite fuels are stored underwater in ICPP-603 and believes that this is not correct.

RESPONSE

The commentor is correct. Graphite fuels, such as Fort St. Vrain SNF, are not stored underwater in ICPP-603; they are stored dry in the Irradiated Fuel Storage Facility, a separate portion of the ICPP-603 facility. This error has been corrected in the EIS.

06.03 (008) Inventories (amount and characteristics)

COMMENT

The commentor requests spent nuclear fuel inventory information, including fuel type, for all Idaho National Engineering Laboratory storage facilities.

RESPONSE

The primary INEL SNF storage facilities, the types of fuel stored, and the stored configurations are presented in Volume 1, Appendix B, Table 2-2, and the relative properties of SNF at those facilities in metric tons of heavy metal is presented in Volume 1, Appendix B, Figure 2-2. Additional information is available in Volume 1. This document, T. Wichmann letter, Subject *Spent Nuclear Fuel Inventory Data*," is available at any of the reading rooms and information locations listed in the Volume 1 Summary. See also the response to comment 06.03 (013).

06.03 (009) Inventories (amount and characteristics)

COMMENT

The commentor identifies an apparent discrepancy between Idaho National Engineering Laboratory spent nuclear fuel quantities in the EIS (288.68 metric tons of heavy metal) and those given in a presentation to INEL Site-Specific Advisory Board (266.55 metric tons of heavy metal). The commentor requests

clarification, particularly with respect to the fuel rods identified in the 1989 Radioactive Waste Management Information System as having been shipped to the Radioactive Waste Management Complex for disposal.

RESPONSE

Both numbers are correct in the context in which they are given. The presentation to the Site-Specific Advisory Board reflects the inventory as of approximately January 1994, and excludes 17.81 MTHM that were in the Experimental Breeder Reactor-II (EBR-II) at the time. (Nuclear fuel is not considered to be SNF until it has been discharged from a reactor after irradiation.) The number given in the EIS is a June 1994 estimate that reflects the projected inventory as of July 1995. This projected inventory includes the EBR-II, fuel, as well as approximately 4 MTHM of other fuels. These other fuels consist of internal receipts from other INEL reactors and the 19 Naval shipments allowed under the modified Court Order.

The fuel rods identified in the 1989 Radioactive Waste Management Information System are not included in this inventory because no positive determination has been made that they exist. Regardless, disposition of these materials will be resolved by the CERCLA action proposed for the Radioactive Waste Management Complex.

06.03 (010) Inventories (amount and characteristics)

COMMENT

The commentor identifies specific inaccuracies in the EIS dealing with the number of Fort St. Vrain fuel elements that are in storage and that would be transferred to DOE under the agreement, and recommends that the inaccuracies be corrected.

RESPONSE

DOE revised the EIS in response to this comment.

06.03 (011) Inventories (amount and characteristics)

COMMENT

The commentor notes that the EIS incorrectly states that facilities on the Oak Ridge Reservation do not generate or manage spent nuclear fuel, high-level waste, or transuranic waste.

RESPONSE

ORR does generate and manage SNF and transuranic waste. A discussion of SNF generation and storage at ORR is presented in the EIS in Volume I, Appendix F, Part Three, section 2.2. Volume I of the EIS has been modified to correct the statement about generation and storage of SNF and transuranic waste. A discussion of past generation activities at ORR is beyond the scope of this EIS.

06.03 (013) Inventories (amount and characteristics)

COMMENT

The commentor requests that considerably more detail be added to Volume 1, Table 1.1 to more fully characterize the DOE spent nuclear fuel inventory.

RESPONSE

The level of detail requested for SNF characterization is not available in all instances; furthermore, such detail is not essential for a programmatic NEPA document. However, some additional characteristics of the SNF are provided in each site appendix. For example, see Volume 1, Appendix F, Part Three, section 2.3. Additional storage condition characterization can be found in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*, which is referenced in the EIS.

06.03 (014) Inventories (amount and characteristics)

COMMENT

The commentor raises questions about complete reliance on high-efficiency particulate air filters for preventing emissions of radioactive particulates.

RESPONSE

To minimize airborne releases, projects at INEL involving radioactive particulates would take place within a double-confinement structure. Conservative assumptions normally are used to estimate releases to the atmosphere, such as modeling only two filters in series when at least three are planned for actual operations. Also, although high-efficiency particulate air (HEPA) filters have established particulate removal efficiencies of 99.97 percent (down to diameters of 0.3 micrometers), a conservative efficiency factor of only 99 percent typically is used for operational safety and accident analyses. These filters are capable of removing particles as small as 0.001 micrometers from an airstream, but the manufacturer performs the rating calibration at 0.3 micrometers using a standard aerosol-generating device. The filters are tested annually and inspected daily to ensure that their efficiency is maintained.

Safety analyses for forthcoming INEL facility operations will not assume perfect HEPA filter operation. Additional precautions will be taken to minimize airborne releases. The pressure differential across each filter is measured continuously to detect the formation of any holes or insecure filter installation. Filter temperature will be measured to promptly detect a filter fire.

Finally, radiation sensors will be installed downstream of the filters to continuously monitor atmospheric releases. Detection of radioactive particulates above the natural background levels would result in a prompt shutdown of facility operations.

6.3.1 Types

06.03.01 (001) Type

COMMENT

The commentor emphasizes that spent nuclear fuel should be classified as waste.

RESPONSE

The status of SNF is addressed in Volume I, section 7.2.5. Historically, SNF was reprocessed to recover valuable products and fissionable materials. As a recycled material, SNF is not considered a solid waste under RCRA. Since April 1992, however, DOE's focus on most of its SNF has changed to storage and ultimate disposition. This has created some uncertainty with regard to the regulatory status of some DOE SNF. DOE has initiated discussions with EPA, along with state regulators, about whether some SNF should be designated as a waste, and about the potential applicability of RCRA to some of its SNF. Until decisions are made about which additional requirements might apply, SNF is still distinct from solid waste materials.

06.03.01 (002) Types

COMMENT

The commentor states that the EIS does not include substantial quantities of spent nuclear fuel that DOE manages and references the National Academy of Sciences recommendation to manage materials that could be generated from DOE's weapons-grade fissile materials program to an "SNF Standard." The commentor also states that the EIS does not include the recent purchase of 500 metric tons of highly enriched uranium from dismantled nuclear weapons from the former USSR. The commentor is of the opinion that a programmatic EIS not including these potential sources of spent nuclear fuel underestimates the risks and other impacts and prevents meaningful evaluations of alternatives.

RESPONSE

The scope of the programmatic SNF portion of this EIS, described in Volume I, section 1.3, is management of DOE SNF in a safe and environmentally sound manner until decisions regarding its ultimate disposition are made and implemented. For the purpose of this EIS (as described in the Volume 1 Summary), SNF is essentially defined as fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated. SNF inventory also includes uranium/neptunium target material, blanket subassemblies, pieces of fuel, and debris. DOE's

SNF responsibilities, which are addressed in this EIS, include all current or reasonably foreseeable fuel generated by DOE production, research, and development reactors; Naval reactors; university reactors (both domestic and possibly foreign of U.S. origin); and some special-case commercial SNF, such as core rubble from the Three Mile Island Unit 2 reactor.

Materials that would be generated from the DOE weapons-usable fissile materials program, including uranium from dismantled nuclear weapons, are outside the scope of this EIS. These materials, otherwise known as special nuclear materials, are being addressed in the *Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement*, which is currently being prepared. Special nuclear material is defined as (a) plutonium or uranium enriched in the isotope 233 or 235, and any other material that the Nuclear Regulatory Commission, pursuant to the provisions of the Atomic Energy Act of 1954, Section 51, determines to be special nuclear material; or (b) any material artificially enriched by any of the foregoing, but which does not include source material.

The above definitions are contained in Volume I, Appendix H of the EIS. There are distinct differences between the management of SNF and special nuclear materials, such as the level of safeguards and security required.

6.3.2 Hazards

06.03.02 (001) Hazards

COMMENT

The commentor expresses the belief that Navy spent nuclear fuel is probably more stable than other spent nuclear fuel that DOE manages, such as graphite and aluminum spent nuclear fuel, and is thankful that Naval fuel represents a substantial portion of DOE's spent nuclear fuel, because the radioactive materials present in spent nuclear fuel will outlast the cladding and the temporary storage facility.

RESPONSE

DOE agrees that because of the robust nature of Navy SNF, it is more stable and easier to store than the graphite and aluminum fuels. However, as described in Volume I, section 1.1.3 and Appendix J, all types of Navy and DOE fuels will be stored safely until ultimate disposition is decided. For more information on amounts and descriptions of SNF, refer to Volume 1, section 1.1.2 and site-specific Appendices A through F.

06.03.02 (002) Hazards

COMMENT

The commentor contends that the EIS is flawed because it does not indicate that transfer of partly corroded spent fuel is a new venture by DOE, is untested, and may prove to be unsafe.

RESPONSE

DOE has substantial experience with handling and transferring SNF, including some corroded and otherwise damaged fuel. Transfers have been accomplished safely, and appropriate measures would be taken to similarly ensure the safety of future transfers, such as placing the corroded fuel in suitable containers. DOE also has safety analysis systems in place to ensure that the risks of its activities are understood and appropriately minimized. All transfers are conducted in accordance with the safety analysis requirements.

06.03.02 (003) Hazards

COMMENT

The commentor identifies safety concerns related to handling metal fuels.

RESPONSE

The potential impacts from storage of radioactive materials associated with SNF are discussed in Volume I, Chapter 5. The impacts of transporting SNF are also discussed in Volume I, Chapter 5. The environmental consequences of managing SNF, including metal fuels, are presented for all alternatives in Volume I, section 5.1, and mitigation measures are discussed in Volume I, section 5.7. Additional details on the management of metallic SNF are provided in the site-specific appendices to Volume I.

DOE has a program to safely manage, transport, and store all types of SNF and other radioactive materials at each of the sites considered in the EIS.

6.4 Technologies

06.04 (001) Technologies

COMMENT

Commentors recommend several strategies for spent nuclear fuel management, as well as potential technologies for the storing, stabilizing, and treating spent nuclear fuel.

RESPONSE

Some of the management strategies and technologies recommended by commentors are already being actively pursued by DOE, while others are currently speculative and require additional research to determine their effectiveness for managing SNF. Volume I, section 1.1 presents a comprehensive

discussion of the options available for managing SNF, including storage, stabilization, transportation, and preparation for final disposition. Specific technologies to accomplish these options are discussed in Volume 1, Appendix J.

06.04 (002) Technologies

COMMENT

The commentor questions what techniques are being developed to ensure safe, long-term storage of nuclear waste so it cannot be used again.

RESPONSE

Numerous technologies are already available for managing radioactive materials, and others are being actively developed for this purpose. Technological options for managing of SNF are described in Volume 1, section 1.1.3 and Appendix J of the EIS. Current management practices for all types of radioactive wastes are discussed in Volume 2, section 2.2.7, and technology development activities are described in Volume 2, section 3.1. Volume 2 is specific to INEL, but waste management technologies also generally apply to other DOE sites.

06.04 (003) Technologies

COMMENT

The commentor proposes on-site disposition of spent nuclear fuel using technology involving Tela coils.

RESPONSE

DOE is unaware of any technology involving Tela coils that would be of practical benefit in managing SNF. Technologies currently available are summarized in Volume 1, Appendix J. Development of future technologies for managing SNF is beyond the scope of this EIS, and will be subjected to additional NEPA review prior to implementation.

06.04 (004) Technologies

COMMENT

The commentor supports technology development if it results in recycling fuel and ensuring safer long-term storage.

RESPONSE

Numerous technologies are available for managing radioactive materials, and others are being actively developed for this purpose. Technological options for managing SNF are described in Volume 1, section 1.1.3 and Appendix J. Current management practices for all types of radioactive wastes are discussed in Volume 2, section 2.2.7, and technology development activities are described in Volume 2, section 3.1. Volume 2 is specific to INEL, but waste management technologies also generally apply to other DOE

sites. DOE is committed to comply with all applicable Federal, state, and local regulations and DOE Orders. All radioactive materials will be managed to protect the environment and the health and safety of the public and site employees.

06.04 (005) Technologies

COMMENT

The commentor expresses the opinion that the "solution" to nuclear waste is the ceramic glass encasement technology and that this technology should be at Hoquiam and Aberdeen, Washington.

RESPONSE

Technologies for the encapsulation of high-level waste in ceramic or glass logs are being considered for immobilization of such wastes at a number of locations, including INEL's proposed Waste Immobilization Facility. DOE does not currently consider it reasonable to locate such facilities at other DOE sites. Location of similar facilities at sites other than INEL is beyond the scope of this EIS. In addition, Volume 1, Appendix J of the EIS describes technologies that are considered reasonable for SNF management at the present time.

06.04 (006) Technologies

COMMENT

The commentor states that the EIS merely describes potential technologies for processing spent nuclear fuel and does not analyze their potential consequences.

RESPONSE

Volume 1, section 1.1 discusses DOE's plan to develop an integrated, long-term SNF program. The discussion also points out a number of actions that prevent DOE from making all decisions regarding SNF management for the next 40 years at this time. These actions include characterization of certain types of SNF and lack of acceptance criteria for ultimate disposition.

There are more than 90 types of DOE SNF, and any spent fuel that is to be disposed of in a geologic repository must first be characterized under an approved quality assurance program. This characterization database would be used to evaluate each fuel type to determine the extent of conditioning, if any, necessary to meet repository waste acceptance criteria.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

06.04 (008) Technologies

COMMENT

Commentors recommend a particular technology that they believe would be beneficial for the management or disposition of spent nuclear fuel, specifically alternative fuel processing methods, such as the work being conducted at Argonne National Laboratories, and dry cask storage.

RESPONSE

A summary of the technologies for SNF management, including some of the work being done by Argonne National Laboratories, as well as dry cask storage options, are presented in Volume 1, Appendix J. Some of these technologies are already being actively pursued by DOE, while others are currently speculative and would require additional research to determine their effectiveness for managing SNF. To the extent that the technologies recommended are viable, they were considered, with many other recommendations, in the decision-making process for identification of the preferred alternative for SNF management.

06.04 (010) Technologies

COMMENT

The commentor states that no interim decision concerning DOE's metal fuel at the Hanford Site should be made without considering the ultimate treatment measures necessary to prepare this fuel for final disposition, and that some of the treatment options mentioned in the EIS are as yet unproven technologies.

RESPONSE

General technologies and practices for managing SNF, including metal fuels, are discussed in Volume 1, section 1.1.3 and Appendix J. Therein, it is noted that technologies for final disposition of SNF cannot be specified in advance of repository acceptance requirements. These requirements are several years from completion and approval, but a combination of the technologies described in Volume 1, Appendix J may satisfy the eventual acceptance criteria, even though some of them are as yet unproven technologies. Furthermore, consideration is given by the alternatives analyzed in the EIS to providing or maintaining processing flexibility that may prove necessary to meeting the acceptance requirements. Consequently, although the ultimate disposition of SNF is a high priority for DOE, the details of disposition activities have not been finalized and are beyond the scope of this EIS.

06.04 (011) Technologies

COMMENT

The commentor states that the Draft EIS does not adequately address the impacts of the proposals for research and development of technologies to convert liquid high-level waste to a solid form for ultimate disposal and proposals for any necessary interim storage.

RESPONSE

The impacts of proposals regarding converting liquid high-level waste to a solid form for ultimate disposal and proposals for interim storage are discussed under the Project Summary entitled "Waste Immobilization Facility (Technology Selection for Treatment of Sodium-Bearing and Calcined Wastes)." See Volume 2, Appendix C, HLW 2. DOE believes the analysis performed for this project is adequate.

06.04 (012) Technologies

COMMENT

The commentor recommends the quarter sections of land adjacent to the Zoo-East area be identified as an "example site" the first time this site is mentioned in Volume 1, Appendix A, section 5.1, instead of waiting until section 5.1.2 to make this statement.

RESPONSE

The descriptions in Volume 1, Appendix A, sections 5.1 and 5.1.2 are very similar and in close proximity. Thus, there is little chance for confusion about the wording, and no change is required.

06.04 (013) Technologies

COMMENT

The commentor wants Volume 1, Appendix A, Table 5.7-5 to indicate best available control technology used in design.

RESPONSE

Volume 1, Appendix A, section 2.2.2 has been changed to make it clear that DOE standards are followed for all design/construction activities.

6.4.1 Storage

06.04.01 (001) Storage

COMMENT

One commentor states that the EIS alternatives specify either wet or dry storage without explaining either the environmental consequences or reasons for not splitting the two storage types into separate alternatives. Commentors request information on the relative merits of wet storage versus dry storage of

spent nuclear fuel. Commentors state that the EIS does not distinguish the consequences of reprocessing versus dry and wet storage. Information is also requested on spent nuclear fuel types, costs and benefits of processing, short-term activities to fix storage problems, storage facility design, and work-force requirements.

RESPONSE

The EIS discusses wet and dry storage in Volume 1, section 1.1.3 and Appendix J. Within alternatives, estimated impacts of the particular storage type were included as input in modeling used to determine each alternative's impact; therefore, the consequences related to a particular storage type are included in this EIS (see Volume 1, Appendix I, for example). The analyses demonstrate that the impacts of all alternatives considered would be small for both wet and dry storage. Separation into additional alternatives based on storage type is not likely to result in any significant difference in the consequences.

Volume 1, Chapters 1, 4, and 5 and Appendix J, and Volume 2, Chapters 2 and 4 and Appendix F provide the requested information. Volume 1, section 3.3 summarizes the SNF cost evaluation.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS.

06.04.01 (002) Storage

COMMENT

The commentor advocates long-term storage or disposal of spent nuclear fuel in a manner that will allow future generations to recover it and perhaps neutralize it, or otherwise treat it with technologies not available today.

RESPONSE

The ultimate disposition of SNF is outside the scope of this EIS. This EIS addresses interim storage of DOE SNF for a period of up to 40 years, until disposition decisions regarding DOE SNF are made.

06.04.01 (003) Storage

COMMENT

The commentor advocates considering monitored retrievable storage for spent nuclear fuel in lieu of permanent disposal because of concern about criticality issues.

RESPONSE

Although the final disposition of fissile materials and SNF is outside the scope of this EIS, the Nuclear Waste Policy Act (NWPA), as amended, determined that these materials will be disposed of in a geologic repository. DOE is aware of the criticality safety concerns and is considering several potential paths to address these concerns, including processing of some SNF to separate the fissile materials. To

the extent allowed by NWPA, DOE could use monitored retrievable storage for some SNF pending resolution of long-term criticality safety issues.

06.04.01 (004) Storage

COMMENT

commentors suggest that highly enriched spent nuclear fuel and highly enriched spent nuclear materials be stored in aboveground engineered storage facilities.

RESPONSE

As stated in Volume I, Chapter 1: "In 1992, the Secretary of Energy directed the Department to develop an integrated, long-term Spent Nuclear Fuel Management Program. This program is assessing DOE's SNF and fuel storage facilities, integrating DOE's many existing SNF activities into one program, identifying the most appropriate and responsible means of facility operation, and ensuring that issues associated with SNF are resolved safely and cost-effectively." Solutions to the storage questions may require changes in management strategies for these fuels, including such options as the construction of new facilities, including those suggested by the commentor, and stabilization of certain fuels. The program has also established a programmatic objective to define a management path and proceed toward ultimate disposition of DOE SNF. Activities are currently in process to meet or address this objective. Volume 1, Appendix J provides an overview of technologies for SNF management. Storage and disposition of special nuclear materials is beyond the scope of this EIS, but is being analyzed in the *Programmatic EIS for Storage and Disposition of Weapons-Usable Fissile Materials* (see Volume I, section 1.2.3).

6.4.2 Stabilization

06.04.02 (001) Stabilization

COMMENT

The commentor states that the EIS should address the failure of science to turn nuclear waste into a form compatible with people and species on the planet.

RESPONSE

Technology development addressed within this EIS, such as the Waste Immobilization Facility (described in Volume 2, Appendix C, section HLW2), is focused on meeting waste acceptance criteria for ultimate disposition. These criteria will represent the best scientific consensus for a compatible form.

6.5 Ultimate Disposition

06.05 (001) Ultimate Disposition

COMMENT

Some commentors request information on DOE's long-range plans for reprocessing or processing. Some commentors oppose reprocessing of spent nuclear fuel for reasons such as poor past practices and nonproliferation issues, while others support it because they want the fissile material or other valuable resources to be recovered. Other commentors support processing for the purpose of stabilizing the fuels for long-term storage, but oppose reprocessing for purposes of separation and recovery of fissile materials.

RESPONSE

Processing and reprocessing are defined in Volume 1, Appendix H. Processing means "applying a chemical or physical process designed to alter the characteristics of the SNF matrix." Reprocessing is defined as "processing of reactor-irradiated nuclear material (primarily SNF) to recover fissile and fertile material, in order to recycle such materials primarily for defense programs." Thus, reprocessing is only one type of processing. As discussed in Volume 1, Chapter 1, DOE made a policy decision in 1992 that reprocessing of SNF for weapons production would be phased out. This policy is still in effect.

Volume 1, Chapter 1 also indicates that several forms of SNF processing may still be required to stabilize certain types of SNF for safe storage. In addition, there are many different types of fuel with widely differing characteristics that may require treatment for safe storage and final disposition. At this time, repository acceptance criteria for SNF and high-level waste for final disposition have not been defined; therefore, the types of fuels that may require some type of treatment or processing cannot be determined. Many of the treatments being studied do not separate fissile materials, although some do. Because repository acceptance criteria are not defined, it is not currently possible to determine whether fissile material will have to be separated from some fuels (such as fuels containing highly enriched uranium) to meet disposal criteria. Processing and use of existing reprocessing facilities are evaluated in the EIS, because these facilities could be utilized for short-term management of some fuels that were not designed for extended underwater storage, but which are currently being stored underwater. Specific technologies for managing SNF are described in Volume I, Appendix J.

06.05 (002) Ultimate Disposition

COMMENT

Commentors express opinions that DOE is emphasizing transportation of spent nuclear fuel without considering the goals and consequences of these actions, and that DOE advocates relocating spent

nuclear fuel instead of addressing current storage problems and long-term spent nuclear fuel management, including ultimate disposition. Commentors further note that there is no justification for transporting spent nuclear fuel which is currently in storage before final disposition.

RESPONSE

Volume 1, section 1.1 of the EIS presents a comprehensive discussion of the options available for managing SNF, including storage, stabilization, transportation, and preparation for final disposition. Specific technologies to accomplish these options are discussed in Volume 1, Appendix J. These options are incorporated to varying degrees in all of the alternatives, as described in Volume 1, Chapters 3 and 5. Volume 1, Figures 3-1 and 3-6 graphically indicate the number of shipments expected for each alternative, and Figure 3-7 compares estimated shipments among all of the alternatives. The wide range in shipment numbers reflects DOE's desire to consider all realistic transportation possibilities and the related stakeholder concerns. In addition, the alternatives have definite purposes for relocating SNF, such as storing similar fuel types at a single site. In this way, the alternatives attempt to balance transportation concerns with other important considerations, including nonproliferation, worker safety, and cost effectiveness.

Problems at existing storage facilities have been identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This report, commonly called the SNF vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2. Additional site-specific information is presented in Volume 1, Appendices A through F.

Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, DOE is committed to meeting applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees. For all alternatives, the environmental consequences would be small.

Volume 1, section 1.1.3 and Appendix J of the EIS notes that technologies for final disposition of SNF cannot be specified in advance of repository waste acceptance criteria. These requirements are several years from completion and approval, but a combination of the technologies described in Volume 1, Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the alternatives analyzed in the EIS to providing or maintaining processing flexibility that may prove necessary to meeting the acceptance requirements.

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

06.05 (003) Ultimate Disposition

COMMENT

Commentors express the opinion that disposal of spent nuclear fuel would result in the loss of valuable resources, including some of the fission products, in addition to the uranium and plutonium, and urge that DOE carefully guard and conserve these resources as well as pursue new and innovative ways of neutralizing the dangers of spent nuclear fuel and making use of its constituents. Additionally, some commentors state that concentrating such resources in a particular location could cause future generations to attempt to mine them.

RESPONSE

Under the Nuclear Waste Policy Act, as amended (Section 122), disposing of SNF in a geologic repository requires that the material be retrievable for recovery of economically valuable contents for a relatively short period of time. This requirement will be met by appropriate siting and design criteria for the repository. In accordance with EPA's environmental standard (40 CFR 191), institutional controls and provisions for safeguards and security will be implemented to address human intrusion considerations.

06.05 (004) Ultimate Disposition

COMMENT

The commentor states that DOE should stop trying to appease the public and create a repository in Nevada or stop generating nuclear energy.

RESPONSE

Volume 1, Chapter 2 states the purpose and need for DOE action. DOE must deal in an environmentally sound manner with the SNF remaining in inventory, and with the small amounts to be produced from other programs. Neither disposal nor generation is within the scope of this EIS.

06.05 (005) Ultimate Disposition**COMMENT**

The commentor states that the EIS does not adequately integrate important information related to ultimate disposition (e.g. availability, cost, and acceptance criteria) with decisions on spent nuclear fuel treatment, storage, and stabilization.

RESPONSE

General solutions for managing SNF are discussed in Volume 1, section I.1.3 and Appendix J. These sections note that technologies for final SNF disposition cannot be specified in advance of repository waste acceptance requirements. These requirements are several years from completion and approval, but a combination of the technologies described in Volume 1, Appendix J may satisfy the eventual acceptance criteria. Furthermore, consideration is given by the various alternatives in both Volumes 1 and 2 of the EIS to providing or maintaining processing flexibility that may prove necessary to meet the acceptance requirements. As stated in Volume 1, Chapter 2, activities related to the final disposition of SNF are beyond the scope of this EIS.

06.05 (007) Ultimate Disposition**COMMENT**

The commentor states that, because there is obviously no risk associated with any alternatives, we should abandon construction of the Yucca Mountain repository and retain the site for use as a storage facility using existing technologies, because they have been demonstrated to be so safe.

RESPONSE

The EIS analyses indicate that the environmental impacts for all alternatives considered would be small. Nevertheless, Congress has mandated in the Nuclear Waste Policy Act, as amended, that DOE develop geologic repository(s) for permanent disposal of SNF and high-level waste to ensure that this and future generations are protected from the hazards of this material. Accordingly, DOE is proceeding to characterize the Yucca Mountain site to determine if it is a suitable site for a repository. Until such a repository is available, DOE will continue to store its SNF in accordance with the results of this EIS and ROD.

06.05 (008) Ultimate Disposition

COMMENT

Commentors state that criteria necessary for safe temporary or permanent disposal of spent nuclear fuel should be identified and the alternatives compared with them. Commentors give a list of criteria that should be addressed, including transportation risks and accidents, human health risks after disposal, pollution prevention, and cost.

RESPONSE

The ultimate disposition of SNF, including risks after disposition is beyond the scope of this EIS. Volume I, section 3.3 compares the impacts of the alternatives considered for managing SNF, including most of the topics identified by the commentor, including public health effects and risks from operations, transportation, and accidents. Volume 1, Chapter 5 and supporting appendices and reference materials discuss the potential environmental consequences and identify possible measures to mitigate impacts in the interim until disposal in the repository. Congress has mandated in the Nuclear Waste Policy Act, as amended, that the need for a repository and all alternatives to geologic disposal for SNF and high-level waste need not be considered by DOE.

In following the requirements of NEPA, this EIS includes a complete description of the impacts and risks associated with all of the alternatives considered for SNF management. This EIS compares the various alternatives and, as discussed in Volume 1, section 3.3.6, DOE evaluated the cost of the proposed alternatives. This evaluation is available to the public.

Refer to Volume I, Chapter 1 for an overview of DOE Spent Nuclear Fuel Management activities.

06.05 (009) Ultimate Disposition

COMMENT

The commentor is of the opinion that spent nuclear fuel could be reprocessed at the Hanford Site; therefore, all spent nuclear fuel should be sent there for reprocessing.

RESPONSE

DOE considered in this programmatic EIS the potential for processing SNF for stabilization purposes. In 1992, DOE instituted a policy that phased out reprocessing for weapons production. No SNF is being reprocessed at the Hanford Site. Because existing facilities at Hanford are not capable of reprocessing many of the fuel types managed by DOE, and due to significant safety concerns of operating existing reprocessing facilities there, DOE has no plan to reprocess material at the Hanford Site with existing facilities.

06.05 (010) Ultimate Disposition

COMMENT

The commentor expresses an opinion that the EIS does not address the problems associated with the safe long-term storage of spent nuclear fuel.

RESPONSE

The potential impacts from SNF storage over a 40-year period are fully discussed in Volume 1, Chapter 5 and the Volume 1 site-specific appendices. Specific environmental consequences of SNF management are presented for all alternatives analyzed in Volume 1, section 5.1, and mitigation measures are described in section 5.7. Further details are provided for each site in Volume 1, Appendices A through F.

DOE has a program to safely manage and store SNF at each of the sites considered in the EIS, and technological options for dealing with current and future inventories are discussed in Volume 1, Appendix J. In general, DOE has established a policy of designing, constructing, and operating its facilities in ways that meet applicable Federal, state, and local requirements and DOE Orders. All radioactive materials are managed in a manner that ensures protection of the environment, the health and safety of the public, and site employees.

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

06.05 (011) Ultimate Disposition

COMMENT

Commentors question the schedule for ultimate disposal of spent nuclear fuel with regard to perceived delays in New Mexico and Nevada, and problems with the associated siting process. Some commentors state that the proposed repositories are not the answer to spent nuclear fuel management.

RESPONSE

The repositories to which the commentors apparently refer are the Waste Isolation Pilot Plant (WIPP) in New Mexico, for disposal of defense transuranic (TRU) wastes, and the Yucca Mountain site in Nevada, for disposal of commercial SNF and high-level wastes. Although the ultimate disposition of DOE SNF and TRU wastes, and the perceived delays in the availability of associated facilities are outside the scope of this EIS, the assumptions used in evaluating alternatives for interim management of SNF and managing TRU wastes at INEL are discussed in this EIS.

As described in Volume 2, section 2.2.7, DOE plans to transport all stored and newly generated TRU waste that meets the waste acceptance criteria to WIPP. DOE's current schedule is to demonstrate compliance with the disposal requirements as mandated in the WIPP Land Withdrawal Act of 1992 (Publication 102-579) and begin waste disposal operations in 1998. Alternatives for managing that waste in the interim are described in Volume 2, section 3.1.3.

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

See also the response to comment 04.01 (005).

06.05 (012) Ultimate Disposition**COMMENT**

The commentor believes that long-term management of spent nuclear fuel is extremely problematic and probably beyond human capability.

RESPONSE

General technologies and practices for managing SNF are discussed in Volume 1, section 1.1.3 and Appendix J. The EIS evaluates impacts of SNF management alternatives during the next 40 years until the SNF can be disposed of in a geologic repository. For the long-term (beyond 40 years), repository siting and design requirements contained in the Nuclear Regulatory Commission's regulations (10 CFR 60) address issues that span geologic time to ensure safe isolation of this material. Therein it is noted that technologies for final disposition of SNF cannot be specified in advance of repository acceptance requirements. These requirements are several years from completion and approval.

See also the responses to comments 06.05 (007) and 06.05 (010) for additional information on final disposition of SNF.

06.05 (013) Ultimate Disposition**COMMENT**

The commentor states that based on the overall risks of the spent nuclear fuel management alternatives evaluated in the EIS, DOE should adopt an alternative plan that facilitates acceptance of foreign research reactor fuels because the risks of doing so would be small compared with the possible dangers to the United States from the diversion of fuel abroad.

RESPONSE

The policy on acceptance of foreign research reactor fuels is not within the scope of this EIS. See the response to comment 06.09 (013) for additional discussion.

06.05 (014) Ultimate Disposition**COMMENT**

The commentor asks if there is any research going on to find a better plan for spent nuclear fuel disposal than encapsulation or vitrification, which the commentor asserts have been shown in testing not to work.

RESPONSE

DOE, and others, are researching techniques to process SNF for disposal. Contrary to the commentor's statement, encapsulation and vitrification are viable technologies for certain spent fuels, as discussed in Volume I, Appendix J. In all Volume I alternatives except No Action, research would continue, to

ensure that there will be a broad base of technologies available, including vitrification, encapsulation, and multipurpose canisters, for treating SNF to meet the repository acceptance criteria.

06.05 (015) Ultimate Disposition

COMMENT

The commentor believes that solutions do not exist for the problems of spent nuclear fuel and other wastes, including commercial sources and low-level waste. The commentor also states that an integrated approach for dealing with these wastes is needed.

RESPONSE

General solutions for managing SNF are discussed in Volume 1, section 1.1, and technological options for dealing with the current and future inventories are described in Volume I, Appendix J. DOE has a program for safely managing and storing SNF at each of the sites considered in the EIS. The DOE Environmental Management Program prepared the *DOE-Owned Spent Nuclear Fuel Strategic Plan* for the safe, reliable, and efficient management of DOE SNF and its preparation for disposal. This plan is available to the public. All SNF and other wastes will be managed to ensure protection of the environment and the health and safety of the public and site employees. While DOE complex-wide management of wastes is outside the scope of this EIS, the *Waste Management Programmatic EIS* is currently being prepared to address an integrated national approach for dealing with these wastes. The Draft *Waste Management Programmatic EIS* will be issued for public comment later this year.

06.05 (016) Ultimate Disposition

COMMENT

Commentors express the opinion that DOE is avoiding making a clear choice of a path forward on overall management of spent nuclear fuel, including a decision as to ultimate disposition, by alluding to the preparation of future documents to clear up the missing pieces to the "ultimate solution." It was suggested that the experience exists to make a decision now. Commentors express frustration that a national nuclear policy has not been established, and long-range plans do not exist. Such policy and the "ultimate solution" should include the total energy picture and its associated environmental impacts, nonproliferation, ultimate disposition of spent nuclear fuel and nuclear waste, and other "nuclear age" problems. Permanent solutions are favored over interim solutions. Commentors prefer the No Action alternative for spent nuclear fuel management.

RESPONSE

This EIS addresses the interim programmatic management of DOE SNF nationwide, in addition to site-wide environmental restoration and waste management activities at INEL. Yucca Mountain is being studied as the potential site for the first geologic repository. If the site is found suitable, acceptance of

commercial SNF is expected to begin in 2010. Although acceptance of DOE high-level waste is planned for 2015, the date for acceptance of DOE SNF at the repository has not been finalized. The 40 years for SNF management is based on the maximum amount of time considered necessary to implement decisions on the ultimate disposition of DOE SNF. DOE, through this EIS, solicited public comment regarding both program needs. Regarding INEL activities, this period is indexed to both strategic planning periods and budget forecasts, as well as looking into the future as far as reasonably foreseeable regarding specific site-wide programs. The programmatic SNF 40-year period is based on the maximum amount of time considered necessary to make and implement decisions on the ultimate disposition of SNF by fuel type, to define the criteria necessary to implement such disposition, and to have the facilities (such as geologic repositories) available to implement ultimate disposition. The need for such interim management is discussed in Volume 1, Chapter 2, and the EIS Summary in greater detail. Accordingly, DOE is evaluating a reasonable range of alternatives for the safe and environmentally sound management of its SNF, as well as the No Action alternative required by law. The programmatic SNF portion of the EIS will be reviewed and updated as necessary.

With respect to establishing an overall national nuclear or energy policy, this EIS is devoted to setting the strategy for the period required to develop and implement decisions on ultimate disposition. Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

National policy with regard to the overall management of DOE's waste is being established through the preparation of the *Waste Management Programmatic EIS*, which is on a parallel course with this EIS. The site-wide management of INEL waste streams is being coordinated with the programmatic document, which will set the overall strategic approach. Commercial SNF and waste management

activities are not within the scope of either this SNF or the *Waste Management Programmatic EIS* currently being prepared. National energy policy is not within the scope of any of these documents.

See the response to comment 03.05 (007) regarding alternative sources of energy. See the response to comment 01.01.01.01 (008) regarding preference for the No Action alternative.

06.05 (017) Ultimate Disposition

COMMENT

A commentor states that the ultimate disposition of DOE spent nuclear fuel is generally similar to situations facing nuclear power utilities in the United States and other nuclear reactors worldwide. Thus, the commentor suggests that all spent nuclear fuel be turned over to the International Atomic Energy Agency for choice of one final repository. Other commentors suggest that an international approach be taken regarding spent nuclear fuel disposition or storage issues.

RESPONSE

The scope of the EIS for SNF is discussed in Volume I, Chapters 1 and 2. These chapters explain that this EIS is restricted to considering temporary storage (through 2035) and related interim measures for managing only DOE SNF. Consequently, the location and nature of a geologic repository, especially for commercial SNF and SNF of international origin, are not included in this EIS because they are separate, independent actions and the subject of Presidential and Congressional policies. SNF and high-level waste disposition is subject to the Nuclear Waste Policy Act, as amended, which restricts current repository siting evaluations to the Yucca Mountain site in Nevada. No treaties or other arrangements are in place or envisioned as being feasible to combine SNF disposition efforts with those occurring outside the United States. Nevertheless, among the technologies described in Volume I, Appendix J are several options that would prepare SNF for satisfying eventual repository acceptance requirements. These options are consistent with SNF disposition approaches being actively pursued or under consideration in other countries. Also, as outlined in Appendix J, DOE maintains an awareness of international SNF efforts to take advantage of any technological advancements elsewhere that would be helpful in the United States.

06.05 (019) Ultimate Disposition

COMMENT

The commentor suggests that funds should not be expended on moving toxic waste until final disposition is known.

RESPONSE

DOE is committed not only to developing a Federal geologic repository for permanent isolation of SNF and high-level waste, but to providing safe interim storage pending availability of permanent disposal facilities. DOE has a program for safely managing and storing radioactive materials at each of the sites considered in the EIS. Analyzing transportation of SNF and waste materials is necessary to varying degrees under the alternatives DOE is analyzing for providing safe interim storage and management of SNF and waste materials. The alternatives have definite purposes for relocating SNF and waste materials, such as storing and/or treating similar fuel and waste types within a single secure facility. Thus, the alternatives attempt to balance transportation concerns with other worthy considerations, including nonproliferation, worker and public health and safety, and cost effectiveness.

06.05 (020) Ultimate Disposition**COMMENT**

The commentor suggests disposing of spent nuclear fuel at sea, enclosed in a submarine, in a geologic repository, or in outer space. Another commentor opposes disposing of spent nuclear fuel at sea.

RESPONSE

In the late 1970s the Federal Government evaluated a full range of reasonable alternatives for ultimate disposition of SNF and high-level waste. These alternatives included mixed geologic disposal, sub-seabed disposal, island disposal, and space disposal. As a result of this evaluation, documented in a generic EIS issued in 1979 by DOE, Congress mandated in the Nuclear Waste Policy Act in 1983 and its 1987 amendment that geologic repositories be developed for permanent disposal of SNF and high-level waste, that research and development or alternative means and technologies for permanent disposal be continued and accelerated (section 222) and that, in particular, sub-seabed disposal be initiated and progress reported periodically to Congress (section 224). DOE is proceeding with these activities.

06.05 (021) Ultimate Disposition**COMMENT**

The commentor states that to resolve the overall problem of storage of all types of spent nuclear fuel, DOE should press ahead to determine where the ultimate repository of spent nuclear fuel will be. Additionally, the commentor urges DOE to complete the EIS process, and adopt the Navy's preferred alternative for Naval fuel.

RESPONSE

Volume I, section 3.1 shows the actions that would be undertaken by DOE to the extent required by the Navy's preferred alternative. Activities related to the management of SNF, including research and

development activities would be included. DOE is continuing to aggressively pursue investigation of the candidate repository site at Yucca Mountain in Nevada for disposal of high-level waste and SNF.

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the total quantity of DOE SNF and high-level waste not exceeding 10 percent (by weight) of the first repository capacity limit (70,000 metric tons of heavy metal), DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

06.05 (023) Ultimate Disposition

COMMENT

The commentor suggests that highly enriched spent nuclear fuel may never meet repository waste acceptance criteria due to criticality and safeguards concerns.

RESPONSE

DOE agrees that highly enriched SNF is an issue regarding repository disposal, in particular concerns about criticality. This issue is being addressed by DOE and the Nuclear Regulatory Commission. If the fuel must ultimately be processed to satisfy the repository acceptance criteria, Volume I, section 1.1.3 and Appendix J of the EIS discuss the available technologies that may be needed for final disposition of SNF.

06.05 (026) Ultimate Disposition

COMMENT

The commentor states that until final repository siting and its requirements are assigned, it is unreasonable to consider other elements of the spent nuclear fuel program.

RESPONSE

As the EIS discusses, interim management of SNF must be addressed for up to the next 40 years pending ultimate disposition. The alternatives identified and evaluated in the EIS represent a full range of reasonable alternatives for managing SNF, including the No Action alternative. The environmental

impacts of these alternatives, along with other decision factors such as cost, mission impacts, and public comment, will be considered in the decision-making process leading to the ROD.

06.05 (028) Ultimate Disposition

COMMENT

The commentor states that DOE's Environmental Management and Office of Civilian Radioactive Waste Management should have an integrated approach to discussion of spent nuclear fuel and a joint effort be undertaken to define the ultimate disposal in a geologic repository. The commentor also recommends that the EIS be revised to include a road map that would demonstrate a joint approach.

RESPONSE

Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

As part of this path forward strategy, the Office of Environmental Management and the Office of Civilian Radioactive Waste Management have established a working group to provide an integrated approach to identify and address technical, regulatory, and institutional issues regarding disposal of DOE SNF in the geologic repository. This working group has made significant progress in defining the issues and establishing work plans to address them.

06.05 (029) Ultimate Disposition

COMMENT

The commentor asks about the potential long-term radiation of DOE's waste, and supports the Ten-Year Plan alternative for disposal of spent nuclear fuel at the Idaho National Engineering Laboratory.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives.

Volume 1, Chapter 5 summarizes the radiological impacts associated with all the alternatives considered in this EIS, including using existing facilities and constructing new ones. Volume 1, section 3.3 summarizes the cost of alternatives. The health and safety of workers and the public has been considered in the evaluation of these alternatives and the identification of a preferred alternative. The information provided on radiological impacts and facility costs is considered adequate for evaluation and comparison of the impacts of all the alternatives considered in this EIS.

Volume 1, section 3.1 describes the preferred alternative for SNF management. See the response to comment 04.04 (008). Volume 2, section 3.4 discusses DOE's preferred alternative for SNF management, environmental restoration, and waste management activities at INEL. See the response to comment 04.04 (011).

06.05 (030) Ultimate Disposition**COMMENT**

The commentor states that the repository for spent nuclear fuel will not take DOE fuels and that decisions on managing Hanford Site materials should not be based on a mythical repository, but it should be assumed that it will remain at Hanford forever. The commentor also states that the Monitored Retrievable Storage negotiations with Indian Tribes have not been successful.

RESPONSE

Although activities associated with licensing and opening the repositories or Monitored Retrievable Storage are outside the scope of this EIS, general solutions for managing SNF in the interim are within the scope of this EIS and are discussed in Volume 1, section 1.1 and Appendix J of the EIS. More detailed descriptions are in the Volume 1 site-specific Appendices A through F. Therein it is noted that technologies for final SNF disposition and a geologic repository site cannot be selected in advance of repository performance requirements and waste acceptance criteria. These requirements and criteria are several years from completion and approval. The repository must then be constructed and certified, which could require decades to properly accomplish. Evaluating and opening disposal sites for radioactive materials is time consuming. Yucca Mountain is being studied as the potential site for the first geologic repository. If the site is found suitable, acceptance of commercial SNF is expected to

begin in 2010. Although acceptance of DOE high-level waste is planned for 2015, the date for acceptance of DOE SNF at the repository has not been finalized. DOE acknowledges these challenges by allowing up to 40 years for a suitable repository to become fully operational.

06.05 (031) Ultimate Disposition

COMMENT

The commentor has an opinion on the second geologic repository being used for disposition of higher reactivity spent nuclear fuel.

RESPONSE

Under the Nuclear Waste Policy Act, as amended, DOE is not authorized to work on a second repository and is required to report to the President and to Congress between January 2007 and January 2010 on the need for a second repository. Concerns regarding disposal of higher-reactivity (enriched) SNF is being addressed for the first repository between DOE Office of Environmental Management and Office of Civilian Radioactive Waste Management.

6.6 Interim Management

06.06 (001) Interim Management

COMMENT

The commentor states that the EIS does not evaluate reasonable, safe alternatives for spent nuclear fuel storage.

RESPONSE

DOE believes that the alternatives analyzed in this EIS are reasonable and in accordance with NEPA and Council on Environmental Quality (CEQ) requirements to consider a range of reasonable alternatives. Alternatives range from the No Action alternative, required by law, to an alternative that consolidates all SNF at one of five sites. Alternatives dismissed are discussed in Volumes 1 and 2, section 3.2. DOE believes the discussion of the basis for dismissing other possible alternatives is adequate.

06.06 (002) Interim Management

COMMENT

The commentor states that possible future contamination of the Idaho National Engineering Laboratory (ICPP-666) storage pool from spent nuclear fuel transferred from ICPP-603 could produce an environmental impact.

RESPONSE

Volume 2, Appendix C, SNF4-1 discusses the Canning Characterization Project that could be instituted under various alternatives at ICPP to keep this situation from occurring.

06.06 (003) Interim Management**COMMENT**

Commentors express opinions that the interim spent nuclear fuel management program sites will become "de facto" permanent storage sites for the nation and perhaps the world, and that the decision on a permanent storage site will be delayed. In addition, several commentors express the view that these sites may not be suitable for permanent disposal of spent nuclear fuel, but because they may be politically and economically weak, the storage sites will be forced on them.

RESPONSE

It is not DOE's intent to allow interim SNF storage sites to become de facto permanent storage sites. In fact, Congress mandated that the Federal Government pursue the development of a geologic repository for the permanent disposal of SNF and high-level waste and directed DOE to study the Yucca Mountain site in Nevada to determine if it is suitable for this purpose. DOE currently is pursuing those directions. DOE is committed to developing facilities for permanent isolation of SNF and high-level waste. Pending availability of such disposal sites, DOE must provide for safe and environmentally sound storage and management of these materials. The implementation of safe interim storage and transition to ultimate disposition represents the solution that DOE seeks to define with this EIS.

This EIS objectively evaluates 10 sites as reasonable alternatives for some level of interim SNF management activity, without regard to or consideration of political or economic factors. The analyses in the EIS include environmental considerations, socioeconomic impacts, potential risks to the public from operations and reasonably foreseeable accident conditions, and other environmental factors for a number of options for management of SNF. The EIS concludes that the alternative sites are environmentally suitable for management of SNF and that there would be no significant risk to the public or the environment due to interim management of SNF at any of the 10 sites being considered.

DOE considered public comment while preparing the EIS, upon which decisions will be based. Although the EIS provides DOE with an informed basis for decisionmaking from the perspective of environmental impacts and public comment, decisions will also consider such factors as national needs, schedules, and costs. In addition, implementation of decisions is subject to independent processes, including Congressional funding and environmental permitting. DOE intends, however, to develop and implement a national SNF management strategy that best serves the overall needs of the nation.

06.06 (005) Interim Management

COMMENT

The commentor asks DOE to quantify the relationship between the capacity of any new storage facilities planned and DOE's total inventory of spent nuclear fuel.

RESPONSE

The storage capacity required to safely manage the existing and projected SNF inventories depends on the programmatic approach selected by DOE. However, SNF storage facilities, complex-wide, would be sized to provide the storage capacity required under the programmatic approach selected, considering the availability of qualified existing storage under the specific alternative, at the specific site.

06.06 (006) Interim Management

COMMENT

The commentor notes that the transfer of fuels from Idaho Chemical Processing Plant Building 603 (ICPP- 603) to the newer storage pool in ICPP-666 is not assessed in the EIS.

RESPONSE

As discussed in Volume 2, Chapter 3, phasing out wet storage in ICPP-603 and moving fuel to ICPP-666 is part of the No Action, Ten-Year Plan, and Maximum Treatment, Storage, and Disposal alternatives. The impacts of moving this fuel have been assessed as a part of the overall impacts of these alternatives, as described in Volume 2, section 5.1.

06.06 (007) Interim Management

COMMENT

The commentor notes that the EIS does not discuss the Test Area North Dry Cask Storage Project in Appendix B, section 3.1.1.3, where it would be expected. The commentor states that rather than moving the spent nuclear fuel to the Idaho Chemical Processing Plant, it could be stored on an expanded pad at Test Area North with less transportation, less handling, and less attendant risk. In addition, the commentor states alternatives to moving spent nuclear fuel from Test Area North to Idaho Chemical Processing Plant should be evaluated in the EIS.

RESPONSE

The Test Area North Dry Cask Storage Project is proceeding as an interim action. Volume 2, Appendix F discusses two projects related to the use of Test Area North: (1) dry fuel storage facility and fuel receiving, canning, characterization and shipping; and (2) Test Area North pool fuel transfer.

Volume 2, section 2.2 states that as part of the vulnerability corrective action plan, DOE plans to move SNF management activity from Test Area North to a more central location.

06.06 (008) Interim Management**COMMENT**

The commentor states that relocation of spent nuclear fuel will only enlarge the area of the environment that will later have to be restored, because both the old storage area from which the spent nuclear fuel will be moved and the a new area to which it will be moved will both have to be restored eventually.

RESPONSE

Volume 1, section 1.3 discusses safe and environmentally sound management of SNF until decisions regarding its ultimate disposition are made and implemented. Storage options at each generating site and other storage options are analyzed. The analysis of the storage options of each alternative includes the estimated type and size of a representative storage facility potentially needed at each site.

DOE believes that relocation of some SNF could be a beneficial management strategy. New facilities would be designed both for safe storage and for more effective restoration when they are decommissioned. Removing SNF from older facilities in the near term could serve to reduce future environmental and safety problems and allow restoration activities to begin.

06.06 (009) Interim Management**COMMENT**

The commentor notes that the EIS states: "DOE has scheduled the installation and operation of new fuel characterization and canning equipment in the Irradiated Fuel Storage Facility before the Record of Decision (1995)." According to Westinghouse Idaho Nuclear Company, the earliest such a facility will be operating is early to mid-1996, and the location has not been determined.

RESPONSE

Installation of new fuel characterization and canning equipment in the Irradiated Fuel Storage Facility is now tentatively scheduled for early 1996. The text of the EIS has been revised to reflect this change in schedule.

06.06 (011) Interim Management**COMMENT**

The commentor notes that DOE sites predominantly use wet storage, and only limited dry storage experience exists within DOE. The commentor recommends that DOE consider commercial experience wherever possible to increase regulator and public acceptance, and reduce schedule and cost.

RESPONSE

Current and projected DOE SNF inventories are considered in this EIS. Existing storage facilities are identified, and their status, capacities, and accident histories are described. SNF container design,

integrity, corrosion and corrosion byproducts, storage technologies, and storage facility design life are factored into the EIS analysis for each alternative. Storage options at the site of generation and other storage options are analyzed. The analysis of the storage options for each alternative includes the estimated type and size of representative storage facilities potentially needed at each site. Commercial experience is considered whenever possible to increase public acceptance and reduce costs and schedules.

6.7 Cost

06.07 (001) Cost

COMMENT

Commentors want cost evaluation to be part of this EIS.

RESPONSE

Volume 1, section 3.3.6 summarizes the costs for implementing actions under each alternative. In addition, a discussion of the cost evaluation has been prepared for use by decisionmakers. For each alternative, the cost evaluation considers capital costs for upgrades, operations, maintenance, decontamination, decommissioning, and transportation. The evaluation also addresses additional systems costs, including disposition.

06.07 (005) Cost

COMMENT

The commentor expresses the opinion that a spent nuclear fuel management facility (spent nuclear fuel receipt, inspection, processing, and temporary storage) would be less costly if built near the spent nuclear fuel final storage repository, and that the cost of such a facility would be lower if it were built now rather than in the future.

RESPONSE

The commentor may be correct in asserting that economies of scale and transportation cost savings would help lower the eventual cost of a centralized SNF management facility located near a permanent SNF waste repository. It is also true that inflation causes cost escalations for facilities built in the future rather than now. DOE considered these issues when it identified the preferred alternative.

06.07 (006) Cost

COMMENT

The commentor indicates that the costs of handling and storing DOE spent nuclear fuel are considerably higher than equivalent costs for commercial fuel and asks whether characterization facilities are really needed and whether overseas processing of spent nuclear fuel might be more cost effective.

RESPONSE

Volume 1, section 3.3.6 summarizes the cost for implementing actions under each alternative. For each alternative, the cost evaluation considers capital costs for upgrades, operation, maintenance, decontamination, decommissioning, and transportation. The evaluation also addresses additional system costs, including disposition. This is adequate for evaluating and comparing the alternatives considered in this programmatic EIS. Volume 1, section 3.1 discusses the requirements for characterization facilities under all of the alternatives discussed in this EIS. Volume 1, section 3.2 has been changed to further evaluate overseas processing of SNF.

06.07 (007) Cost

COMMENT

The commentor states that the cost of removing and mitigating environmental hazards associated with spent nuclear fuel will increase in the future, so decisions need to be made soon.

RESPONSE

The commentor may be correct in assuming that costs may increase over time. Volume 1, section 3.3.6 of the EIS summarizes the costs of managing SNF. The ROD for this EIS will be issued by June 1, 1995.

06.07 (008) Cost

COMMENT

The commentor asks that cost considerations be weighed against radiological impact and suggests that using existing facilities could lower costs.

RESPONSE

Volume 1, Chapter 5 summarizes the radiological impacts associated with all the alternatives considered in this EIS, including using existing facilities and constructing new ones. Volume 1, section 3.3.6 summarizes the cost for implementing actions under each alternative. The health and safety of workers and the public has been considered in the evaluation of these alternatives and the identification of a preferred alternative. The information provided on radiological impacts and facility costs is considered adequate for evaluating and comparing the impacts of all the alternatives considered in this EIS.

06.07 (009) Cost

COMMENT

Commentors state that the cost of the corrective action plans for the problems identified in the *Spent Fuel Working Group Report* are underestimated and should have been included in this EIS.

RESPONSE

A summary of specific corrective actions to address the SNF vulnerabilities at INEL identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities* at INEL are listed in Volume 2, Table 2.2-1. Many of the corrective actions are currently under way or have been completed. Those activities for which NEPA review was complete before the ROD for this EIS was issued are analyzed under the No Action alternative. Although NEPA does not require an analysis of the costs of implementing alternatives in an EIS, DOE prepared a cost evaluation for all alternatives that includes the SNF facilities; the results are summarized in Volume 1, section 3.3.6.

06.07 (010) Cost

COMMENT

The commentor states that "moving nuclear waste around from 'interim site' to 'interim site' is dangerous and extremely expensive." The commentor also states that funds would be put to better use "cleaning up and organizing individual sites and developing a program to eliminate waste."

RESPONSE

DOE evaluated the transportation impacts of shipping SNF; the results are presented in Volume 1, Appendix I, and Volume 2, section 5.11. DOE's cost evaluation of the proposed alternatives, summarized in Volume 1, section 3.3.6, shows that transportation costs do not differ among alternatives. Transportation of the entire DOE inventory between widely dispersed sites was analyzed to provide a reasonable range of alternatives and associated impacts for decisionmakers to consider. These evaluations show that the impacts of all the alternatives considered in this programmatic EIS would be small.

06.07 (011) Cost

COMMENT

Commentors state that the cost information presented is not truthful and that the costs will be higher than stated.

RESPONSE

Volume 1, section 3.3.6 summarizes the cost for implementing actions under each alternative. In addition, a reference to the cost evaluation has been added to the EIS. DOE has provided a significant amount of information in these documents to allow independent evaluation of the costs.

06.07 (012) Cost**COMMENT**

The commentor believes that the Federal Government should have to pay a tariff to locations willing to house spent fuel.

RESPONSE

The government provides support to communities that have Federal facilities and projects, through the creation of jobs and other associated benefits. Payments to areas willing to accept SNF would be determined by Congress or the President and are outside of the scope of this EIS.

06.07 (013) Cost**COMMENT**

The commentor raises issues regarding the costs and scheduling of alternatives being considered within this EIS.

RESPONSE

While cost and schedule issues will be considered in the decisions facilitated by this EIS, these are administrative issues that are beyond the scope of this EIS. DOE prepared a cost report, which estimates the cost of each of the alternatives under consideration in this EIS. This report is summarized in Volume I, section 3.3.6 and is available to the public.

06.07 (014) Cost**COMMENT**

The commentor states that the "massive" cost estimates for ICPP-666 and dry spent nuclear fuel storage "lead us to wonder whether the scale of these projects might be a Trojan horse" to allow shipments of additional spent nuclear fuel and other nuclear materials.

RESPONSE

Decisions for storing other nuclear materials will be decided through other NEPA documents, including those discussed in Volume 1, section 1.2. Facility costs are based on compliance with nuclear facility requirements, as identified in DOE Order 6430.1A, *General Design Criteria*. The size and cost of these facilities vary by alternative and the proposed amount of SNF to be stored.

06.07 (015) Cost

COMMENT

The commentor states that the cost of each proposed alternative and assumptions should be available to the public and included in the EIS.

RESPONSE

While cost and scheduling issues will be considered in the decisions facilitated by this EIS, these are administrative issues that lie beyond the scope of the EIS itself. DOE prepared a cost report, which estimates the cost of each of the alternatives under considerations in this EIS. This report is summarized in Volume 1, section 3.3.6 and is available to the public.

6.8 Commercial Spent Nuclear Fuel

06.08 (000) Commercial Spent Nuclear Fuel

COMMENT

The commentor requests that DOE accept greater-than-Class-C sealed sources from commercial nuclear power plants, and that the EIS be expanded to include acceptance of commercial power reactor fuel and high-level waste.

RESPONSE

Volume 2, section 3.1 discusses acceptance of greater-than-Class C sealed sources for recycling or storage for all of the alternatives analyzed except the Maximum Treatment, Storage, and Disposal alternative. As discussed in Volume 1, Chapter 1 and the Implementation Plan, this EIS does not address commercial power plant SNF or high-level waste, which are the subjects of the Nuclear Waste Policy Act, as amended.

06.08 (001) Commercial Spent Nuclear Fuel

COMMENT

The commentor raises issues regarding commercial spent nuclear fuel, particularly with respect to compensating communities for storage as is being discussed with tribal governments for commercial spent nuclear fuel monitored retrievable storage.

RESPONSE

This EIS pertains to the programmatic management of DOE SNF. Issues regarding SNF under the cognizance of commercial power utilities are beyond the scope of this EIS. Compensation to tribes as part of negotiations between the former Nuclear Waste Negotiator and various entities to establish a commercial SNF monitored retrievable storage facility is likewise beyond the scope of this EIS.

06.08 (002) Commercial Spent Nuclear Fuel

COMMENT

The commentor states that the Project Summary for Fort St. Vrain spent fuel shipments needs some factual corrections.

RESPONSE

The Fort St. Vrain Project Summary has been corrected.

06.08 (003) Commercial Spent Nuclear Fuel

COMMENT

The commentor states that there may be a relationship between DOE spent nuclear fuel and commercial spent nuclear fuel.

RESPONSE

Except for a very few special-case situations as described in Volume I, section I.I, this EIS does not discuss SNF from commercial power nuclear reactors. Volume I, Chapter 2 states that the decisions that must be made to establish an effective program for DOE SNF are a) where to conduct SNF management activities, b) the appropriate facilities, capabilities and technologies for SNF management, and c) the research and development activities to support the SNF management program.

See also the response to comment 04.01 (001).

06.08 (004) Commercial Spent Nuclear Fuel

COMMENT

The commentor notes that the EIS fails to fully consider that the remaining useful life of the facility where the Fort Ft. Vrain fuel is to be stored will be exceeded by 2015, well before a repository is expected to be ready for this fuel.

RESPONSE

In Volume 2, Chapter 3, DOE proposes a dry storage facility in each of the alternatives in which Fort St. Vrain SNF would be received. Yucca Mountain is being studied as the potential site for the first geologic repository. If the site is found suitable, acceptance of commercial SNF is expected to begin in 2010. Although acceptance of DOE high-level waste is planned for 2015, the date for acceptance of DOE SNF at the repository has not been finalized. DOE considered that the design life of the facility may be exceeded before a repository is ready. In the event that engineering studies cannot justify extending the use of the existing facility, Fort St. Vrain SNF would be moved to the new dry storage facility.

06.08 (006) Commercial Spent Nuclear Fuel

COMMENT

The commentor urges DOE to consider all contractual obligations to accept spent nuclear fuel equally, and refers specifically to Fort St. Vrain fuel.

RESPONSE

DOE considered its contractual obligation to accept specific fuels in its identification of a preferred alternative for programmatic SNF management.

06.08 (007) Commercial Spent Nuclear Fuel

COMMENT

The commentor states that DOE is responsible for accepting spent nuclear fuel and high-level waste from commercial power reactors, referring to commercial spent nuclear fuel that DOE is obligated to manage after 1998.

RESPONSE

As described in Volume 1, Chapter 1, this EIS focuses on DOE SNF from production, research and development reactors, Naval reactors, university and foreign research reactors, and miscellaneous generators. Management of commercial SNF is beyond the scope of this EIS. DOE's responsibility with respect to commercial SNF is within DOE's Office of Civilian Radioactive Waste Management.

06.08 (008) Commercial Spent Nuclear Fuel

COMMENT

The commentor states that, with respect to the No Action alternative, Public Service Company of Colorado would not be able to transport the remaining spent nuclear fuel from the Fort St. Vrain facility and release the facility for unrestricted use.

RESPONSE

DOE recognizes that this would be a consequence of the No Action alternative. This has been considered in DOE's identification of a preferred alternative for SNF management.

6.9 Miscellaneous

06.09 (001) Miscellaneous

COMMENT

The commentor states that the EIS should also include plans for dealing with errors or misjudgments and provide compensation for damages for those locations that accept spent nuclear fuel.

RESPONSE

Potential accidents and the impacts associated with these accidents are generally discussed in Volume 1, section 5.1, and treated in more detail in Volume 1, Appendices A through F. DOE includes contingencies for dealing with errors in its planning for new facilities and activities, as well as procedures for existing facilities and activities. An in-depth analysis of the impacts of operations and potential accidents is provided for SNF management operations in Volume 1, Appendices A through F, and for INEL restoration and remediation activities in Volume 2. The analyses include potential hazards and consequences and the possible methods, measures, or controls to be employed to minimize them. The analyses confirm that the risk from SNF management operations is small.

DOE will use the statutory indemnity contemplated by the Price-Anderson Act (42 USC 2210) to ensure ready and prompt availability of funds to compensate the public for injuries and damages resulting from a nuclear incident arising from activities conducted by indemnified DOE contractors. Compensation provided under the Act would cover nuclear incidents at INEL as well as nuclear incidents during the transport of material to and from the site.

Although the Price-Anderson Act is the primary means for compensating the public for damages from nuclear incidents, other remedies exist for claims not falling within the purview of the Act. For example, claims against DOE or its employees may be cognizable under the Federal Tort Claims Act, and claims for environmental damage may fall within CERCLA. These and other laws afford an injured party mechanisms for seeking recovery for damages related to operation of DOE facilities.

06.09 (002) Miscellaneous

COMMENT

The commentor states that spent nuclear fuel does not require treatment prior to disposal and that DOE is proposing treatment facilities only so that it can remain in the weapons production business.

RESPONSE

Volume 1, section 1.1.3 discusses technologies for managing SNF, and more details on fuel management technologies are provided in Volume 1, Appendix J. Therein it is acknowledged that some SNF may not require treatment prior to disposal in a repository. However, there are many different types of fuel with widely differing characteristics, which may make treatment necessary. At this time, repository waste acceptance criteria have not been defined; therefore, the fuels that might require treatment cannot be determined at present. Processing is being considered to provide the chemical or mechanical stability needed for ultimate disposition or to meet limits on size or amount of fissile material in individual containers.

Many of the SNF treatment technologies being studied do not require separation of uranium or plutonium, and thus would not be related to the weapons production business. As discussed in Volume 1, Chapter 1, DOE made a policy decision in 1992 that reprocessing of SNF for weapons production would be phased out. That policy is still in effect.

06.09 (003) Miscellaneous

COMMENT

The commentor expresses the opinion that if people are unhappy with the current situation with respect to spent nuclear fuel, they should participate in solving the problem, rather than complaining.

RESPONSE

Through the public scoping process and the public comment period on the Draft EIS, many people and organizations have participated in developing solutions to the SNF problem.

06.09 (004) Miscellaneous

COMMENT

The commentor states that the inset entitled "What is Spent Nuclear Fuel?" in the Summary is "rather inadequate and 'harmless' as far as the lay public is concerned."

RESPONSE

This insert was provided to clarify the definition of SNF for the public. It has been modified to better accomplish that.

06.09 (005) Miscellaneous

COMMENT

Commentors request that DOE address spent nuclear fuel management program priorities in the EIS in light of funding and other limitations. commentors also request that the public be allowed to comment on the priorities.

RESPONSE

The Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities and associated action plans address some of DOE's immediate SNF management priorities. The Phase I Action Plan was issued in February 1994, the Phase II Action Plan in April 1994, and the Phase III Action Plan in October 1994. These action plans currently are being implemented.

Additionally, DOE has issued the *DOE-Owned Spent Nuclear Fuel Strategic Plan*. This plan addresses the issues associated with the management of SNF and its preparation for disposal. The plan is available in the reading rooms and information locations listed in the EIS.

06.09 (006) Miscellaneous

COMMENT

The commentor expresses the opinion that disposal of spent nuclear fuel in a repository will result in the concentration of valuable resources at a particular site and that it would attract generations in the future who would want to mine the resources.

RESPONSE

The ultimate disposition of SNF is not within the scope of this EIS. This EIS considers interim storage until the decisions on ultimate disposition are made. The process that will decide the manner of ultimate disposition will consider the resource value of SNF and its constituents, along with long-term management and security concerns, including human intrusion.

06.09 (007) Miscellaneous

COMMENT

The commentor, although supportive of options that would help solve the plutonium (and highly enriched uranium) waste problem, feels the Isaiah Project is not an appropriate option.

RESPONSE

The Isaiah Project has been proposed to consume excess plutonium as a mixed-oxide fuel in commercial power-production reactors (specifically within the Washington Public Power Supply System). Such projects concern the management of existing special nuclear material, not SNF (which is no longer being reprocessed to yield recycled fissile material). The Isaiah Project is not included in the alternatives considered in this EIS and its adoption or rejection would not change the need to select a method for SNF management. Future management of the current inventory of special nuclear material will be addressed in the forthcoming EIS for *Storage and Disposition of Weapons-Usable Fissile Material*. Preparation of that EIS was recently announced in Volume 59 of the *Federal Register*, pages 31985 through 31989.

06.09 (008) Miscellaneous

COMMENT

The commentor questions why the EIS frequently mentions reprocessing activities and that the Court noted that none of the fuel brought to the Idaho National Engineering Laboratory has been reprocessed.

RESPONSE

The commentor seems to be referring to Fort St. Vrain SNF. While there has been substantial reprocessing of some SNF at INEL over its 40-year history, no Fort St. Vrain SNF has been reprocessed. The existing processing facilities at INEL do not have the capability to reprocess graphite matrix fuels, such as the fuel used at Fort St. Vrain.

06.09 (009) Miscellaneous**COMMENT**

The commentor asserts that the illustration of a fuel rod and a fuel assembly in the fact sheet *What is Spent Nuclear Fuel* is not representative of the vast majority of spent nuclear fuel managed by DOE and the Navy. Additionally, the commentor states that the other illustrations and descriptions of spent nuclear fuel in the EIS summaries do not include descriptions of many fuels, including Navy fuels, Shippingport, and TRIGA fuels.

RESPONSE

The illustrations and descriptions in the fact sheet and the EIS summaries were chosen by DOE because they help provide a basic understanding of the typical components of SNF. DOE is not attempting to provide detailed descriptions of the numerous SNF types in this EIS; rather, DOE is describing the basic considerations, such as cladding type and condition, that are germane to a general understanding of SNF management.

06.09 (010) Miscellaneous**COMMENT**

The commentor asks DOE to responsibly manage the radioactive materials (including radioactive wastes and spent nuclear fuel) that DOE helped to create and wants to give DOE 2 years to make significant strides in decontamination, stabilizing, and managing radioactive wastes, or replace it.

RESPONSE

DOE acknowledges its responsibility for safe management of radioactive materials, including SNF and radioactive wastes. DOE is committed to comply with all applicable Federal and state laws and regulations, DOE Orders, and interagency agreements governing SNF and radioactive and hazardous wastes. According to Volume 2, Chapter 2, two programmatic EISs are being prepared at the national level regarding DOE's SNF Program (Volume 1) and DOE's Environmental Restoration and Waste Management Program (a separate forthcoming document). Additionally, DOE prepared a *DOE-Owned Spent Nuclear Fuel Strategic Plan* for the safe, reliable, and efficient management of DOE SNF and its preparation for disposal. This plan is available to the public.

For more discussion on DOE's legal authority and responsibility for managing radioactive materials, see the response to comment 03.04 (010).

06.09 (011) Miscellaneous

COMMENT

The commentor states that receipt of spent nuclear fuel from foreign research reactors may overload existing storage capacities at the Norfolk Naval Shipyard.

RESPONSE

Volume 1, section 4.6 of the EIS states that the Norfolk Naval Shipyard is being considered solely for temporary storage of Naval SNF, not SNF from DOE facilities or international sources. Hampton Roads, Virginia, is a potential port of entry being analyzed in the forthcoming EIS on the *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* (Draft).

06.09 (013) Miscellaneous

COMMENT

One commentor favors keeping foreign spent nuclear fuel out of the United States. Others question the need, cost, motive, legality, or reasons behind such returns, especially given the ability to manage FRR SNF overseas. Another commentor states that this EIS should address what happens before the fuel lands on our shores.

RESPONSE

Alternatives related to the acceptance of FRR SNF of United States origin, including shipping, are being analyzed in a separate EIS. This EIS does analyze the impacts of domestic transportation and management of FRR SNF, which represents less than 1 percent of all SNF addressed in this EIS, should a decision to return such fuel be made. The environmental impact analyses are designed to produce a reasonable projection of the upper bound for potential environmental consequences. This requires the use of appropriately conservative assumptions and analytical approaches. In this context, "conservative" means that an assumption or analysis would tend to overpredict, rather than underpredict, any adverse impacts.

However, overly conservative analyses do not provide a useful basis for comparing alternatives. DOE will not make a final decision on the acceptance of FRR SNF until the EIS on a *Proposed Nuclear Weapons Nonproliferation Policy Concerning Foreign Research Reactor Spent Nuclear Fuel* and this EIS are completed.

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

06.09 (014) Miscellaneous

COMMENT

The commentor discusses the need for cleanup at other sites, including non-DOE sites, including consideration of alternatives that gauge environmental and accidental risks. It was noted that the EIS should address these problems. The commentor states that DOE has willfully and illegally failed to request the funding necessary to cease discharges and implement best available treatment and closed fuel cooling to meet the deadlines in the Hanford Cleanup Agreement. The commentor states this leads to a lack of confidence for the storage of any additional fuels at Hanford.

RESPONSE

Cleanup at sites other than INEL is not within the scope of this EIS, which addresses programmatic management of SNF at all sites (Volume 1), and limited to cleanup and waste management activities at INEL (Volume 2). However, the Secretary of Energy has publicly affirmed that current DOE policy and practice emphasizes safety and environmental considerations above other program goals. DOE is working closely with EPA to remediate and eliminate adverse environmental impacts from past programs. No significant potential environmental impacts have been identified for any of the alternatives identified in the EIS for SNF management.

06.09 (016) Miscellaneous

COMMENT

The commentor states that at a public meeting unrelated to the EIS, the commentor's suggestion to reuse nuclear waste was ignored. The commentor also states that the current administration has an anti-nuclear policy.

RESPONSE

This EIS pertains to the programmatic SNF management and SNF management, environmental restoration, and waste management at INEL. SNF reprocessing to recover uranium and plutonium for defense purposes is being phased out as a matter of national policy. As discussed in Volume 1, section 1.1.3, however, SNF processing is being evaluated for certain types of SNF for the purpose of stabilizing, rather than the recovering, fissile materials, which would not eliminate the need for storage and eventual disposal. The nuclear policy of this administration is outside the scope of this EIS.

06.09 (017) Miscellaneous

COMMENT

The commentor expresses opinions regarding storage or disposition of fissile material, including such material if foreign research reactor and spent nuclear fuel are reprocessed in Europe.

RESPONSE

These concerns relate to the management of special nuclear material, not DOE SNF, which is no longer being reprocessed to recycle fissile material. Future management of the current inventory of special nuclear material will be addressed in the forthcoming EIS for the *Storage and Disposition of Weapons-Usable Fissile Material*, as described in Volume 1, section 1.2.3. See also the response to comment 06.09 (013).

06.09 (019) Miscellaneous

COMMENT

The commentor expresses an opinion that areas of little or no population and/or areas not near sensitive resources are best suited for the management of spent nuclear fuel. The commentor also urges DOE to select the safest site for the management of spent nuclear fuel.

RESPONSE

Although SNF management activities can safely coincide with high population or otherwise sensitive areas, risks can be higher in such areas. However, public perceptions of risk from DOE and/or Navy activities tend to significantly exceed the risks as presented in this EIS.

The EIS evaluates 10 sites as reasonable alternative sites for some level of SNF management. The analysis in the EIS includes a number of factors, including the risk to the public from operations and reasonably foreseeable accident conditions. Discussions on public health and safety can be found in the Occupational Public Health and Safety sections in Volume 1 (and its associated site-specific appendices A through F) and in the Health and Safety section in Volume 2. The EIS concludes that the consequences to the public and the environment due to SNF management activities at any of the 10 sites under consideration would be small. DOE tries to avoid high-population areas to the extent practicable.

06.09 (021) Miscellaneous

COMMENT

The commentor raises questions regarding management of special nuclear materials and secondary wastes generated by spent nuclear fuel processing, specifically the Actinide Recycle Demonstration Project, and questions details of the Actinide Recycle Demonstration Project. The commentor requests

that the EIS provide additional information on projects or facilities that are in preliminary planning stages.

RESPONSE

The Electrometallurgical Process Demonstration Project (formerly the Actinide Recycling Demonstration Project) is discussed in Volume 2, section 3.1.1, where SNF activities under the various alternatives are discussed. More detailed information is in Volume 2, Appendix C, section SNF8. The objectives of this demonstration are to investigate electrochemical processing of SNF, to produce a waste form that is potentially suitable for a geologic repository, and to quantify volumetric reduction factors. This demonstration would produce high-level radioactive waste containing fission products, because SNF would be processed. Mixed wastes also would emerge because of electrorefiner operation involving cadmium, plus sodium contaminants in the SNF to be used for this demonstration. Management of special nuclear materials such as highly enriched uranium is being covered by a separate EIS and is outside the scope of this EIS. Specific information is not available for facilities that have not been constructed or activities that have not been conducted to acquire a valid baseline. Generic projects have been included in the EIS as placeholders to present readers with as comprehensive a range of forthcoming projects as is currently possible. These projects or facilities may require additional NEPA documentation. At such time, accurate information on secondary waste generation will be provided for an assessment of impacts on waste management.

06.09 (022) Miscellaneous

COMMENT

The commentor states that the period of interim storage addressed in this EIS should not fix the date of repository availability, and that consideration should be given to recycling rather than disposal.

RESPONSE

Decisions as to the ultimate disposition of SNF have not been made, and are outside the scope of this EIS. Ultimate disposition of DOE SNF is a high priority. For planning purposes, DOE had determined that the SNF managed by DOE that is not otherwise dispositioned (e.g., chemically separated, with the high-level waste being converted into a vitrified glass for repository disposal) is authorized for disposal in the first repository. This authorization is subject to the physical and statutory limits of the first repository, DOE SNF meeting repository acceptance criteria, and payment of fees. As part of its SNF management program, DOE would (1) stabilize the SNF as needed to ensure safe interim storage, (2) characterize the existing SNF inventory to assess compliance with the first repository's acceptance criteria, and (3) determine what processing, if any, is required to meet the criteria. Decisions regarding the actual disposition of DOE SNF would follow appropriate review under NEPA and be subject to

licensing by NRC. This path forward would be implemented so as to minimize impacts on the first repository schedule.

The 40-year period of interim management proposed in this EIS is designed to bound the date for decisions on ultimate disposition to be made and necessary facilities, such as a potential repository, available for implementation. Yucca Mountain is being studied as a suitable geologic repository. If the site is found suitable, acceptance of commercial SNF is expected to begin in 2010. Although acceptance of DOE high-level waste is planned for 2015, the date for acceptance of DOE SNF at the repository has not been finalized.

The current policy of DOE precludes the reprocessing of SNF to recover fissile materials. Although such policies are subject to periodic review, a need for the recovery or recycling of such materials is not currently foreseen.

06.09 (023) Miscellaneous

COMMENT

The commentor believes that nonfinancial costs of spent nuclear fuel management, to the environment, resources, and people, should be included in DOE's decision.

RESPONSE

DOE interprets the nonfinancial costs identified by the commentor to mean impacts to the environment. Volumes 1 and 2, Chapter 5 summarize the environmental impacts for all of the alternatives considered in this EIS. The impacts for all of the alternatives would be small.

06.09 (024) Miscellaneous

COMMENT

Commentors express opinions about the history of spent nuclear fuel mismanagement.

RESPONSE

The condition of SNF management facilities is the result of a number of factors. Regardless of those factors, it was recognized that the condition of these facilities cast doubt on the ability to continue to safely manage SNF. Therefore, DOE prepared a report commissioned by the Secretary of Energy on vulnerabilities of the current program and has been directed by the Secretary to develop an integrated, long-term SNF program. The SNF vulnerability assessment and associated action plans to resolve identified vulnerabilities are identified in the EIS in Volume 1, section 1.1.2 and Appendix J, and Volume 2, section 2.5.2. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of SNF management for all alternatives are discussed in Volume 1, section

5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, the impacts would be small.

06.09 (026) Miscellaneous

COMMENT

The commentor indicates that information on the Fort St. Vrain site was incorrect and provided appropriate data.

RESPONSE

These data have been incorporated into Volume 1, section 4.7.3, and Volume I, Appendix E, section 3.3.2.

06.09 (027) Miscellaneous

COMMENT

The commentor suggests minor text revisions to the Fort St. Vrain project summary in Volume 2.

RESPONSE

The EIS has been changed to reflect the commentor's recommendation for text changes to the Volume 2 summary.

06.09 (028) Miscellaneous

COMMENT

The commentor notes that Volume I, Appendix A, section 2.1.4 fails to mention the Bechtel Hanford Company and states the opinion that privatization of certain activities may bring additional contractors into key roles.

RESPONSE

The following sentence was added to the end of Volume I, Appendix A, section 2.1.4: "In 1994, the Bechtel Hanford Company and a team of subcontractors became DOE's environmental restoration contractor at the Hanford Site." Future contractor arrangements at the Hanford Site are outside the scope of this EIS.

06.09 (030) Miscellaneous

COMMENT

The commentor states that the EIS does not solve the current Idaho National Engineering Laboratory spent nuclear fuel problems, let alone the ones that will be there in 40 years.

RESPONSE

Volume 1, Chapter 1 discusses DOE's plan to develop an integrated, long-term SNF program. The discussion also points out a number of reasons why DOE cannot make all decisions regarding SNF management for the next 40 years at this time. These reasons include (a) lack of characterization data on the interim storage behavior of certain types of SNF and (b) lack of acceptance criteria for ultimate disposition. Volume 1, Appendix J identifies a number of activities currently under way to define a management path and proceed toward ultimate disposition. This EIS is one step in the plan to address ultimate disposition.

This EIS is not a decision-making document; rather, it is a tool designed to aid the decision-making process by evaluating the environmental consequences of proposed actions and their alternatives. This information is used by decisionmakers in conjunction with other information, such as costs and budgets, to determine a course of action.

06.09 (033) Miscellaneous

COMMENT

Commentors request information on the relative merits of wet storage versus dry storage of spent nuclear fuel. Commentors state that the EIS does not distinguish the consequences of reprocessing versus dry and wet storage. Information is also requested on spent nuclear fuel types, costs and benefits of processing, short-term activities to fix storage problems, storage facility design, and work-force requirements. Other commentors question why the two storage types are not split into two alternatives.

RESPONSE

Volume 1, Chapters 1, 4, and 5 and Appendix J, and Volume 2, Chapters 2 and 4 and Appendix F provide the requested information. Volume 1, section 3.3 summarizes the *Spent Fuel Management Cost Evaluation Plan*. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

06.09 (035) Miscellaneous

COMMENT

The commentor expresses a general opinion that engineering has its limitations and fails to take into account consequences and that the consequences of that engineering bring about and put a tremendous burden on the whole society to solve those problems.

RESPONSE

The commentor's opinion regarding engineering and its perceived limitations is noted.

06.09 (037) Miscellaneous**COMMENT**

The commentor wants to keep spent nuclear fuel where it is until "we come up with something safe."

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. While there are differences in the impacts among the alternatives, these differences by themselves are not sufficient to distinguish between alternatives. Volume 1, section 3.1 describes the preferred alternative for programmatic SNF management.

See also the response to comment 04.04 (008).

06.09 (038) Miscellaneous**COMMENT**

The commentor objects to reactor irradiated nuclear material continuing to be generated and causing serious health effects.

RESPONSE

Eliminating all current and future generation of DOE SNF would not significantly diminish the handling, storage, and final disposition challenges DOE faces. Inventories of DOE SNF are addressed in Volume 1, section 1.1. Approximately 86 percent of the current inventory originated in DOE weapons-production reactors that have ceased to operate. Another 8 percent was generated in DOE experimental reactors, most of which have been shut down. According to Volume 1, Table 1-1, the additional SNF to be generated over the next 40 years (until 2035) will amount to only a 3-percent increase in the current inventory. Eliminating sources of DOE SNF altogether would require halting nuclear Navy operations and nuclear research at universities, which is not within the control of DOE and is outside the scope of this EIS.

06.09 (040) Miscellaneous**COMMENT**

The commentor asks how DOE will correct storage problems and what new designs have been tested for handling and storing spent nuclear fuel. Furthermore, the commentor is of the opinion that the EIS does not address the broad issues of permanent storage and availability of mature technology.

RESPONSE

The potential impacts of storing radioactive materials associated with SNF are discussed in Volume 1, Chapter 5. Environmental consequences of SNF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7.

Problems at existing storage facilities have been identified in *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities*. This report, commonly called the SNF vulnerability assessment, and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J-2. Additional site-specific information is presented in Volume 1, Appendices A through F.

At INEL, there is an ongoing dry storage demonstration project to gain information and experience with using commercial dry storage casks for DOE fuels. Dry storage is addressed in Volume 1, section 1.1.3 and Appendix J.

Volumes 1 and 2, and Appendix D discuss the impacts of waste management on INEL and SNF management. These impacts would be small under all alternatives considered in the EIS. DOE determined that the transfer of SNF at INEL from potentially unsafe storage to a newer storage facility is an effective interim action that can be conducted prior to completion of this EIS. Depending on the alternative selected in the ROD for this EIS, various projects are proposed for interim storage and treatment of SNF pending a later decision on ultimate disposition. DOE will implement the reflected projects, described in Volume 2, Appendix C, to address the deficiencies with current storage. The proposed projects include reracking of existing underwater storage facilities to more effectively use their capacities, constructing modular dry storage facilities for longer-term storage, and processing facilities to treat and stabilize some SNF for interim storage. Commercial experience is considered whenever possible to increase public acceptance and reduce costs and schedules. The alternatives analyzed attempt to balance considerations such as using existing facilities, minimizing transportation, consolidating similar fuels, and others.

06.09 (041) Miscellaneous

COMMENT

The commentor states that DOE fails to explain how spent nuclear fuel should be properly managed and disposed of.

RESPONSE

Volume 1, section 3.1 describes the preferred alternative for programmatic SNF management. Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small. Volume 1, Appendix B, Chapter 2, specifically discusses INEL's program objectives.

See also the response to comment 04.04 (008).

06.09 (042) Miscellaneous**COMMENT**

The commentor states that the EIS fails to take an integrated approach to addressing the multitude of issues involved in handling and storing spent nuclear fuel.

RESPONSE

Volume 1, Chapter 1 discusses DOE's plan to develop an integrated, long-term SNF program. Volume 1, Appendix J identifies a number of activities currently under way to define a management path to proceed toward ultimate disposition. DOE's *Plan of Action to Resolve Spent Nuclear Fuel Vulnerabilities* identified in the *Spent Fuel Working Group Report on Inventory and Storage of the Department's Spent Nuclear Fuel and Other Reactor Irradiated Nuclear Materials and Their Environmental, Safety and Health Vulnerabilities* identified this EIS as a vehicle to address the lack of a path forward for the ultimate disposition of SNF. In addition, this EIS focuses on a programmatic approach to SNF management. Site-specific SNF management issues will be addressed by additional NEPA reviews tiered from this EIS.

06.09 (043) Miscellaneous**COMMENT**

The commentor requests that more details and options be provided in the EIS concerning costs of alternatives, storage facility design, types of processing, improved long-term storage safety, and final spent nuclear fuel disposition. The commentor states that many of these same concerns were raised during the scoping meetings and have not been adequately addressed, including minimization of spent nuclear fuel transportation.

RESPONSE

The EIS has been augmented to include the estimated range of costs for each of the SNF programmatic alternatives. The technological options for interim storage, transportation, stabilization, and processing are discussed in Volume 1, Appendix J. Evaluation of specific designs and technology options are not required at the programmatic NEPA level and will be analyzed in follow-on site-specific NEPA

documents. DOE received approximately 1,900 comments during on the EIS scoping process. DOE attempted to respond to all the public concerns; however, the ultimate disposition of DOE SNF cannot be specifically addressed in this EIS due to unknown future requirements for geologic repository acceptance criteria, which in turn affect stabilization and treatment strategies. The range of technological options that DOE believes may be required for stabilization, treatment, or preparation for ultimate disposal are discussed in Volume 1, Appendix J. Minimization of transportation is a DOE goal consistent with safe and efficient operations.

06.09 (044) Miscellaneous

COMMENT

The commentor states that the EIS should evaluate the best storage form, processing requirements and other technical considerations required for long-term management of spent nuclear fuel.

RESPONSE

Volume 1 of the EIS is programmatic in nature and addresses the major management decisions while laying the groundwork for the more specific technical decisions that the commentor believes should be evaluated, such as the best storage form and processing requirements for specific fuel types. However, the EIS discusses the current SNF management problem and the need for action in Volume 1, Chapter 1. Technical considerations and solutions to the management problems are addressed in Volume 1, Appendix J, including storage options, containers, and processing options.

06.09 (046) Miscellaneous

COMMENT

The commentor states that storage is not the optimum strategy for spent nuclear fuel management. The commentor also states that plutonium is too readily available for making weapons and that it must be degraded as rapidly as possible while maintaining the safety of the environment and the ability to recover other valuable constituents.

RESPONSE

This EIS does not consider ultimate disposition of SNF; rather it considers interim storage until the decisions on ultimate disposition of special nuclear material are made. The process that will decide the manner of ultimate disposition, which is the subject of another EIS, will consider the resource value of SNF and its constituents, as well as the necessary safeguards against diversion of materials for weapons production. DOE has a program for safely managing and storing SNF and other radioactive materials at each of the sites considered in the EIS. DOE will manage SNF in accordance with applicable Federal, state, and local requirements and regulations and DOE Orders in a manner that protects the environment and the health and safety of the public and site employees.

06.09 (047) Miscellaneous

COMMENT

The commentor requests that specific corrections or specific additional information regarding the management options for the fuel elements at the Veterans Administration Medical Center, Omaha, Nebraska, be included in the EIS.

RESPONSE

As described in footnotes to Volume 1, Appendix E, Table 2.1-3, the Veterans Administration Medical Center in Omaha, Nebraska, is a Category 2 Facility that does not routinely generate SNF. No SNF is expected to be generated by this facility during the period covered by this EIS. Volume 1, section 1.1.2, Table 1-2 has been deleted from the EIS because it duplicated Volume 1, Appendix E, Table 2.1-3.

06.09 (049) Miscellaneous

COMMENT

The commentor states that Volume 1, Appendix J does not appear to recognize the complexities that occur when spent nuclear fuel is damaged, and that oxidation products on the outside of fuel are a source of facility contamination during canning. The commentor states that the EIS should be modified to address this omission.

RESPONSE

The section of Volume 1, Appendix J to which the commentor refers is intended to provide an overview for the reader of the technology options that are available to DOE for use in preparing SNF for interim storage. Technologies would be evaluated for appropriateness for specific fuels prior to use. This evaluation would identify potential problems and appropriate mitigation measures. The potential for damaged or externally contaminated fuels is routinely considered in DOE's evaluations of technologies for treatment or conditioning of SNF.

06.09 (050) Miscellaneous

COMMENT

The commentor states that the Project Summary on Fort St. Vrain spent fuel shipments references a previously prepared environmental assessment that may not be relevant.

RESPONSE

The EIS has been corrected in response to this comment.

06.09 (051) Miscellaneous

COMMENT

The commentor expresses the opinion that the storage of spent nuclear fuel has adversely impacted Native Americans and will next destroy the institution of the American family farm.

RESPONSE

Volume 1, Chapter 5 and Appendix K, and Volume 2, Chapter 5 summarize the environmental impacts of all the alternatives considered in this EIS. The analyses show that the impacts of all alternatives would be small.

06.09 (052) Miscellaneous

COMMENT

The commentor notes that in Volume I, section 4.6.5 the effective dose equivalent is provided in rem per year, but in Appendix D, effective dose equivalent values are provided in millirem per year. The commentor suggests that units be consistent throughout the document.

RESPONSE

The EIS has been revised to ensure uniformity in units throughout the document.

06.09 (053) Miscellaneous

COMMENT

The commentor wants to ensure that mitigation is an integral part of planning and suggests that mitigation should consider avoidance, minimization, rectification, and compensation.

RESPONSE

If necessary, a mitigation action plan will be prepared for this EIS in accordance with the CEQ regulations at 10 CFR 1021. All necessary mitigation is generally noted in this EIS. Volume 1, section 5.7 addresses mitigation measures relative to environmental impacts.

7. INEL ER&WM PROGRAMS SPECIFIC

07 (001) INEL ER&WM Programs Specific

COMMENT

Many commentors state that the discussion about environmental restoration activities at the Idaho National Engineering Laboratory lacks substance and that no specific projects are discussed. Some commentors express the opinion that there is a need for more progress on environmental restoration of contaminated DOE sites in particular, contaminated sites at the Idaho National Engineering Laboratory, including cleanup of the Snake River Plain aquifer, and on resolution of spent nuclear fuel management issues at the Idaho National Engineering Laboratory.

RESPONSE

The environmental restoration program at the Idaho National Engineering Laboratory (INEL) is discussed in Volume 2, sections 2.2.6 and 7.2.5 of the EIS. Volume 2, Table 3.1-3 lists the general environmental restoration projects that would be completed under each alternative. Details regarding many of these projects are not available at this time. However, summaries of some projects are included in Volume 2, Appendix C, Decontamination and Decommissioning Project Summaries and as Ongoing Projects Project Summaries.

The evaluation in Volume 2 of this EIS bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, the Environmental Protection Agency (EPA) Region X, and the State of Idaho on December 9, 1991. This agreement is the Federal Facility Agreement and Consent Order (FFA/CO). The FFA/CO establishes a comprehensive process that integrates the remediation requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the corrective action requirements of the Resource Conservation and Recovery Act (RCRA) and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. Records of Decision (RODs) under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

Environmental restoration efforts at INEL have progressed substantially since the FFA/CO was signed. As of November 1994, 10 of the 25 scheduled RODs have been successfully negotiated and signed by DOE, EPA and the State of Idaho. These RODs have resulted in implementation and/or completion of several interim and final actions designed to reduce or eliminate hazards to human health and the

environment. To date, all enforceable milestones set in accordance with the FFA/CO have been met, either on or ahead of schedule. Additional work will continue over the next several years, as detailed in this EIS and the FFA/CO Action Plan.

The draft *ROD for the Waste Area Group 10 Comprehensive Snake River Plain Aquifer Remedial Investigation Feasibility Study*, scheduled for May 2001, will announce decisions regarding the cleanup of the Snake River Plain aquifer. This EIS cannot anticipate the detail of those decisions. Therefore, analyses performed in support of this EIS must address the nature of the anticipated cleanup in general terms.

Other DOE sites negotiate similar agreements with the appropriate regulatory agencies and follow similar processes for management of their environmental restoration activities. However, the details of such programs for the other DOE sites is not within the scope of this EIS.

DOE prepared a report on vulnerabilities of the current spent nuclear fuel (NSF) program. The NSF vulnerability assessment and associated action plans to resolve identified vulnerabilities are acknowledged in Volume 1, section 1.1.2 and Appendix J. Additional site-specific information is in Volume 1, Appendices A through F. Environmental consequences of NSF management are presented for all alternatives in Volume 1, section 5.1, and mitigation measures are discussed in section 5.7. For all alternatives analyzed, DOE is committed to meeting applicable Federal, state, and local regulations and DOE Orders to ensure protection of the environment and the health and safety of the public and site employees. Consequently, the No Action alternative still includes the minimum actions deemed necessary for continued safe NSF management.

07 (003) INEL ER&WM Programs Specific

COMMENT

The commentor disapproves of Bin Set #8, feeling that this would only be used to support the reprocessing of spent nuclear fuels. In addition, the commentor expresses concern that there is no characterization of the radionuclide content of existing calcine in the EIS and that presentation of the Calcine Transfer Project (Bin Set #1) as a Research Development Project is misleading. The commentor also believes that the decontamination and decommissioning of Bin Set #1 should be a high priority project.

RESPONSE

Additional calcine storage facilities, i.e., Bin Set #8, are proposed under the Maximum Treatment, Storage, and Disposal alternative at the Idaho National Engineering Laboratory. Bin Set #8 gives DOE

the capability to transfer liquid high-level waste to a more stable form irrespective of the technology selected. A large part of the liquid to be concentrated and calcined would consist of decontamination solutions generated from the extensive decontamination and decommissioning activities undertaken in this alternative, rather than additional high-level liquid waste from reprocessing. Reprocessing for the recovery of fissile material for the weapons stockpile is being phased out as a matter of DOE policy, although some type of processing of some fuels may be necessary as a waste treatment.

Presentation of detailed calcine data in this EIS was not considered important to the decision process, since all calcine is to be managed as high-level waste, irrespective of its radionuclide content. Detailed characterization data on calcine can be found in Inventory and Properties of Idaho Chemical Processing Plant Calcined High Level Waste (WINCO-I050; February, 1988) available through the DOE Public Reading Rooms.

DOE acknowledges the commentor's opinion that decontamination and decommissioning of Bin Set #1 should be a priority. The Calcine Transfer Project (Bin Set #1), which would result in transfer of calcine from Bin Set #1 to more modern facilities is classified as research and development because methods for removal of the calcine must be developed and tested; Bin Set #1 does not have calcine recovery capability built in. Decisions on decontamination and decommissioning will be made after calcine transfer has been accomplished and the condition of Bin Set #1 can be properly evaluated.

7.1 Waste Management

07.01 (002) Waste Management

COMMENT

The commentor is unsure if waste contaminated with 10 to 100 nanocuries alpha emitters is included in the mixed low-level waste designated for incineration in the Waste Experiment Reduction Facility.

RESPONSE

Volume 2, section 2.2 states "Alpha low-level wastes (low-level radioactive waste contaminated with 10 to 100 nanocuries alpha emitters) and alpha-mixed low-level wastes are managed together at Idaho National Engineering Laboratory site." As discussed in Volume 2, the Waste Experimental Reduction Facility (WERF) would provide for low-level waste and mixed low-level waste incineration. WERF

does not handle waste streams with concentrations of alpha-emitting radionuclides greater than 0.1 nanocuries per gram.

07.01 (003) Waste Management

COMMENT

The commentor questions whether private-sector treatment of alpha-contaminated mixed low-level waste will be located on or off the Idaho National Engineering Laboratory .

RESPONSE

As discussed in Volume 2, section 3.1 under the Ten-Year Plan and Maximum Treatment, Storage, and Disposal alternatives, transuranic and alpha low-level waste treatment capabilities would be developed either through the private sector (on- or offsite) or through INEL facilities. However, for analysis purposes in Volume 2, the facility was located on the INEL site slightly east of the Radioactive Waste Management Complex (RMWC), as stated in Volume 2, Table F-3-6, Note g.

07.01 (004) Waste Management

COMMENT

The commentor notes that waste management impacts were not analyzed, and also raises the issue that the EIS does not delineate why impacts are negligible.

RESPONSE

Volume 2, Chapter 5 discusses the evaluations of impacts. These impacts are summarized and compared in Volume 2, section 3.3. These sections and the supporting references provide technical details on the evaluations that DOE believe are adequate for the purpose of this EIS. The statement that the impacts are negligible is a generalized summary of the specific analyses and data presented in more detail in other parts of the document. Each discipline has a standard against which it measures adverse impacts. For example, in Volume 2 in the section on land use, the number of acres that would be disturbed during the implementation of each alternative is presented and that number is further divided into acres newly disturbed and acres previously disturbed. The standard for land use is whether the proposed action would affect surrounding land uses or local land-use plans. The conclusion is that existing and planned land uses within INEL facility areas would not change. Proposed activities would also be consistent with local land-use plans. Thus, the conclusion is that no adverse impacts are expected. Each discipline is similarly analyzed and discussed in the EIS.

07.01 (006) Waste Management

COMMENT

The commentor states that the EIS fails to provide throughput characterization of the Waste Immobilization Facility, fails to identify calcining and vitrification in combination, as an option, and fails to characterize the Waste Immobilization Facility emission control system. The commentor also states that grouping of low-level waste has been thoroughly discredited at the Hanford Site and that direct vitrification, rather than the separation and vitrification of high-level waste, offers the best solution because it would produce the largest high-activity waste portion, which would be sent to a repository rather than remain at the Idaho National Engineering Laboratory.

RESPONSE

As the commentor states, the EIS does not provide throughput characterization of the Waste Immobilization Facility. Rather, the EIS presents the Waste Immobilization Facility project summary as a bounding analysis of the potential range of technologies that have been identified for treatment of liquid and calcine high-level waste. The specific technology to be used is scheduled to be selected in conjunction with the ROD for this EIS. Following selection of the technologies, a facility-specific National Environmental Policy Act (NEPA) document would be required for facility construction. This facility-specific document would provide the Waste Immobilization Facility throughput and emissions characterizations.

ICPP Radioactive Liquid and Calcine Waste Technologies Evaluation Interim Report, listed in the references for the Waste Immobilization Facility project presents all of the options that were considered in the systems engineering analysis of potential treatment technologies. The option of calcination and vitrification was considered but was not recommended because it failed to meet specific needs, as outlined in the report.

07.01 (007) Waste Management

COMMENT

The commentor states the EIS does not provide information related to the management of greater-than-Class-C low-level radioactive waste, including recycling and reusing sealed sources at the Idaho National Engineering Laboratory.

RESPONSE

Greater-than-Class-C low-level radioactive waste is discussed in Volume 2, section 2.2.7 of the EIS. Management of greater-than-Class-C waste materials is described for each of the alternatives in Volume 2, section 3.1.3. The comprehensive range of options includes managing existing inventories at the INEL RWMC, building a new dedicated storage facility for all sealed radiation sources, and

transferring management responsibility to another site. The percentage of sealed sources that will be recycled is currently unknown.

07.01 (008) Waste Management

COMMENT

The commentor suggests that "higher impact wastes" should not be disposed of at the Radioactive Waste Management Complex; this includes materials from EBR-II and the Advanced Test Reactor.

RESPONSE

Greater-than-Class-C wastes are not disposed of at the RWMC. In May 1989, the Nuclear Regulatory Commission (NRC) promulgated a rule that requires disposal of commercially generated low-level waste with concentrations of radioactivity greater-than-Class-C in a deep geologic repository, unless disposal elsewhere is approved by NRC. Currently, a small amount of greater-than-Class-C low-level waste is being stored at INEL pending availability of a disposal facility licensed by NRC. Management alternatives for the disposal of greater-than-Class-C wastes are discussed in Volume 2, section 3.2.

7.1.1 Past Practices

07.01.01 (001) Past Practices

COMMENT

The commentor is impressed that only 11 acres of the Idaho National Engineering Laboratory site have been contaminated by radioactive materials.

RESPONSE

The comment is noted.

07.01.01 (002) Past Practices

COMMENT

The commentor states that the Idaho National Engineering Laboratory has received Rocky Flats Plant waste in the past.

RESPONSE

It is correct that INEL received waste shipments from the Rocky Flats Plant that were subsequently buried in several pits and trenches, including Pit 9, at the Subsurface Disposal Area at the RWMC between 1954 and 1970. For information regarding cleanup of Pit 9, refer to the project summary in Volume 2, Appendix C.

07.01.01 (003) Past Practices

COMMENT

The commentor states that the sodium treatment and processing facilities at the Idaho National Engineering Laboratory should be kept up to date and working and that the Idaho National Engineering Laboratory should process all these types of wastes from throughout the country.

RESPONSE

The general objective of the proposed Sodium Processing Project would be to construct and operate a process system to convert hydroxide to a disposable waste form, sodium carbonate.

This project would involve treating mixed wastes. Under the Federal Facility Compliance Act of 1992, DOE is required to negotiate with states or EPA, as appropriate, to develop site treatment plans, including schedules and milestones, to develop treatment technologies and construct facilities that would treat mixed wastes. Decisions on these treatment technologies and related facilities would be made in conjunction with negotiations already under way with the State of Idaho pursuant to the Federal Facility Compliance Act, and after appropriate NEPA review has been completed and public comments have been collected.

7.1.2 Existing Facilities

07.01.02 (001) Existing Facilities

COMMENT

The commentor states that the infrastructure at the Idaho National Engineering Laboratory, one of DOE's criteria for site selection, is not as usable as the EIS suggests and the figures do not include the Naval Reactors Facility and Argonne National Laboratory-West.

RESPONSE

DOE acknowledges that some facilities at some of the alternative sites may be too old to use for future waste management activities and may need to be upgraded or replaced. For instance, at INEL, NSF is being relocated from an old facility (ICPP-603) to a modern facility (ICPP-666), which has no safety vulnerabilities. Site-specific details are provided in the Materials and Waste Management sections of Volume 1, Appendices A through F.

Regarding facility costs, DOE developed an independent cost evaluation report, which is summarized in Volume 1, section 3.3.6. For each alternative, the cost evaluation considered capital costs for upgrades to existing facilities and for new facilities. DOE will consider evaluation results in preparing the ROD. However, details on specific facility needs at individual sites will be developed after decisions on the

alternatives have been made and the ROD published. At that time, there will be additional NEPA review as necessary to address proposals to implement that strategy in a safe and environmentally sound manner. Age and condition of buildings are a consideration when evaluating waste and NSF management capabilities and needs. In the case of INEL, this information is in Volume 2.

The INEL Institutional Plan covers facilities that are under the control of the DOE Idaho Operations Office. The Naval Reactors Facility and Argonne National Laboratory-West are organizationally separate from the DOE Idaho Operations Office, and as such, are not considered part of the overall INEL infrastructure. Details on the Naval Reactors Facility are included in Volume 1, Appendix D.

07.01.02 (004) Existing Facilities

COMMENT

The commentor believes that information on waste management for the Idaho National Engineering Laboratory is not always complete and asks for the status of the waste vitrification project.

RESPONSE

DOE attempts to provide to the public accurate and complete information, and the public has an opportunity to request information from DOE and to provide comments during scoping and public review periods.

Glassification and vitrification technologies have been considered at INEL for treatment of calcined high-level radioactive waste. High-level waste and related actions under the alternatives analyzed are discussed in Volume 2, section 3.1.3. Calcined solids would be converted to a more stable glass or ceramic form under the Ten-Year Plan; Minimum Treatment, Storage, and Disposal; and Maximum Treatment, Storage, and Disposal alternatives. The Waste Immobilization Facility at INEL is tentatively scheduled to begin operating in 2008. More information on this facility is in Volume 2, Appendix C.

07.01.02 (005) Existing Facilities

COMMENT

The commentor states that the Volume 2 discussion about storage of nonmixed private-sector transuranic waste should include discussion of permit modifications and limited capacity.

RESPONSE

Volume 2, Table 7-3 discusses the RCRA permitting status of each activity. The possible storage of nonmixed private-sector transuranic waste, and any possible modifications to the pending Part B RCRA permit are included in discussions in Volume 2, Chapter 7. The capacity to store transuranic waste in

compliance with applicable requirements is provided by the Transuranic Storage Area Enclosure and Storage Project, an ongoing project described in Volume 2, Appendix C, section OP8.

07.01.02 (006) Existing Facilities

COMMENT

The commentor alleges that the EIS does not provide a full analysis of the proposed restart and expanded operations of the Waste Experiment Reduction Facility, including an analysis of alternatives and cumulative impacts.

RESPONSE

Restart and expanded operations, including incineration, at WERF were addressed in the Draft EIS; in response to public comments, the project summary was expanded in the Final EIS. The Volume 2, Appendix C project summary (MLW-1) provides specific information about WERF operations, and the cumulative impacts of operating WERF are assessed in Volume 2, section 5.15, including the No Action alternative, which would involve no incineration at WERF. DOE believes that the analysis of impacts of operating WERF, not operating WERF, and treatment of low-level and mixed low-level wastes at other facilities are adequately assessed in the EIS.

The Environmental Assessment, Idaho National Engineering Laboratory Low-Level and Mixed Waste Processing Finding of No Significant Impact (FONSI) was signed by Tara O'Toole, EH-1, on June 3, 1994. The FONSI was initially provided to the State of Idaho in mid-September 1994, for assistance in the review of this EIS. It was officially provided by letter OPA/AD-94-287, dated November 17, 1994.

See also the response to comment 05.02 (008).

07.01.02 (007) Existing Facilities

COMMENT

The commentor states that overall radiological performance assessment methodology for assessing the buried low-level waste at the RWMC and the disposal facility's performance should be based on sound assumptions and employ calculation methods known to perform satisfactorily.

RESPONSE

Impacts of low-level waste disposal at the INEL RWMC are currently being assessed. The performance assessment will specify criteria waste forms must satisfy before the waste can be disposed of at RWMC. Waste disposal would not occur if the requirements of the waste acceptance criteria, based on the performance assessment, were not satisfied. Waste not meeting the criteria would require further treatment before disposal. The overall performance assessment methodology will be based on sound

assumptions and calculation methods known to perform satisfactorily and will be available for public, state, and Federal agency review.

7.1.3 Inventories and Characteristics

07.01.03 (001) Inventories and Characteristics

COMMENT

The commentor wants details on the waste material that has been synthesized at the Idaho National Engineering Laboratory from reactors.

RESPONSE

Details on the operations of nuclear reactors at INEL are outside the scope of this EIS. However, wastes generated to be handled by the environmental restoration and waste management program are included with other INEL operations in Volume 2, section 5.15. In addition, reactor operations at INEL involving NSF are addressed in Volume 1, section 2.1. Adequate information on these wastes for evaluation of alternatives is provided in the EIS.

Detailed information on wastes generated from reactor operations, both currently and historically, can be found in the INEL Radioactive Waste Management Information System, which is available at INEL information locations.

07.01.03 (002) Inventories and Characteristics

COMMENT

The commentor is concerned that volumes and waste type descriptions are vague for the Maximum Treatment, Storage, and Disposal alternative.

RESPONSE

Graphics are provided in Volume 2, section 3.1 that indicate the volumes of each waste type that would be handled under each alternative. Definitions and descriptions of each waste type are provided in Volume 2, Chapter 2.

07.01.03 (003) Inventories and Characteristics

COMMENT

The commentor states that the 145,000 cubic meters of low-level waste disposed of at the Idaho National Engineering Laboratory cited in Volume 1, Appendix B, section 4.14.4 of the EIS is significantly lower than an Idaho National Engineering Oversight Program report cites.

RESPONSE

The value of 145,000 cubic meters of low-level waste disposed of at the INEL RWMC cited in Volume 1 of the EIS is consistent with low-level waste volumes cited elsewhere in the EIS and is consistent with the *Integrated Data Base* (1992) information. The number cited from the INEL Oversight Program Report does not necessarily reflect only volumes of low-level waste.

07.01.03 (004) Inventories and Characteristics

COMMENT

The commentor states that DOE must fully and separately characterize the various waste inventories in storage and discharged to the environment. The commentor is particularly concerned about inventory values listed for transuranic waste in Volume 1 because they do not correspond to state oversight numbers, which are considerably higher. In addition, the EIS fails to account for the 2,787 pounds of plutonium DOE has recently acknowledged is buried at the Radioactive Waste Management Complex, and plutonium is not included in the inventories of spent nuclear fuel in Volume I, Appendix I, Table I-25.

RESPONSE

General discussions of current waste inventories at the INEL RWMC are in Volume 2, section 2.2.7 under the specific waste categories. Effluent discharges are discussed in Volume 2, sections 4.7 and 4.8. References are included in those sections directing the reader to documents for more detailed information. The commentor is correct that the transuranic waste inventories in Volume 1, section 4.2 (and also in Volume 2, section 2.2.7) of the Draft EIS incorrectly report that 102,000 cubic meters of transuranic waste is buried and stored at RWMC. The correct total volume of transuranic waste (which includes alpha-contaminated low-level waste) that is buried and retrievable at the RWMC is 127,000 cubic meters. This error has been corrected in both sections of the Final EIS.

The press release to which the commentor refers (Fact Sheet, *Buried Waste at INEL May Contain More Plutonium than Previously Recorded*) acknowledges that more plutonium than previously estimated was shipped to and buried at INEL. Currently, DOE estimates that 1,320 to 1,980 pounds (600 to 900 kilograms) more plutonium was shipped from the Rocky Flats Plant between 1954 and 1970 than previously estimated. This amount is in addition to 807 pounds (366 kilograms) of plutonium that INEL records indicate is buried in waste at the RWMC. Limitations of plutonium measurement techniques and uncertainties associated with plutonium quantities have been known for many years and contributed to this discrepancy. This increase in the estimated plutonium inventory at the RWMC does not effect the

transuranic waste volume inventories in Volume 2, section 3.1.3 or the consequences analyses in Volume 2, Chapter 5; therefore, the new estimated inventory of plutonium buried at the RWMC was not addressed in the EIS.

The radionuclide inventory for representative DOE research/test reactor NSF based on EBR-II Mark 5 fuel presented in Volume 1, Appendix I, Table I-25 correctly lists plutonium, including four isotopes of plutonium and the curie content per assembly of each isotope. No changes to this table are necessary.

07.01.03 (005) Inventories and Characteristics

COMMENT

The commentor cites an apparent inconsistency between the EIS, the *Federal Register*, and the Idaho National Engineering Laboratory Oversight Committee on the mixed waste volumes at the site. In addition, the commentor questions whether high-level liquid waste is included in any of the numbers.

RESPONSE

Volume 1, Appendix B, section 4.14.3 states that 1,100 cubic meters (1,439 cubic yards) of mixed low-level waste is stored at INEL, while the commentor cites the *Federal Register* (May 26, 1992) total for the site of 63,973 cubic meters (83,670 cubic yards). The 1,100-cubic-meter (1,439-cubic-yard) value in the EIS refers only to mixed low-level wastes, not all mixed wastes, which was the case for the *Federal Register* value and also possibly the Oversight Committee values, although the origin of the reference to specific values is not known. Liquid high-level waste volumes are reported in Volume 1, Appendix B, section 4.14.1.

07.01.03 (006) Inventories and Characteristics

COMMENT

The commentor states that the EIS does not present sufficient information on certain waste streams or treatment processes/facilities and wants to know the amounts of wastes, where they are, their condition and type, and the technologies available and being worked on.

RESPONSE

Information on waste materials and related facilities currently at INEL (including the amounts of waste, where they are, and their condition and type) is given in Volume 2, section 2.2.7. Associated activities under the various alternatives, including technologies available and being worked on, are described in Volume 2, section 3.1. However, in some cases, complete information is not yet available, such as on waste streams from future decontamination activities and where treatment plans have not been fully

determined. In other cases, although facility designs and treatment processes are still at the conceptual stage, sufficient information exists to bound the environmental impacts from the range of alternatives being considered.

7.1.4 Technologies

07.01.04 (001) Technologies

COMMENT

The commentor states that the Volume 2, Maximum Treatment, Storage and Disposal alternative for mixed transuranic waste should discuss impacts from Best Demonstrated Available Technology treatment because the Waste Isolation Pilot Plant waste acceptance criteria may adopt Land Disposal Restrictions.

RESPONSE

As shown in Volume 2, Table 3.1-6, treatment to meet disposal requirements will be done in the Idaho Waste Processing Facility and/or private-sector alpha-contaminated mixed low-level waste treatment facility. These facilities are described in Volume 2, Appendix C, sections TRU3 and TRU1, respectively. As stated in section TRU3, under the Federal Facility Compliance Act of 1992, DOE is required to negotiate with states or EPA, as appropriate, to develop site treatment plans, including schedules and milestones, to develop treatment technologies and construct facilities that would treat mixed wastes. Decisions on these treatment technologies and related facilities would be made in conjunction with negotiations already under way with the State of Idaho, pursuant to the Federal Facility Compliance Act, and after appropriate NEPA review is complete.

07.01.04 (002) Technologies

COMMENT

The commentor asks about the status of the glass vitrification project that seemed so promising at the Idaho National Engineering Laboratory a few years ago.

RESPONSE

Glassification and vitrification technologies have been considered at INEL for treating calcined high-level radioactive waste. High-level waste and related actions under the alternatives analyzed are discussed in Volume 2, section 3.1.3. Calcined solids would be converted to a more stable glass or ceramic form under all alternatives except the No Action alternative. The Waste Immobilization Facility at the Idaho National Engineering Laboratory is planned for operation after 2005. More information on this facility is in Volume 2, Appendix C.

07.01.04 (003) Technologies

COMMENT

The commentor asks how the Actinide Recycle Demonstration Project would generate high-level or mixed wastes.

RESPONSE

The Actinide Recycle Demonstration Project (now the Electrometallurgical Demonstration Project) description has been modified and expanded in Volume 2, Appendix C, section SNF8. The objectives of this demonstration are to investigate pyroprocessing of NSF, to produce a waste form that is potentially suitable for a geologic repository, and to quantify volumetric reduction factors. This demonstration would produce high-level radioactive waste containing fission products because NSF would be processed. Mixed wastes also would be generated because of electrorefiner operation involving cadmium, plus sodium contaminants in the NSF to be used for this demonstration.

7.1.5 Ultimate Disposition

07.01.05 (001) Ultimate Disposition

COMMENT

The commentor opposes new high-level waste storage facilities proposed for the Idaho Chemical Processing Plant until DOE selects a technology for processing existing high-level waste, and determines that nuclear weapons materials production capacity is needed to meet national security requirements.

RESPONSE

New storage facilities have been proposed for liquid high-level waste and solid high-level waste. As discussed in Volume 2, Appendix C, new tanks would be needed to replace others that do not currently comply with RCRA under some of the alternatives analyzed. Additional storage capacity would be needed for calcined high-level waste if existing liquid high-level waste is to be converted into the more stable solid calcined form. None of these new facilities is intended to support nuclear weapons material production capacity.

See also the response to comment 04.04 (008).

07.01.05 (002) Ultimate Disposition

COMMENT

Commentors remark about the large amount of nuclear waste that is accumulating at the Idaho National Engineering Laboratory and that there is not a coherent plan for what to do next.

RESPONSE

This EIS is a fundamental planning tool in development of a coherent plan for managing nuclear waste at INEL. Descriptions of how specific wastes would be managed under the proposed alternative actions are in Volume 2, section 3.1. The DOE Environmental Restoration and Waste Management Five-Year Plan describes the activities of the environmental restoration program, which is already under way. Although the ultimate disposition of high-level nuclear wastes is a high priority for DOE, the details of those disposition activities have not been finalized and are beyond the scope of this EIS.

7.2 Environmental Restoration**07.02 (001) Environmental Restoration****COMMENT**

Commentors identify sections of Volume 2 of the EIS that require clarification or additional information to more completely address the topics discussed in the sections.

RESPONSE

The EIS has been modified to include the additional information requested by the commentors or to clarify the discussions in the identified Volume 2 sections.

7.2.1 FFA/CO Issues**07.02.01 (001) FFA/CO Issues****COMMENT**

Commentors question whether the environmental restoration activities and alternatives for the Idaho National Engineering Laboratory are consistent with Federal laws governing cleanup and with the Federal Facility Agreement and Consent Order negotiated among DOE, the Environmental Protection Agency, and the State of Idaho.

RESPONSE

Subject to Congressional funding, DOE is committed to ensuring that applicable Federal laws (specifically, the FFA/CO Action Plan, as stated in Volume 2, section 3.1.2.1) for remediation activities are followed for each alternative except the No Action alternative. The number of new decontamination and decommissioning projects depends on the alternative, but even if new projects are not undertaken, surveillance and maintenance activities would be conducted in compliance with applicable regulations. The role of the FFA/CO is discussed further in Volume 2, sections 2.2.6 and 7.2.5.

07.02.01 (002) FFA/CO Issues

COMMENT

The commentor asks how land-use plans would impact the use of areas covered under the Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory.

RESPONSE

Management, closure, and/or remediation of actual disposal sites, depending on the waste or material disposed of, are regulated under CERCLA, RCRA, or the Atomic Energy Act. The regulations of each of these acts contain provisions to control use of disposal sites, when disposal activities are discontinued. The future use of land at any disposal site at INEL following final closure is unknown at the present time. However, administrative controls, deed restrictions, and institutional controls would be implemented to control or prevent certain use of these lands indefinitely.

07.02.01 (003) FFA/CO Issues

COMMENT

The commentor raises the issue that the cleanup decision for Pit 9 materials allows treated Pit 9 materials containing transuranic elements to be returned to Pit 9 for disposal and that aboveground storage of these wastes was not chosen because it "would pose a potential radiological hazard to the public and the environment." The commentor also raises questions about complete reliance on high-efficiency particulate air filters for preventing emissions of radioactive particulates.

RESPONSE

Specific cleanup decisions, such as the one made for the Pit 9 interim action cleanup, are made under CERCLA based on the INEL FFA/CO between DOE, EPA Region X, and the State of Idaho and are not within the scope of this EIS. The objective of cleanup decisions under CERCLA and the FFA/CO, such as for Pit 9, is to reduce the potential for exposure to contamination to ensure that human health and the environment are adequately protected. This is done by establishing cleanup objectives and standards specifically to ensure adequate protection and compliance with applicable environmental standards and guidance. Approximately half of the soil and other material in Pit 9 is estimated to contain fewer than 10 nanocuries per gram of transuranic elements; after initial excavation, this material would be returned to the pit following assay commensurate with current disposal practices for low-level radioactive wastes at the RWMC, as regulated by DOE Order 5820.2A, *Radioactive Waste Management*. The remaining half would be removed and treated, both to reduce transuranic concentrations to less than 10 nanocuries per gram and to satisfy risk-based cleanup criteria established in the ROD. Following treatment, this soil and other materials meeting these criteria will be returned to Pit 9 as low-level radioactive waste. The treated concentrate would be in a stable vitrified form. Although an in-depth analysis of risk was not performed for the aboveground storage alternative, it was not preferred because the waste would be stored in an

untreated and potentially unstable form for an undetermined period of time until an appropriate treatment method could be found.

To minimize airborne releases, projects involving radioactive particulates at INEL would take place within a double-confinement structure. Conservative assumptions normally are used to estimate releases to the atmosphere, such as modeling only two filters in series when at least three are planned for actual operations. Also, although high-efficiency particulate air (HEPA) filters have established particulate removal efficiencies of 99.97 percent (down to diameters of 0.3 micrometers), a conservative efficiency factor of only 99 percent typically is used for operational safety and accident analyses. These filters are capable of removing particles as small as 0.001 micrometers from an airstream, but the manufacturer performs the rating calibration at 0.3 micrometers using a standard aerosol-generating device. The filters are tested annually and inspected daily to ensure that their efficiency is maintained.

Safety analyses for forthcoming INEL facility operations will not assume perfect HEPA filter operation. Additional precautions will be taken to minimize airborne releases. The pressure differential across each filter will be measured continuously to detect formation of any holes or insecure filter installation. Filter temperature will be measured to promptly detect a filter fire. Finally, radiation sensors will be installed downstream of the filters to continuously monitor atmospheric releases. Detection of radioactive particulates above the natural background levels would result in a prompt shutdown of facility operations.

See also the response to comment 05.11.03 (009).

07.02.01 (004) FFA/CO Issues

COMMENT

The commentor notes that the statement in Volume 2 of the Draft EIS that project-specific Idaho National Engineering Laboratory environmental restoration activities will be quantified and evaluated as part of the Comprehensive Environmental Response, Compensation, and Liability Act should be modified to reference the Federal Facilities Agreement/Consent Order.

RESPONSE

The commentor is correct. Project-specific impacts of environmental restoration activities at INEL will be quantified and evaluated in the future as part of CERCLA, in accordance with the FFA/CO. The EIS has been modified to incorporate the change.

07.02.01 (005) FFA/CO Issues

COMMENT

The commentor states that new remedial designs and remedial actions will be conducted for each Record of Decision under the FFA/CO that requires a remedial action. The Draft EIS, in Volume 2, section 3.1, implies that remedial design and remedial action can only occur as a result of a remedial investigation and feasibility study. This implication should be corrected.

RESPONSE

The commentor is correct. The Final EIS has been modified to clarify that new remedial design and remedial actions would be implemented if remedial action is determined necessary by the ROD from the CERCLA process and the FFA/CO for each interim action or remedial investigation and feasibility study completed.

7.2.2 Waste Generation

07.02.02 (001) Waste Generation

COMMENT

The commentor asks how 1 million cubic yards of imported waste compares to the quantities of waste that will be generated at the Idaho National Engineering Laboratory from environmental restoration and waste management activities, what portion of the imported waste will be treated and what portion simply disposed of, and what the impacts of storage of these wastes are once the Radioactive Waste Management Complex reaches capacity.

RESPONSE

As discussed in Volume 2, section 3.1, under the Maximum Treatment, Storage, and Disposal alternative, approximately one million cubic yards (770,000 cubic meters) of low-level waste would be accepted for treatment and disposal at INEL. That volume of waste is approximately 10 to 15 times the amount of low-level waste that would be generated onsite from environmental restoration and waste management activities, depending on the alternative used for comparison. Portions of this waste that would be treated and disposed of, treated without disposal, and retrievably stored for all alternatives are illustrated in Volume 2, Figure 3.1-27. As indicated in this figure and discussed in Volume 2, section 3.2, by 2005, all low-level waste would have been disposed of onsite under the Maximum Treatment, Storage, and Disposal alternative. Most of the waste received under all but the Maximum Treatment, Storage, and Disposal alternative would be stored safely pending completion of a proposed new treatment and disposal facility. As soon as these facilities are operational beyond 2005, they would

allow the waste to be handled under appropriate procedures developed at that time. The period after 2005 is outside the scope of this EIS; however, NEPA review would be performed on such storage activities.

The evaluation in Volume 2 bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process that integrates the remediation requirements of CERCLA and the corrective action requirements of RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

07.02.02 (002) Waste Generation

COMMENT

The commentor notes that remediation of the Transuranic Storage and Retrieval Area and restoration of the waste does not consider the implications of additional waste volumes due to contaminated soil.

RESPONSE

Volume 2, Table 5.15-2 includes impacts from newly generated waste, including contaminated soil.

7.2.3 Technologies

07.02.03 (001) Technologies

COMMENT

The commentor expresses doubts about the cleanup methods chosen at Idaho National Engineering Laboratory.

RESPONSE

The environmental restoration program at INEL is specifically discussed in Volume 2, sections 2.2.6 and 7.2.5. The evaluation in Volume 2 of this EIS bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process to integrate the remediation requirements of CERCLA and the corrective action requirements of RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and

schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

07.02.03 (002) Technologies

COMMENT

The commentor states that the EIS fails in its Volume 2-stated goal of making decisions on ways to "treat, store and dispose of waste, manage spent nuclear fuel, and conduct environmental restoration activities at the Idaho National Engineering Laboratory in an environmentally safe manner."

RESPONSE

Improvements throughout the Final EIS evidence DOE's efforts to respond to this general finding by the public by publishing as thorough a study as possible.

7.2.4 Decontamination and Decommissioning

07.02.04 (001) Decontamination and Decommissioning

COMMENT

The commentor states that the EIS does not address decontamination and decommissioning of Idaho National Engineering Laboratory tanks VES-WM-182 through -186, from which heels are to be removed, along with tanks VES-WM-100, -101, and -102.

RESPONSE

The EIS does not address decontamination and decommissioning (D&D) of the tanks referred to because that would not be within the scope of the Tank Farm Heel Removal Project. The purpose of that project is to remove liquid and solid wastes remaining in the tanks after they have been emptied using currently installed transfer jets. This supplemental transfer operation is anticipated to take place between 2000 and 2015. Thus, D&D would occur after 2015, which is after the 10-year planning period (1995 to 2005) for the INEL waste management part of this EIS. Such proposals would be addressed by additional NEPA documentation.

07.02.04 (002) Decontamination and Decommissioning

COMMENT

The commentor states that the EIS should include data that fully characterizes the Idaho National Engineering Laboratory Decontamination and Decommissioning Program waste volumes and toxicity.

RESPONSE

INEL D&D program is discussed in Volume 2, section 2.2.6. Major D&D projects anticipated to occur within the 10-year period of this EIS are discussed in more detail in Volume 2, Appendix C, Project Summaries. It is impossible to fully characterize D&D waste streams prior to implementing D&D activities at the facilities being decontaminated and decommissioned.

Limited characterization of facilities prior to D&D provides sufficient information for making D&D decisions, but cannot fully characterize or anticipate all wastes. Wastes generated by D&D activities are managed in accordance with applicable DOE guidelines and environmental regulations. Additional characterization of these wastes would be completed during D&D implementation as necessary to ensure proper management of D&D wastes.

07.02.04 (003) Decontamination and Decommissioning**COMMENT**

The commentor asserts that decontamination and decommissioning of facilities are subject to evaluation under the Federal Facilities Agreement/Consent Order, and the EIS should incorporate this information.

RESPONSE

The decontamination and decommissioning of facilities is not part of the current INEL FFA/CO. D&D programs at INEL are described in Volume 2, section 2.2.6, including the process by which the D&D is accomplished while meeting regulatory requirements and guidelines.

07.02.04 (004) Decontamination and Decommissioning**COMMENT**

The commentor identifies a statement describing the decontamination and decommissioning activities for the Maximum Treatment, Storage, and Disposal alternative as different from those under the Ten-Year Plan alternative. The statement appears in the Volume 2 summary and the Summary.

RESPONSE

The commentor is correct, and the statement has been changed in the EIS.

7.2.5 Not used

7.2.6 Cost

07.02.06 (005) Cost

COMMENT

The commentor indicates that the cost of environmental restoration at the Idaho National Engineering Laboratory will be billions of dollars.

RESPONSE

Whereas it may ultimately take several billion dollars to complete environmental restoration activities at INEL and other DOE sites, the scope of INEL environmental restoration activities in this EIS is limited to the period 1995 to 2005. The cost of environmental restoration activities during this period will ultimately be a function of Congressional funding allocations for the cleanup projects discussed in Volume 2 of this EIS. Cleanup activities at INEL are conducted under the process and schedules established under the FFA/CO, as agreed upon by DOE, EPA, and the State of Idaho.

7.3 Regulatory Compliance

07.03 (001) Regulatory Compliance

COMMENT

The commentor recommends that Volume 2 of the EIS provide additional information concerning the Federal Facilities Agreement and Consent Order at the Idaho National Engineering Laboratory; the June 28, 1993, Court Order; the State of Idaho's hazardous waste program; and all agreements that the Idaho National Engineering Laboratory has entered into with the State of Idaho pursuant to those regulations.

RESPONSE

Volume 2, Chapter 7 provides a summary of the information requested. The Court Order is part of the EIS administrative record and is appended to the Implementation Plan. The commitments or requirements identified in those documents will be carefully considered in arriving at the ROD for this EIS.

07.03 (002) Regulatory Compliance

COMMENT

The commentor requests that the EIS discuss the Antidegradation Policy (40 CFR 131.12).

RESPONSE

A discussion of the Antidegradation Policy, which is an EPA policy requiring states to develop and adopt statewide antidegradation policies to prevent degradation of surface waters has not been added to the

EIS. INEL has only intermittent surface waters, none of which is utilized either a source of water for INEL activities or discharges from INEL facilities. Therefore, a discussion of the policy would not provide useful information for decisionmakers.

7.4 Miscellaneous

07.04 (001) Miscellaneous

COMMENT

Commentors express opinions that nuclear waste production should be reduced and eventually stopped until a means for safe management and disposal are available. Time and resources should shift to cleanup.

RESPONSE

General discussions of waste management procedures and plans are in Volume 2, Chapters 1 and 2. Therein, it is noted that DOE is committed to a strategy emphasizing waste minimization and avoidance, with the goal being that most newly generated radioactive waste will be created during necessary cleanup activities and decommissioning of contaminated facilities that no longer serve essential missions. The DOE complex-wide management and cleanup of wastes associated with those activities, including the time and resources required, is outside the scope of this EIS. However, complex-wide management of waste currently is being addressed in the forthcoming DOE Waste Management Programmatic EIS.

With respect to cleaning up INEL, the INEL Environmental Restoration Program, including both remediation and decontamination and decommissioning, is discussed in Volume 2, section 2.2.6. For a description of the significant progress already made in this program at INEL, see the response to comment 02.04 (047). The evaluation in Volume 2 of this EIS bounds environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process that integrates the remediation requirements of CERCLA, and the corrective action requirements of RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

The generation and storage of SNF are discussed in Volume 1, section 1.1. Therein it is noted that most of DOE's SNF was generated in DOE production and experimental reactors that have ceased to operate, so considerable source reduction has already occurred. In addition, the Navy has been engaged in the development of longer-lived Naval reactor cores, thereby reducing the amount of SNF that is generated. Eliminating the source of SNF altogether, however, is outside the scope of this EIS.

While DOE is committed to developing permanent Federal geologic repositories for isolation of SNF and high-level wastes, technologies for final SNF disposition cannot be specified in advance of certification of repository performance and associated acceptance criteria of SNF and high-level waste for disposal. DOE has acknowledged these challenges by allowing up to 40 years for a suitable repository to become fully operational. The 40-year period is not needed for preparation of SNF for final disposition, but is judged to be an upper limit on the time needed for a repository to be available. Until such disposal options are available, DOE is committed to provide for safe and environmentally sound storage and management of SNF.

07.04 (003) Miscellaneous

COMMENT

The commentor states that DOE should review impacts of long-term storage of transuranic waste at Idaho National Engineering Laboratory because transuranic waste shipments will not occur during the next 20 years.

RESPONSE

The transuranic waste management program at INEL is described in Volume 2, section 2.2.7. New transuranic waste facilities, which meet the State of Idaho, EPA and RCRA requirements, are being constructed to replace the existing storage facilities. The potential impacts of this action, including the impacts of long-term transuranic storage at INEL, were evaluated in *Environmental Assessment for the Retrieval and Restorage of Transuranic Storage Area Waste*. In addition, the receipt of transuranic waste at INEL for the 10-year period was analyzed in the Volume 2, Maximum Treatment, Storage, and Disposal alternative. The long-term receipt of transuranic waste at INEL is being analyzed as a part of the forthcoming DOE *Waste Management Programmatic EIS*.

07.04 (004) Miscellaneous

COMMENT

Commentors want DOE to responsibly manage the radioactive materials, including unspecified toxics, radioactive wastes, and spent nuclear fuel that DOE helped to create. Other commentors express

opinions that there is no way that anything like radioactive waste can be handled safely and question DOE waste management practices and policies.

RESPONSE

DOE acknowledges its responsibility to safely manage radioactive materials, including SNF and radioactive wastes. DOE's policy is to comply with applicable Federal and state laws and regulations, DOE Orders, and interagency agreements governing SNF and radioactive and hazardous wastes. DOE has a program that includes research, development, and demonstration activities for the safe management and storage of all radioactive materials at each of the sites considered in this EIS. General solutions for managing SNF, including storage, are discussed in Volume 1, section 1.1.3 and Appendix J. Current management practices for radioactive wastes are described in section 2.2.7, which is specific to INEL but also generally applies to wastes at other DOE sites. DOE also has adopted a policy emphasizing waste minimization and avoidance, as discussed in Volume 2, Chapters 1 and 2 of the EIS. Most new radioactive waste will be created during unavoidable cleanup activities and decommissioning of contaminated facilities that no longer serve essential national missions. Residual radioactive wastes may also result from cleanup actions performed under CERCLA pursuant to the INEL FFA/CO. Volume 2, Chapter 2 references two programmatic EISs that are being prepared regarding DOE Spent Nuclear Fuel Programs: Volume 1 of this EIS and the *Waste Management Programmatic EIS*, a separate forthcoming document. This EIS was prepared in full accordance with NEPA and follows the Council on Environmental Quality (CEQ) implementing regulations.

07.04 (006) Miscellaneous

COMMENT

The commentor requests that the EIS provide additional information on waste management and cleanup projects or facilities that are in preliminary planning stages.

RESPONSE

Anticipated projects have been included in the EIS to give readers as comprehensive a range of forthcoming projects as is currently possible. These anticipated projects have been conservatively evaluated to attempt to bound the reasonably foreseeable environmental impacts from such projects. NEPA review is performed on such activities where applicable, prior to initiation. At such time, accurate information on secondary waste generation would be available for an assessment of impacts on waste management. NEPA status of environmental restoration and waste management projects contemplated for INEL is discussed in the Summary (see box titled Projects Related to Alternatives in section on Alternatives) and in Volume 2, Table 3.1-1.

The evaluations in Volume 2 of this EIS bound environmental impacts from environmental restoration (or cleanup) activities at INEL. However, specific decisions related to cleanup at INEL are generally addressed under an enforceable agreement executed by DOE, EPA Region X, and the State of Idaho on December 9, 1991, the FFA/CO. The FFA/CO establishes a comprehensive process that integrates the remediation requirements of CERCLA and the corrective action requirements of the RCRA and the State of Idaho's Hazardous Waste Management Act. Cleanup activities are conducted under the process and schedule established in the FFA/CO. RODs under the FFA/CO process are signed by all three agencies and represent a joint determination that protectiveness will be achieved through implementation of the selected remedy.

07.04 (007) Miscellaneous

COMMENT

Commentors request specific information on secondary wastes to be produced from potential future activities or not-yet-existent facilities related to possible processing of SNF, including the EBR-II Blanket Processing Project, fuel subassemblies, and high-level liquid wastes from the Spent Fuel Processing Project.

RESPONSE

Anticipated projects have been included in the EIS to present readers with as comprehensive a range of foreseeable projects as is currently possible. Information and preliminary estimates of waste generation rates from the Blanket Processing Project, fuel subassemblies, high-level wastes from the Spent Fuel Processing Project, and other potential future projects and facilities are in Volume 2, Appendix C. This information was used to determine the potential impacts of each alternative, as discussed in Volume 2, Chapter 5. If ultimately proposed, these projects or facilities will require additional review under NEPA as they come closer to reality. At such time, more information on secondary waste generation storage times and schedules will be provided for an assessment of impacts on waste management.

07.04 (008) Miscellaneous

COMMENT

The commentor requests that DOE begin training its work force for the day when the majority of funds are dedicated to waste management.

RESPONSE

Funding priorities and work-force retraining to meet those changing priorities are not within the scope of this EIS.

8. NAVAL PROGRAM SPECIFIC

8.1 Preferences

08.01 (001) Preferences

COMMENT

Some persons expressed general opposition to one or more of the alternatives considered without identifying technical reasons for the opposition. Some of these expressions of opposition included the following concerns: Storage could last longer than planned. The EIS and Record of Decision may not be completed by June 1995. Litigation over the sufficiency of this EIS could delay implementation. An alternative allowing removal from the shipyards might not be selected.

RESPONSE

Some individuals oppose one or more of the alternatives identified by DOE and the Navy for the transportation, receipt, processing, and storage of spent nuclear fuel. Nevertheless, some alternative must be selected since DOE has a considerable amount of spent nuclear fuel in existence. To select an alternative, the Navy is cooperating with DOE in this comprehensive EIS on spent nuclear fuel management, including Naval spent nuclear fuel. This EIS evaluates alternatives for spent nuclear fuel management pending ultimate disposition. Some of the alternatives which are being evaluated in the DOE EIS will allow routine Naval spent nuclear fuel shipments to be resumed promptly. Therefore, it is by no means certain that storage at shipyards will be extended.

08.01 (002) Preferences

COMMENT

Some persons expressed support for one or more of the alternatives considered without identifying technical reasons for their support. Some of these expressions of support were based on such things as the Navy's expertise, the amount of information and technology presented in the EIS, the safety or cost effectiveness of the alternative supported, and the commentors' personal knowledge of the absence of problems with Naval spent nuclear fuel and safety in the Naval Nuclear Propulsion Program in the past.

RESPONSE

DOE and the Navy must make a selection of an alternative for transportation, receipt, processing, and storage of spent nuclear fuel and the support from the public is acknowledged.

08.01 (003) Preferences

COMMENT

Some persons expressed general satisfaction with the safety of the Naval Nuclear Propulsion Program. Examples of these expressions of support include:

"I have a high confidence in the Navies (sic) ability to store the fuel at PSNS in a safe and environmentally secure manner."

"My feeling is that I believe that the Navy has a good record of safety, I believe that they should get off the back of the Navy and let them do their work."

"I just want everyone to understand that the Navy's nuclear program is safe and the workers that I represent are very, very safe."

"As for transporting spent fuel the Navy has been transporting fuel safely across the country to INEL for years."

"Proper examination of the fuel will help ensure the safety of the servicemen operating the ships and help maintain a technical advantage by continually improving the reactor cores."

"The safety record for the navy nuclear program has been good."

"I've read the EIS and I'm in favor of the Navy being a good steward of the land, continuing its processing, and I think it is within what we would call acceptable risk."

RESPONSE

Commentors provided statements of personal knowledge and conviction that the safety record of the Navy in servicing nuclear-powered vessels and in handling and shipping Naval spent nuclear fuel which support the Navy's statements in this EIS. Some commentors affirmed the relationship between examining all Naval spent nuclear fuel and ensuring the safety of nuclear-powered vessels and the sailors who serve aboard them.

These comments support the Naval Nuclear Propulsion Program and its continuing efforts to maintain safety and minimize the risks associated with operation of the nuclear fleet. Protecting the people who sail and service nuclear-powered vessels, the public, and the environment has always been one of the highest priorities of the Navy.

08.01 (004) Preferences

COMMENT

Some persons expressed opposition to one or more of the alternatives considered and provided reasons for their opposition. Some of these expressions of opposition were based on such things as the costs of providing new facilities for Naval spent nuclear fuel management, the number of shipments involved, existing pollution problems in the area, or the difficulty of evacuating an area.

RESPONSE

Some individuals oppose one or more of the alternatives identified by DOE and the Navy for the transportation, receipt, processing, and storage of spent nuclear fuel. Nevertheless, some alternative must be selected since DOE has a considerable amount of spent nuclear fuel in existence. To select an alternative, the Navy is cooperating with DOE in this comprehensive EIS on spent nuclear fuel management, including Naval spent nuclear fuel. This EIS evaluates alternatives for spent nuclear fuel management pending ultimate disposition. Analyses of the matters of concern and the reasons for opposition identified have been considered in this EIS.

Analyses of the impacts associated with managing Naval spent nuclear fuel show that any effects on human health or the environment would be small for all of the alternatives considered. The potential impacts due to normal operations or hypothetical accident conditions for management of Naval spent nuclear fuel present little risk for all of the alternatives considered.

08.01 (005) Preferences

COMMENT

Some persons expressed support for one or more of the alternatives considered and provided technical reasons for their support. Some of these expressions of support were based on such things as the proven nature of the existing Naval spent nuclear fuel management program, the lack of need to change existing practices, or the unsuitable nature of some sites considered in comparison to others.

RESPONSE

DOE and the Navy must make a selection of an alternative for transportation, receipt, processing, and storage of spent nuclear fuel and the support from the public is acknowledged. Analyses of the matters of concern and the reasons for opposition identified have been considered in this EIS.

08.01 (006) Preferences

COMMENT

Some persons expressed general opposition to one or more of the alternatives considered because they felt that some of the alternatives to be evaluated in the Environmental Impact Statement would require further site specific NEPA reviews, which would prevent prompt implementation.

RESPONSE

Appendix D to Volume 1 of this EIS includes in Chapters 3 and 5 and Attachments D and E detailed evaluation of methods and facilities for storage of Naval spent nuclear fuel at Navy sites under the alternatives considered. Chapters 3 and 5 and Attachment F provide detailed information on the exposures and potential health effects associated with each method of Naval spent nuclear fuel management at shipyards and Navy prototype sites, as well the effects associated with examination of Naval spent nuclear fuel at DOE sites. In all of these cases, it is assumed that the facilities used for Naval spent nuclear fuel management would be properly designed for the weather, seismic, and other conditions applicable to the particular site evaluated.

This EIS provides the information necessary to show that all three methods of storage at shipyards and Navy prototype considered (dry storage, storage in shipping containers, and storage in water pools) are practical and could be accomplished safely and with very small risks. This level of analysis is sufficient to select a management alternative for Naval spent nuclear fuel. Further NEPA review may be required for construction of specific facilities, but this review could easily be conducted within the transition period allotted for facility and equipment design and construction.

08.01 (007) Preferences

COMMENT

Some persons expressed general opposition to use of one or more of the Navy sites for storage of spent nuclear fuel from other locations.

RESPONSE

Under the No Action and Decentralization alternatives, Navy sites would be used to store spent nuclear fuel which was removed from reactors during servicing at the site performing the servicing, with the exception of Norfolk Naval Shipyard, which would accept Naval spent nuclear fuel from Newport News Shipbuilding and Drydock Company. This transfer would be necessary because Newport News Shipbuilding and Drydock is a private facility. The EIS states that the Navy's preferred alternative is to resume shipment of Naval spent nuclear fuel to INEL for examination and storage pending ultimate disposition.

08.01 (008) Preferences

COMMENT

All U. S. citizens benefitted from the protection provided by nuclear-powered Naval vessels so the No-Action and Decentralization alternatives would not succeed in keeping Naval spent nuclear fuel in the vicinity of those who derived the benefits of its use.

RESPONSE

As stated by the commentor, the argument that spent nuclear fuel should be stored at the location where it is removed during reactor servicing in order to keep it in the locality of those who enjoyed the benefits associated with its use does not apply to Naval spent nuclear fuel. The commentor observes that all U. S. citizens benefitted from the operation of the Navy's submarines and surface ships.

Section 3.9 of Appendix D to Volume I of this EIS discusses the fact that storing or examining Naval spent nuclear fuel at Naval sites is not the Navy's preferred alternative. The Navy has clearly stated its preferred alternative for Naval spent nuclear fuel: namely, transport to INEL for examination and storage pending ultimate disposition.

08.01 (009) Preferences

COMMENT

Governor Andrus refused to allow spent nuclear fuel into Idaho. DOE with the court's help has been able to circumvent Governor Andrus for Naval spent nuclear fuel shipments to INEL.

RESPONSE

This statement is inaccurate. In August 1993, the Secretary of the Navy, the Secretary of Energy, and Governor Andrus signed an agreement allowing 19 specific shipments of Naval spent nuclear fuel to Idaho while this EIS was being prepared and allowing for additional shipments if the Secretary of Defense certified they were needed for National Defense. In December 1993, the court accepted the agreement, modifying its order to provide for the additional shipments while the EIS was prepared. All shipments of Naval spent nuclear fuel have been conducted in full compliance with this order.

8.2 NEPA-Related Comments

08.02 (001) NEPA-Related Comments

COMMENT

Commentors stated that, a public hearing was poorly handled by the government representatives or the public review process should be different.

RESPONSE

The public hearings on this EIS were designed to provide members of the public an opportunity to ask questions and obtain information as well as provide comments. To accomplish these goals, the hearings consisted of a presentation summarizing the information contained in this EIS, a session in the main hearing room during which questions from those in attendance were answered, and a period in which those in attendance could state their comments on the content of the EIS. In addition, a smaller room with a recorder and a representative of DOE or the Navy was provided for those who did not wish to speak in front of the audience or who did not want to wait to make their comments. Informal question and answer sessions were also conducted to provide an additional opportunity for members of the public to ask more detailed questions.

The hearings began with brief summaries of the alternatives and the associated impacts by DOE and Navy officials. These summaries were intended to provide background on the nature of the decision to be made, the alternatives considered, and the results of the evaluations of potential impacts on human health and the environment.

The summary presentations were followed by a "question and answer" period to permit those in attendance to obtain information they might desire concerning the alternatives, supporting analyses, or the results of the evaluation of impacts. These sessions were intended to allow those in attendance to bring out any additional information on the EIS or the process that they might consider useful. Each question and answer during this session was recorded in its entirety as part of the permanent record of the hearings.

After the question and answer sessions, those in attendance were provided an opportunity to make a public statement providing their comments on this EIS. Each person's statement was recorded verbatim as part of the permanent record of the hearings. At the same time, a court recorder and an official of DOE were made available in a small, separate room to allow those who did not wish to speak in front of the hearing audience or who did not wish to wait for an opportunity to address the full hearing an opportunity to have their statements recorded verbatim. DOE and Navy officials were also made available in an informal setting to answer additional questions from those in attendance.

Written statements were also accepted at each hearing location from those who wished to provide their comments in that form. In addition, a toll-free "800 number" telephone service was provided for those who wished to submit comments orally or by facsimile. Of course, written comments were accepted by mail. All written and oral comments, regardless of whether they were provided before the hearing

audience, were recorded and analyzed, with no greater weight given to the manner in which the comments were provided.

The goals and intentions of the Navy and DOE in designing and carrying out the public review process, including the public hearings, was to make it as simple, easy, and convenient as possible for members of the public to be fully informed and then provide their comments in the manner they preferred.

08.02 (002) NEPA-Related Comments

COMMENT

Construction of the new dry cell at the Expended Core Facility was started without adequate NEPA documentation.

RESPONSE

This comment is not accurate. Adequate NEPA documentation existed at the time the Expended Core Facility dry cell expansion construction was initiated. Nonetheless, the dry cell construction was included in Volume 2, Part B of the EIS to ensure that this EIS would be a comprehensive document presenting information on all projects expected during the period which Volume 2 of the EIS covers.

08.02 (003) NEPA-Related Comments

COMMENT

The discussion of the new Expended Core Facility dry cell in the EIS does not characterize emissions from the facility.

RESPONSE

Annual releases of radioactivity from Expended Core Facility are identified in Table F.1.4.1.1-1 of Appendix D to Volume 1 of the EIS. Analysis of the environmental impacts of these emissions is included in Appendix D. Volume 2, Appendix C, of the EIS correctly states that emissions from the Expended Core Facility would not be expected to change significantly due to the construction of the dry cell facility. Instead, operations now conducted in other parts of the Expended Core Facility would be replaced by operations in the new dry cell if the new dry cell becomes operational. Appendix C of Volume 2 has been modified to clarify this point.

8.3 Policy

8.3.1 Government Policy and Credibility

08.03.01 (001) Government Policy and Credibility

COMMENT

Operation of the Navy's nuclear-powered vessels should be stopped immediately or should be stopped until a specified condition (such as a decision on ultimate disposition of spent nuclear fuel) is satisfied.

RESPONSE

Decisions on whether to operate nuclear-powered Naval vessels and the numbers of such vessels are made by the Congress and the President of the United States. Therefore, they are beyond the scope of this Environmental Impact Statement.

Further, as discussed in the Environmental Impact Statement, spent nuclear fuel already exists and will require safe management at some location. The EIS considers management of spent nuclear fuel containing 2800 metric tons of heavy metal, 2700 metric tons of which is already in existence. Approximately 65 metric tons of the total of 2800 metric tons of heavy metal is Naval spent nuclear fuel. Thus, stopping the use of nuclear power for Navy ships will not eliminate the need for safe management of spent nuclear fuel.

08.03.01 (002) Government Policy and Credibility

COMMENT

A decision on the method for managing Naval spent nuclear fuel should be postponed until a plan for the ultimate disposal of spent nuclear fuel is in place.

RESPONSE

As discussed in the Environmental Impact Statement, Naval spent nuclear fuel already exists and will require safe management at some location. There is no way to defer a decision on how to manage existing Naval spent nuclear fuel until permanent storage is available.

08.03.01 (003) Government Policy and Credibility

COMMENT

The Naval Nuclear Propulsion Program should be regulated by some other federal or independent agency.

RESPONSE

The Naval Nuclear Propulsion Program is subject to regulation by many other agencies, as specified in applicable laws, executive orders, and regulations. For example, the Naval Nuclear Propulsion Program is subject to regulation under the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA), the Safe Drinking Water Act, the Clean Water Act, the Clean Air Act, and many others. All of these laws have either the U. S. Environmental Protection Agency or appropriate departments in the host states as the regulator. The Naval Nuclear Propulsion Program's compliance with these laws is actively monitored by the EPA and the states and since 1980 there have been more than 300 inspections, examinations, and audits by state and federal agencies under these laws. This monitoring has been facilitated by the efforts of the Naval Nuclear Propulsion Program in the 1980's to ensure that the regulators received security clearances.

Decisions on the appropriate regulating agencies and the type, extent, and nature of regulation of the operations of nuclear-powered Naval vessels and the Naval Nuclear Propulsion Program are made by the Congress and the President of the United States. Therefore, this issue is beyond the scope of this Environmental Impact Statement.

08.03.01 (004) Government Policy and Credibility

COMMENT

The Environmental Impact Statement should consider ways to reduce the amount of Naval spent nuclear fuel produced, including reducing the number of nuclear powered warships in operation or to be built.

RESPONSE

The EIS explains the need for examination of spent Naval fuel to support achieving the goal of fuel lasting the life of a ship, thus avoiding the need for refueling, and reducing the amount of spent nuclear fuel created. However, the draft EIS does not consider reducing the number of nuclear powered warships in operation or to be built. Such matters are directed by Congress and the President fulfilling their fundamental Federal responsibilities under the Constitution in providing for the common defense. It would be inappropriate and unfeasible for this EIS to consider what the military force structure of the United States should be. Rather, the EIS analysis supports accomplishment of the Navy's fundamental mission as established and funded by Congress.

08.03.01 (005) Government Policy and Credibility

COMMENT

Some commentors indicated that DOE or the Navy is not providing complete, accurate, or truthful information.

RESPONSE

The Navy has provided a large amount of information on the shipment of Naval spent nuclear fuel and the types and amounts of radiation or radioactive material involved in releases from normal operations and postulated accidents in Appendix D. Appendix D also includes descriptions of the Expanded Core Facility and Naval spent nuclear fuel operations. The Navy has attempted to provide enough information on radiation, radioactivity, and other aspects of operations or hypothetical accidents to allow independent calculation of the environmental impacts. This is intended to permit independent analysis and verification of the estimated impacts calculated by the Navy. Every effort has been made during the preparation of this EIS to see that the best available information on impacts has been included, including public review in accordance with the requirements of the Act.

In this EIS, the Navy has clearly stated its preferred alternative and discussed how this alternative would support the Navy's mission, as established by Congress. In Appendix D, the environmental impacts of the Navy's proposed action and alternatives are evaluated in accordance with NEPA, the Council on Environmental Quality regulations, and Navy regulations.

08.03.01 (006) Government Policy and Credibility

COMMENT

Analyses of the alternatives should be performed by independent groups or individuals.

RESPONSE

The process specified under NEPA provides opportunities for independent evaluation of the environmental impacts associated with alternatives for actions such as the subject of this EIS. As a part of this process, the draft EIS has been provided to a wide range of state, federal, and local agencies and officials and to private groups and individuals. This is intended to permit them to perform their own evaluation of the analyses and the conclusions.

Many of these independent reviewers submitted the results of their reviews as comments. These comments were used to prepare the final EIS which is provided to the person deciding upon the alternative to be selected.

The Navy has provided a large amount of information on the shipment of Naval spent nuclear fuel and the types and amounts of radiation or radioactive material involved in releases from normal operations and postulated accidents for all of the alternatives in Appendix D to Volume I. The Navy has attempted to provide enough information on the radiation, radioactivity, and other aspects of operations or reasonably foreseeable accidents to allow independent calculation of the environmental impacts. All of this information is intended to permit independent analysis and verification of the estimated impacts calculated by the Navy.

08.03.01 (007) Government Policy and Credibility

COMMENT

The risks associated with the management of Naval spent nuclear fuel are unacceptable.

RESPONSE

The risks associated with all of the alternatives considered for management of DOE's spent nuclear fuel, including Naval spent nuclear fuel have been calculated and presented in this EIS. All of these risks would be small. The risks associated with the normal operations involved in management of Naval spent nuclear fuel and a broad range of hypothetical accidents are summarized in Chapter 3 of Appendix D to Volume I.

For example, as summarized in Chapter 3 and described in more detail in Chapter 5 and Attachments A and F to Appendix D, the risk resulting from normal operations or accidents associated with Naval spent nuclear fuel management during the 40 years covered by this EIS would be far less than 1 additional cancer fatality or radiation-related health effect over the entire time. This risk is very small in comparison to the other risks of daily life.

08.03.01 (008) Government Policy and Credibility

COMMENT

The Navy and DOE have already made up their minds on the action they plan to choose and are not seriously considering all of the alternatives presented or they plan to implement some action not revealed in this EIS.

RESPONSE

In accordance with NEPA, no decision on the alternative to be implemented has been made or will be made until the final EIS is issued and no actions are being taken in the meantime which would prejudice that decision. The final decision and the basis for it will be documented in the Record of Decision which will be published in the Federal Register in June 1995.

In this EIS, the Navy has stated its preferred alternative and discussed how this alternative would support the Navy's mission, as established by Congress. In Volume I, Appendix D, the environmental impacts of the Navy's proposed action and all alternatives, including those which would not support the Navy's mission, are evaluated in accordance with NEPA, the Council on Environmental Quality regulations, and DOE and Navy regulations.

08.03.01 (009) Government Policy and Credibility

COMMENT

The Navy or DOE will decide on the alternative to be implemented based on faulty or hasty research.

RESPONSE

NEPA requires the preparation of an EIS for major federal actions as a means to assure comprehensive evaluation of the impacts associated with the alternatives. It also provides for review of the EIS by the public and other agencies in order to develop assurance that important aspects have not been overlooked or that pertinent information has not been omitted. Every effort has been made during the preparation of this EIS to see that the best available information on impacts has been included, including public review in accordance with the requirements of the Act.

The risks associated with all of the alternatives considered were found to be very small. Even so, every effort was made to use the best available information on the effects of the actions considered and the methods for calculating effects which could not be measured. A wide range of disciplines were examined to assure that any important effects were not overlooked. The results of independent reviews and public comments have been carefully considered. It would appear that the potential environmental impacts of the alternatives considered have been evaluated thoroughly and the information is adequate to support the required decision.

As a part of this effort, the Navy has provided a large amount of information on the shipment of Naval spent nuclear fuel and the types and amounts of radiation or radioactive material involved in releases from normal operations and postulated accidents for all of the alternatives in Appendix D to Volume I. The Navy has attempted to provide enough information on the radiation, radioactivity, and other aspects of normal operations or hypothetical accidents to allow independent calculation of the environmental impacts. All of this information is intended to permit independent analysis and verification of the estimated impacts calculated by the Navy.

08.03.01 (010) Government Policy and Credibility

COMMENT

The Navy should analyze the effects of a reactor accident at the Kesselring Site.

RESPONSE

Such matters are outside the scope of this EIS. The EIS deals with the alternatives for handling, transporting, examining, and storing spent nuclear fuel, including Naval spent nuclear fuel, once it has been removed from nuclear reactors. It does not include any information to be used in conjunction with decisions related to the start-up, shutdown, or continued operation of reactors. Consequently, it is not intended to include analyses of the effects of reactor accidents.

08.03.01 (011) Government Policy and Credibility

COMMENT

The health, safety, and welfare of citizens should be considered in reaching any decision on the course of action to be used for management of spent nuclear fuel.

RESPONSE

This EIS is devoted to analysis of all effects on human health and the environment which might result from operations or reasonably foreseeable accidents associated with DOE and Navy management of spent nuclear fuel. The details of the analyses for Naval spent nuclear fuel management are described in Attachments A and F of Appendix D to Volume 1. Chapters 3 and 5 summarize the results of these analyses and the detailed results are described in the Attachments to Appendix D.

Every effort has been made to include all possible affected areas, including any identified during the public review of this EIS. It is believed that no important area of potential human health effect or environmental impact has been omitted from this EIS.

The health, safety, and welfare of citizens will be considered carefully in reaching any decision on the course of action to be used for management of spent nuclear fuel.

08.03.01 (012) Government Policy and Credibility

COMMENT

If the Navy and DOE decide to manage spent nuclear fuel at a location for the period covered by this EIS, that location will become a permanent site for storage of spent nuclear fuel.

RESPONSE

It is not correct that a site selected for management of Naval spent nuclear fuel during the period of this EIS will become a permanent site for storage of spent nuclear fuel. Congress has determined under the Nuclear Waste Policy Act, as amended, that spent nuclear fuel and high-level waste will be buried in a geologic repository, independent of the location where DOE or commercial spent nuclear fuel is stored.

The Navy supports selecting and implementing an approach for final disposition of Naval spent nuclear fuel as soon as possible. There is no benefit to the Navy to store Naval spent nuclear fuel any longer than is necessary to implement the method selected for ultimate disposition. The Navy's commitment is reinforced by the Navy's bearing the cost of storing Naval spent nuclear fuel pending ultimate disposition.

The 40-year period considered in this EIS is intended to provide enough time for selecting and implementing a method for ultimate disposition. In this EIS, the Navy has clearly stated its preferred alternative for management of Naval spent nuclear fuel during the 40 year interim period and discussed how this alternative would support the Navy's mission, as established by Congress. In Volume 1, Appendix D, the environmental impacts of the Navy's proposed action and all alternatives, including those that would not support the Navy's mission, are evaluated in accordance with NEPA, the Council on Environmental Quality regulations, and DOE and Navy regulations.

See also the response to comment 08.03.03 (001).

08.03.01 (013) Government Policy and Credibility**COMMENT**

The Navy should reconsider its policy of not notifying emergency response organizations of shipments of Naval spent nuclear fuel passing through their areas of responsibility.

RESPONSE

The Naval Nuclear Propulsion Program does not announce the times or routes of shipments in order to make it more difficult for terrorists, saboteurs, or hijackers to plan and execute an attack on these shipments. This is in accordance with federal government policy and regulations governing such shipments. The Navy's policy on notification is also in full compliance with the applicable state and federal regulations for such shipments containing highly enriched weapons-grade uranium. The extremely rugged design of Naval spent nuclear fuel and the shipping containers, which comply fully with Department of Transportation and Nuclear Regulatory Commission requirements, make it

unnecessary for emergency response personnel to maintain any extraordinary level of alert during the movement of shipments.

As a practical matter, such notification would not improve emergency response or reduce the already small risks for these shipments. Every shipment is accompanied at all times by escorts who can immediately contact the Naval Nuclear Propulsion Program emergency control center and federal or local emergency response personnel in the event of a problem. When notified, emergency response personnel would utilize existing emergency response plans and capabilities, if needed.

The risks associated with the complete range of accidents which might occur during these shipments are analyzed in detail in Attachment A of Appendix D to Volume 1 and were shown to be very small.

08.03.01 (014) Government Policy and Credibility

COMMENT

The Naval Nuclear Propulsion Program refused to be included in the assessment of vulnerabilities for spent nuclear fuel storage performed by DOE.

RESPONSE

This comment is incorrect. The Naval Nuclear Propulsion Program participated in the referenced review of potential vulnerabilities in DOE spent nuclear fuel facilities. Facilities at the Idaho Chemical Processing Plant and the Expanded Core Facility at INEL used for the management of Naval spent nuclear fuel were included in the study and are discussed in both the summary (Volume I) and the detailed information sections (Volume II and III) of the final report.

DOE's Vulnerability Assessment states on pages 22 and 32 of Volume 1 that no vulnerabilities associated with the storage of Naval spent nuclear fuel were identified.

08.03.01 (015) Government Policy and Credibility

COMMENT

The risks and costs associated with the period of transition to a new alternative for the management of Naval spent nuclear fuel are unacceptable.

RESPONSE

The risks associated with all of the alternatives considered for management of DOE's spent nuclear fuel, including Naval spent nuclear fuel have been calculated and presented in this EIS. All of these risks would be small. The risks associated with the normal operations involved in management of Naval spent

nuclear fuel and a broad range of hypothetical accidents are summarized in Volume 1, Appendix D, Chapter 3.

For example, as summarized in Chapter 3 and described in more detail in Chapter 5 and Appendix D, Attachments A and F, the risk resulting from normal operations or accidents associated with Naval spent nuclear fuel management during the 40 years covered by this EIS would be less than 1 additional cancer fatality or radiation-related health effect over the entire time. This risk is very small in comparison to the other risks of daily life.

As discussed in the EIS, it is true that selection of an alternative which would involve a change from the current practice of sending Naval spent nuclear fuel to the Expanded Core Facility at INEL would involve higher costs and could require a transition period during which Naval spent nuclear fuel would accumulate at the sites where it is removed from reactors. Even though the Navy does not prefer any of these alternatives, the impacts on human health and the environment associated with such a transition period have been considered in Volume 1, Appendix D and were found to be very small.

08.03.01 (016) Government Policy and Credibility

COMMENT

The alternatives for management of DOE and Naval spent nuclear fuel should be reconsidered after ten years or possibly even five years instead of forty years.

RESPONSE

The alternatives for management of spent nuclear fuel will be reconsidered in the future if new information or circumstances show a need for changes in the strategy for management of spent nuclear fuel.

08.03.01 (017) Government Policy and Credibility

COMMENT

The Navy has disregarded the requirements of NEPA by identifying a preferred alternative in the Draft EIS.

RESPONSE

The statement that the Navy has disregarded the requirements of NEPA by identifying a preferred alternative in the Draft EIS is incorrect. To the contrary, the regulations issued by the Council on Environmental Quality to implement NEPA require an agency to identify in the Draft EIS its preferred alternative if one exists (40 CFR 1502.14(e)). This preferred alternative may be altered in the Final EIS if substantive issues are identified during public review of the Draft EIS. Therefore, identifying a

preferred alternative in the Draft EIS does not imply that a decision has already been made or that the agency has any lack of regard for the public process specified by NEPA or the value of the public review.

Identification of a preferred alternative in the Draft EIS is not a violation of the requirements of NEPA, nor is it prejudicial to public or technical review. It simply provides a clear indication of the agency's preference based on the information available at the time the Draft EIS is issued and allows the public to include this factor in their review of the Draft EIS. Indeed, most draft environmental impact statements do contain preferred alternatives to serve this purpose.

08.03.01 (018) Government Policy and Credibility

COMMENT

The risks associated with defueling of nuclear-powered warships should be included in this EIS.

RESPONSE

Refueling and defueling of Naval nuclear reactors are considered to be part of the effort associated with reactor operations. The purpose of this EIS is to evaluate alternatives for and the possible impacts on the environment and human health associated with the management of spent nuclear fuel, including Naval spent nuclear fuel, after it has been removed from reactors. Indeed, Nuclear Regulatory Commission regulations and DOE Orders define spent nuclear fuel as "fuel which has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing".

All of the alternatives considered would require removal of spent nuclear fuel from nuclear-powered ships, so analyses of accidents associated with such work would not assist in the evaluation of the alternatives for management of spent nuclear fuel. This the case for other types of spent nuclear fuel as well, and refueling of university or research reactors is similarly not within the scope of this EIS.

08.03.01 (019) Government Policy and Credibility

COMMENT

The Navy should pay the costs for storage and disposal of Naval spent nuclear fuel.

RESPONSE

Under current federal policy, the Navy does pay the costs of storage for Naval spent nuclear fuel and will pay the costs of disposal for Naval spent nuclear fuel once those costs are established.

08.03.01 (020) Government Policy and Credibility

COMMENT

Disruption of the process of deactivations and refuelings of nuclear-powered Naval vessels will impair the Navy's mission and affect the national security of this country.

RESPONSE

None of the alternatives considered in detail in this EIS would impact the Navy's ability to refuel and defuel nuclear-powered warships because each alternative provides for a transition period while new facilities would be procured or constructed. The Navy's preferred alternative best supports the Navy's broader mission by allowing examination of all Naval spent nuclear fuel. The importance of examination of Naval spent nuclear fuel to the Navy's mission is discussed in Section 3.7 of Appendix D to Volume I of this EIS.

08.03.01 (021) Government Policy and Credibility

COMMENT

Operation of reactors at the Kesselring Site should be stopped immediately or should be stopped until a specified condition (such as a decision on ultimate disposition of spent nuclear fuel) is satisfied.

RESPONSE

Cessation or continuation of reactor operations at the Kesselring Site is not one of the alternatives being evaluated in this EIS. The continued operation of these reactors will not remove the need for a decision on a method for safely managing spent nuclear fuel until a method for ultimate disposition is selected. Therefore, the continued operation of the reactors at the Kesselring Site is beyond the scope of this Environmental Impact Statement.

As discussed in this Environmental Impact Statement, spent nuclear fuel already exists and will require safe management at some location. This EIS considers management of spent nuclear fuel containing 2800 metric tons of heavy metal, 2700 metric tons of which is already in existence. Approximately 65 metric tons of the total of 2800 metric tons of heavy metal is Naval spent nuclear fuel and only a small portion of this will be generated at the Kesselring Site in the coming years. Thus, stopping the operation of the reactors at the Kesselring Site will not eliminate the need for safe management of spent nuclear fuel.

08.03.01 (022) Government Policy and Credibility

COMMENT

A commentor was skeptical that the transition to any new method for management of Naval spent nuclear fuel could be implemented in time to prevent accumulation of spent nuclear fuel at Navy sites.

RESPONSE

Section 3.8 of Appendix D to Volume 1 of the EIS states that most of the alternatives would require a period of implementation while facilities were constructed and equipment was procured. Existing facilities and equipment would be employed to the fullest extent to manage Naval spent nuclear fuel during the first six years of the transition to ensure refueling and defueling of nuclear-powered warships could proceed as necessary during this period. Naval spent nuclear fuel would be transported to the Expanded Core Facility at INEL during the transition should an alternative be selected requiring construction of a new examination facility or procurement of additional shipping containers for dry storage at Navy sites. For the No Action alternative, Naval spent nuclear fuel would be shipped to INEL for approximately three years. For alternatives requiring replacement of the Expanded Core Facility, the transition would take approximately six years. After the transition period, the new facilities would be completed to the point that they could begin to accept Naval spent nuclear fuel.

These transition periods represent the best estimate of the time needed to execute any of the alternatives, given the need for federal budgeting, procurement, and construction.

8.3.2 Legislative and Regulatory Compliance

08.03.02 (001) Legislative and Regulatory Compliance

COMMENT

Some persons alleged that the storage of Naval spent nuclear fuel at Pearl Harbor Naval Shipyard would violate a provision of the state constitution of Hawaii.

RESPONSE

The state constitution of Hawaii prohibits the disposal of radioactive waste within the state without the approval of the state legislature. Regardless of the applicability of that requirement to federal activities, no disposal of spent nuclear fuel in Hawaii is considered in this EIS. Under all of the alternatives considered, Naval spent nuclear fuel would be monitored and maintained at the interim storage location while the method for ultimate disposition is being identified and implemented, consistent with Congressional direction, such as disposal in a geologic repository. Currently, Congress has directed DOE to assess the Yucca Mountain site in Nevada as a candidate geologic repository.

08.03.02 (002) Legislative and Regulatory Compliance

COMMENT

The Office of State Planning for the state of Hawaii has requested submittal of a Coastal Zone Management consistency plan if an alternative involving the storage of Naval spent nuclear fuel at Pearl Harbor is selected.

RESPONSE

In accordance with the Coastal Zone Management Act (16 USC 1453), the Pearl Harbor Naval Shipyard, as part of the Pearl Harbor Naval Base, is excluded from the coastal zone since it is on land controlled by the Federal Government. Therefore, a Coastal Zone Management consistency determination is not required for storage of Naval spent nuclear fuel at Pearl Harbor Naval Shipyard.

It should be noted that the impacts of the alternatives involving storage of spent Naval nuclear fuel at the shipyard would be very small, so no impact on Hawaii's Coastal Zone would be expected if such an alternative were selected.

8.3.3 Mission

08.03.03 (001) Mission

COMMENT

The Environmental Impact Statement should provide a description of the impacts on the Navy's mission resulting from not removing spent nuclear fuel from ships.

RESPONSE

Section 3.6.3 of Appendix D to Volume I provides a description of the impacts to the Navy mission (and to the environment) that would arise from storing Naval spent nuclear fuel on inactive ships. In summary, storing Naval spent nuclear fuel aboard inactive ships would use up the limited space at shipyards, idle skilled shipyard workers when the shipyards ran out of ship servicing work and room to do work, and tie up highly trained Navy nuclear ship operators. In return, this concept would not produce lower environmental impacts than the alternatives considered in detail in this EIS and might actually increase the environmental impacts.

It is physically possible to retain spent fuel in the reactors in nuclear-powered vessels and moor the ships at shipyards until a decision on the ultimate disposition of spent nuclear fuel is reached. Most inactive Russian nuclear-powered submarines have been tied up at shipyards without removing their spent fuel. After a decision on ultimate disposition is made and implemented, the fuel could be removed from the ships and transported to the permanent disposal facility.

Implementing this alternative would require extensive modifications to facilities at shipyards, including increasing the number of piers and the availability of waterfront utilities to support the ships at their moorings. Other shipyard facilities also might have to be modified or replaced as a result of the use of waterfront space to moor the numbers of ships involved during the 40-year period. The construction of piers and other needed facilities would cause impacts on the waterfronts and harbors and could affect the local ecology. The radiological effects on the environment or people in the vicinity would be negligible as long as the nuclear-powered vessels and propulsion plants were maintained under the same procedures and discipline used for operating ships, since the environmental effects of operating U.S. Navy nuclear-powered vessels are well documented and known to be small.

This method for storing Naval spent nuclear fuel would cause some increase in construction activities, but in the long run it would result in the idling of skilled workers as the shipyards ran out of room and work schedules were disrupted by the loss of ship servicing work. Mooring the ships without removing the Naval spent nuclear fuel would also utilize highly trained Navy nuclear ship operators in the unproductive task of watching over shut down ships. The resources dedicated to providing the additional moorings would produce no improvements in a shipyard's ability to perform its mission and would actually decrease its capabilities.

In addition, the costs and impacts on national security resulting from such an approach would be large; it would affect the ability of the U.S. Navy to carry out its mission. Further, the costs of maintaining the ships with spent nuclear fuel remaining installed under Navy operating procedures and providing the additional piers and waterfront services and utilities would be large. The costs of this approach would be high both for ships which are to be decommissioned and for ships which would normally be refueled and returned to duty. In the case of ships which are being decommissioned at the end of their life, the primary cost of this alternative would be to maintain qualified nuclear operators, shipboard equipment, and associated shipyard support, including security, to ensure nuclear and radiological safety for the workers and the public. This would be more costly than removal of the spent fuel for storage because of the need to maintain operating personnel aboard the ships until they are defueled. Failure to remove the spent nuclear fuel from Navy ships which are still needed for service would result in these ships being unavailable once their currently installed reactor fuel reaches the end of useful life. This is impractical and even more expensive than leaving the spent fuel in decommissioned ships because the ships would have to be replaced or the Navy would be forced to operate without the full complement of ships required to execute national policies.

In summary, this alternative would be costly and would involve extensive actions which would have an effect on the environment due to construction activities. This alternative would also not permit continued service of many Navy ships and only postpone decisions on a satisfactory storage location. As a result of these considerations, this alternative was eliminated from detailed analysis.

Storing Naval spent nuclear fuel on inactive ships would also prevent examination of the Naval spent nuclear fuel. The EIS explains that the inspections currently performed are important for three reasons: to provide data on current reactor performance, to validate models used to predict future performance, and to support research to improve reactor design (See Sections 2.4.1, 3.1, 3.9 and B.2 of Appendix D to Volume 1).

Naval fuel examinations provide real data on reactor cores installed in ships currently operating in the Fleet. This information is essential to validate calculational models and analyses. Through the years, the Naval Nuclear Propulsion Program has built a substantial technical database from examinations of earlier reactor core types. The Program predicts the performance of current core types with calculational models supported by this database. Essentially no information exists yet on core types that will form the backbone of the nuclear fleet for the foreseeable future (Trident-class submarines, LOS ANGELES-class submarines, and NIMITZ-class aircraft carriers). Data from these reactor core types are necessary to validate basic assumptions of current models, provide a measure of variability which exists between individual cores and within a single core, and identify any unanticipated effects of operation that have not been evaluated or accounted for in current models.

Confidence in the validity of engineering models is essential for assurance that ship operations can continue without restriction. Since reactors operating in the Fleet are not taxed to the limits of their design during peacetime operations, the Program requires a technically-sound basis for continuing to conclude we have a robust design. Prototype reactors can not by themselves provide this information as their operation is not identical to that of a warship. The fact that a core operated satisfactorily with no indication of a problem during a normal shipboard lifetime does not guarantee that the core would have been acceptable under the worst case conditions for which it was designed. The examination of spent nuclear fuel from each core provides the assurance needed that there are no unexpected technical issues not evaluated and addressed in the models that would affect continued unrestricted operation.

Data from examinations also contributes significantly to improvements in reactor design. Improvements in calculational models and analyses have enabled the Program to increase both the lifetime and the performance of reactor cores. For example, the reactor cores installed in the USS NAUTILUS in the

1950's operated for two years. Current reactor cores are designed to last over 20 years, a significant technical accomplishment unique to Naval fuel. The Navy is seeking to develop a life-of-the-ship (30 year) core for the New Attack Submarine which is still in the design stages. This core will further reduce the amount of spent nuclear fuel generated in the long-term, as ships will not require refueling during their lifetime. Continuing data from current core types is essential if this effort is to succeed.

In the final analysis, examination of spent Naval fuel absorbs considerable resources. In a time of extremely tight budgets, the Navy would not be performing such examinations unless they were judged to be necessary to support the conduct of technical work. Examinations done over the last 37 years have played a key role in achieving over 4400 reactor-years of safe nuclear reactor operations, having nuclear-powered warships steam over 100,000,000 miles, and increasing core lifetimes from 2 years to over 20 years. The record shows there is no reason for reducing the technical basis upon which safe Naval reactor design and operation are founded -- and that basis includes as a key cornerstone the examination of Naval spent nuclear fuel.

08.03.03 (002) Mission

COMMENT

The EIS should explain further why examination of all Naval spent nuclear fuel is essential to the mission of the Navy.

RESPONSE

The EIS explains that these inspections are important for three reasons: to provide data on current reactor performance, to validate models used to predict future performance, and to support research to improve reactor design (See Volume 1, Appendix D, sections 2.4.1, 3.1, 3.9, and B.2). The EIS evaluates five sites for full examination of Naval spent nuclear fuel and one site for limited examination. The Expanded Core Facility at INEL is the only existing facility with the capability for performing examinations of Naval spent nuclear fuel.

Naval fuel examinations provide real data on reactor cores installed in ships currently operating in the Fleet. This information is essential to validate calculational models and analyses. Through the years, the Naval Nuclear Propulsion Program has built a substantial technical data base from examinations of earlier reactor core types. The Program predicts the performance of current core types with calculational models supported by this data base. Essentially no information exists yet on core types that will form the backbone of the nuclear fleet for the foreseeable future (Trident-class submarines, LOS ANGELES-class submarines, and NIMITZ-class aircraft carriers). Data from these reactor core types are necessary to

validate basic assumptions of current models, provide a measure of variability that exists between individual cores and within a single core, and identify any unanticipated effects of operation that have not been evaluated or accounted for in current models.

Confidence in the validity of engineering models is essential for assurance that ship operations can continue without restriction. Because reactors operating in the Fleet are not taxed to the limits of their design during peacetime operations, the program requires a technically sound basis for continuing to conclude we have a robust design. Prototype reactors can not by themselves provide this information as their operation is not identical to that of a warship. The fact that a core operated satisfactorily with no indication of a problem during a normal shipboard lifetime does not guarantee that the core would have been acceptable under the worst case conditions for which it was designed. The examination of spent nuclear fuel from each core provides the assurance needed that there are no unexpected technical issues not evaluated and addressed in the models that would affect continued unrestricted operation.

Data from examinations also contribute significantly to improvements in reactor design. Improvements in calculational models and analyses have enabled the program to increase both the lifetime and the performance of reactor cores. For example, the reactor cores installed in the USS NAUTILUS in the 1950s operated for 2 years. Current reactor cores are designed to last more than 20 years, a significant technical accomplishment unique to Naval fuel. The Navy is seeking to develop a life-of-the-ship (30-year) core for the New Attack Submarine which is still in the design stages. This core will further reduce the amount of spent fuel generated in the long-term, as ships will not require refueling during their lifetime. Continuing data from current core types is essential if this effort is to succeed.

In the final analysis, examination of spent Naval fuel absorbs considerable resources. In a time of extremely tight budgets, the Navy would not be performing such examinations unless they were judged to be necessary to support the conduct of technical work. Examinations done over the last 37 years have played a key role in achieving more than 4,400 reactor-years of safe nuclear reactor operations, having nuclear-powered warships steam more than 100 million miles, and increasing core lifetimes from 2 years to more than 20 years. The record shows there is no reason for reducing the technical basis upon which safe Naval reactor design and operation are founded -- and that basis includes as a cornerstone the examination of Naval spent nuclear fuel.

Language has been added to Volume 1 and Volume 1, Appendix D, Chapter 3 of the EIS explaining this matter further.

08.03.03 (003) Mission

COMMENT

The EIS should explain how much Naval spent nuclear fuel receives more than just visual examination, and why that is essential to meet the Navy's mission.

RESPONSE

The EIS explains that all Naval spent nuclear fuel is visually examined on exterior and interior surfaces (See sections 2.4.1 and B.2 of Appendix D to Volume 1). These examinations require that non-fuel structural material first be removed from the fuel cells, an operation which is currently performed at only one location, the Expanded Core Facility at INEL. About 10 to 20 percent of the spent nuclear fuel cores receive additional examination in the form of detailed dimensional measurements to detect even minute changes in fuel cell or fuel element dimensions, measurements to determine the amount of surface corrosion on fuel elements which could impede heat transfer, and more intrusive sampling to discern internal performance characteristics of the fuel. The examinations are essential in supporting the Navy's continued safe operation of Naval reactors and design of new, improved fuel having longer lifetime (see sections 3.1 and 3.9 of Appendix D).

Naval fuel examinations provide real data on reactor cores installed in ships currently operating in the Fleet. This information is essential to validate calculational models and analyses. Through the years, the Naval Nuclear Propulsion Program has built a substantial technical database from examinations of earlier reactor core types. The program predicts the performance of current core types with calculational models supported by this database. Essentially no information exists yet on core types that will form the backbone of the nuclear fleet for the foreseeable future (Trident-class submarines, LOS ANGELES-class submarines, and NIMITZ-class aircraft carriers). Data from these reactor core types are necessary to validate basic assumptions of current models, provide a measure of variability which exists between individual cores and within a single core, and identify any unanticipated effects of operation that have not been evaluated or accounted for in current models.

Confidence in the validity of engineering models is essential for assurance that ship operations can continue without restriction. Since reactors operating in the Fleet are not taxed to the limits of their design during peacetime operations, the program requires a technically-sound basis for continuing to conclude we have a robust design. Prototype reactors can not by themselves provide this information as their operation is not identical to that of a warship. The fact that a core operated satisfactorily with no indication of a problem during a normal shipboard lifetime does not guarantee that the core would have been acceptable under the worst case conditions for which it was designed. The examination of spent

fuel from each core provides the assurance needed that there are no unexpected technical issues not evaluated and addressed in the models that would affect continued unrestricted operation.

Data from examinations also contributes significantly to improvements in reactor design. Improvements in calculational models and analyses have enabled the program to increase both the lifetime and the performance of reactor cores. For example, the reactor cores installed in the USS NAUTILUS in the 1950's operated for two years. Current reactor cores are designed to last over 20 years, a significant technical accomplishment unique to Naval fuel. The Navy is seeking to develop a life-of-the-ship (30 year) core for the New Attack Submarine which is still in the design stages. This core will further reduce the amount of spent nuclear fuel generated in the long-term, as ships will not require refueling during their lifetime. Continuing data from current core types is essential if this effort is to succeed.

In the final analysis, examination of spent Naval fuel absorbs considerable resources. In a time of extremely tight budgets, the Navy would not be performing such examinations unless they were judged to be necessary to support the conduct of technical work. Examinations done over the last 37 years have played a key role in achieving over 4400 reactor-years of safe nuclear reactor operations, having nuclear-powered warships steam over 100,000,000 miles, and increasing core lifetimes from 2 years to over 20 years. The record shows there is no reason for reducing the technical basis upon which safe Naval reactor design and operation are founded -- and that basis includes as a key cornerstone the examination of Naval spent nuclear fuel.

Section 2.4.1 of Appendix D to Volume 1 has been revised to include information on the amount of Naval spent nuclear fuel which receives additional examination.

08.03.03 (004) Mission

COMMENT

Some Naval fuel inspection is performed in facilities other than ECF; this seems to be in conflict with the navy's assertion that all its spent fuel is examined at ECF. Complete information about the "test specimen shipments to or from several laboratories and test facilities" mentioned at A.2.4 of Volume 1, Appendix D. A detailed description of all fuel examination and testing facilities available to the nuclear navy should be provided.

RESPONSE

This EIS correctly states that all spent nuclear fuel removed from Naval nuclear-powered ships and prototypes is transported to the Expended Core Facility at INEL. This EIS in Volume 1, Appendix D, Sections 2.4.1 and B.2, describes how all Naval fuel modules are visually examined in the ECF water

pools to verify that the spent fuel has performed as expected. Some modules are selected for more detailed examination or analysis. These more extensive examinations, which include destructive as well as nondestructive operations on the fuel and structural regions of the modules, are performed in the Expanded Core Facility water pools and shielded cells.

The Naval Nuclear Propulsion Program evaluates small specimens of both fuel and non-fuel materials for possible use in Naval reactor systems. As discussed in EIS Volume I, Appendix D, Section B.3, such specimens are irradiated at the INEL Test Reactor Area and then returned to the Expanded Core Facility for examination. A typical specimen undergoes several cycles of irradiation and examination over a period of months or years. The examination includes nondestructive and destructive operations in the Expanded Core Facility water pools and shielded cells. The destructive operations may include, for example, sectioning of specimens for additional testing or analysis.

Certain specimens may require specialized testing or examination not available at the Expanded Core Facility. After the initial inspections at ECF, these specimens are shipped off-site, typically to the Knolls Atomic Power Laboratory or the Bettis Atomic Power Laboratory, for further inspection in their shielded cells and glove boxes.

In summary, all Naval spent nuclear fuel and test specimens are examined at the Expanded Core Facility at INEL. Nearly all of the individual tests and examinations are performed in the Expanded Core Facility water pools and shielded cells. There are currently no other facilities available to the Navy which could perform this work, but alternatives to the use of the Expanded Core Facility at INEL are evaluated in this EIS. Specialized tests and examinations may be performed at off-site locations and environmental impacts associated with the transportation of these specimens are included in this EIS (refer to Attachment A) to provide a complete and comprehensive evaluation for all alternatives considered.

08.03.03 (005) Mission

COMMENT

There is a need to examine Naval spent nuclear fuel to maintain the safety of the nuclear-powered Naval vessels and to promote improvements in that fuel, including longer-lived cores which produce less spent nuclear fuel for a given amount of energy produced.

RESPONSE

The observation that examination of Naval spent nuclear fuel is important to maintaining the safety of the Navy's nuclear power program and to improving the performance of future designs, along the way reducing the amount of spent nuclear fuel which must be managed, supports the Navy's evaluation of the alternatives in this EIS. The ability to examine all Naval spent nuclear fuel is a factor in the selection of the Navy's preferred alternative for the management of spent nuclear fuel. The examination of spent Naval fuel absorbs considerable resources. In a time of extremely tight budgets, the Navy would not be performing such examinations unless they were judged to be necessary to support the conduct of technical work. Examinations done over the last 37 years have played a key role in achieving over 4400 reactor-years of safe nuclear reactor operations, having nuclear-powered warships steam over 100,000,000 miles, and increasing core lifetimes from 2 years to over 20 years. The record shows there is no reason for reducing the technical basis upon which safe Naval reactor design and operation are founded -- and that basis includes as a key cornerstone the examination of Naval spent nuclear fuel.

8.3.4 Environmental Justice**08.03.04 (001) Environmental Justice****COMMENT**

The possibility that Native American, Native Hawaiian, or other groups, including low income groups might suffer disproportionately high human health effects or environmental impacts under any of the alternatives considered for management of spent nuclear fuel should be evaluated.

RESPONSE

Analyses of the impacts associated with management of Naval spent nuclear fuel showed that any effects on human health or the environment would be small for all of the alternatives considered. The potential impacts due to normal operations or hypothetical accident conditions associated with the management of Naval spent nuclear fuel present little or no significant risk and do not constitute a credible adverse impact to the surrounding population. Therefore, the impacts of Naval spent nuclear fuel management also do not constitute a disproportionately high and adverse impact to any particular segment of the population, minorities and low-income groups included.

A description of the composition of the populations surrounding the sites considered for management of Naval spent nuclear fuel and the results of evaluation of the potential for disproportionately high and adverse impacts on subgroups of these populations has been added to Chapters 4 and 5 of Appendix D to Volume 1.

8.3.5 Past Practices

08.03.05 (001) Past Practices

COMMENT

Some persons stated that they believed that past environmental practices of the Navy had resulted in contamination of the water or soil in a location. Most of these statements did not identify the specific practices involved and in some cases did not identify a specific location, but one mentioned toxic waste in Kitsap County, Washington, another mentioned pollution of Puget Sound, and some mentioned the Kahoolawe and Waikane Valley areas of Hawaii.

RESPONSE

The Navy complies with all applicable federal, state, and local environmental laws and regulations for protection of the environment. Some of the federal laws and regulations which apply to Navy activities include the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA), the Safe Drinking Water Act, the Clean Water Act, and the Clean Air Act, among many others. All of these laws have either the U. S. Environmental Protection Agency or appropriate departments in the host states as the regulator. The Naval Nuclear Propulsion Program's compliance with these laws is actively monitored by the EPA and the states and in recent years there have been more than 300 inspections, examinations, and audits by state and federal agencies under these laws with no significant findings.

Some concerns expressed about past environmental practices were not specific enough to permit evaluation. Others do not relate to the activities of the Naval Nuclear Propulsion Program, such as Superfund sites in Kitsap County and the pollution of the Chesapeake Bay.

The Kahoolawe and Waikane Valley areas of Hawaii were target ranges. These areas have not been affected by the operation or servicing of nuclear-powered Naval vessels. Similarly, the concerns about the effects of past environmental practices at Pearl Harbor do not appear to be specifically related to the activities of the Naval Nuclear Propulsion Program. However, the Pearl Harbor Naval complex, the U.S. Environmental Protection Agency, and the state of Hawaii recently entered into a Federal Facility Agreement under Section 120 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). This agreement has as its purpose the investigation and remediation of the environmental impacts of past and present Navy activities at Pearl Harbor and assurance of the effectiveness of cleanup actions by coordination with federal and state authorities.

Some of the issues identified in comments may appear to be related to the Naval Nuclear Propulsion Program, but review of these cases has shown that they are not caused by the Program or the Navy. The following are examples of such matters:

1. The report in the Seattle Post-Intelligencer of March 9, 1994, that low levels of Iodine-131 have been detected in the water around Puget Sound Naval Shipyard apparently did not include the fact that the site where Iodine-131 was identified is located near the outfall of the Bremerton sewage treatment plant. Iodine-131 is commonly used for therapeutic purposes in the treatment of medical patients who have thyroid disorders and it is not unusual to detect Iodine-131 in sanitary sewer effluent resulting from patients' excreta. Consequently, the most likely source of the Iodine-131 found in Sinclair inlet is from medical applications.

Activities associated with Naval nuclear operations at the shipyard do not result in intentional discharge of any radioactive liquid effluent. In addition, Iodine-131 is a product of fission in nuclear reactors, but all Iodine-131 produced from Naval nuclear operations at the shipyard is totally contained within the nuclear fuel and could not escape to the reactor coolant or the environment. Frequent routine testing of the reactor coolant confirms that Iodine-131 is not released from the fuel. Consequently, the source of any radioactive iodine in the waters of Puget Sound was not released from activities associated with nuclear-powered Naval vessels.

2. The reason Saratoga County was fined by the State of New York for problems in Kayderosseras Creek during work on the Northline Bridge was not related to material released from the Kesselring Site. In fact, the fine had nothing to do with the sediment in the creek or material from the Kesselring Site or any other site along the streams involved. This has been confirmed by the Director of the Saratoga County Environmental Management Services.

There is a memorandum of understanding between the New York State Department of Environmental Conservation and Saratoga County covering work in watercourses and wetlands associated with bridge maintenance or renovation. The New York State Department of Transportation requested Saratoga County to perform some work to prevent erosion or undercutting of the approaches to the Northline Bridge. While performing the requested modifications to the Northline Bridge approaches, Saratoga County exceeded the scope of work allowed by the memorandum of understanding. The New York State Department of Environmental Conservation believed that the County should have obtained additional permission to perform the work and consequently fined Saratoga County.

Annual sampling of Glowegee Creek upstream and downstream from the Kesselring Site confirms that there is no significant difference between radioactivity upstream and downstream. The results of sediment sampling and other routine environmental sampling at and around the Kesselring Site are provided every year to state, county, and local officials.

None of the issues raised in such comments are related to the management of Naval spent nuclear fuel or the actions considered in this EIS.

08.03.05 (002) Past Practices

COMMENT

Some persons stated or implied that they believe that the Navy has not made reports of monitoring available to the public, has incorrectly represented the conclusions of these reports, or has released pollutants to the environment in violation of laws or regulations.

RESPONSE

This comment has no basis. Navy Nuclear Propulsion Program work is subject to and complies with all applicable Federal, state, and local regulations for protection of the environment, including the Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), the Superfund Amendments and Reauthorization Act (SARA), the Safe Drinking Water Act, the Clean Water Act, and the Clean Air Act, and others. The U. S. Environmental Protection Agency or state agencies regulate Naval Nuclear Propulsion Program work in accordance with these statutes.

Compliance with these laws for Naval Nuclear Propulsion Program work is actively monitored by the EPA and the states and over the last 14 years there have been more than 200 inspections, examinations, and audits by state and Federal agencies under these laws with no significant problems identified and no fines or penalties imposed. The reports of the monitoring and inspections performed by these agencies can be obtained from the agency involved, and the Navy has provided copies of many of these reports in response to requests from the public.

The Navy has provided a large amount of information on the shipment of Naval spent nuclear fuel and the types and amounts of radiation or radioactive material involved in releases from normal operations and postulated accidents in Appendix D to Volume 1. Appendix D also includes descriptions of the Expanded Core Facility and Naval spent nuclear fuel operations, including transportation (See, for example, Chapters 2 and 3 and Attachments A, B, and F). The Navy has attempted to provide enough

information on radiation, radioactivity, and other aspects of operations or hypothetical accidents to allow independent calculation of the environmental impacts. This is intended to permit independent analysis and verification of the estimated impacts calculated by the Navy. Every effort has been made during the preparation of this EIS to see that the best available information on impacts has been included.

08.03.05 (003) Past Practices

COMMENT

The commentor suggests that INEL's Radioactive Waste Management Information System Solid Waste Master Database under-reports the curie content of Navy wastes sent to the Radioactive Waste Management Complex, and that the wastes were buried in a manner that does not comply with applicable regulations. The commentor further states that items in the database in question were inappropriately deleted during a database validation conducted in fiscal year 1992.

RESPONSE

This comment is inaccurate. The Navy has complied and continues to comply with all applicable Federal, state, and local regulations for protection of the environment and handling and disposing of radioactive waste. The commentor's reference to burial of 8 million curies at INEL appears to be based on erroneous data in a 1989 unvalidated version of the database, later corrected by DOE personnel.

During the approximately 40 years of operation of the Naval Reactors Facility at INEL, the Naval Nuclear Propulsion Program has shipped approximately 4 million curies of low-level radioactive waste to the INEL Radioactive Waste Management Complex for disposal in accordance with all applicable regulations and stringent controls. Burial of low-level radioactive waste is the method for disposal prescribed by the Nuclear Regulatory Commission for waste under its jurisdiction. Sampling of the soil and groundwater in the vicinity of INEL has shown that the material buried at INEL for the Naval Nuclear Propulsion Program has had no detectable effect on air or water quality and has had no effect on the environment beyond the boundaries of the burial ground.

Examination of the database revealed that the entry proposed by the commentor as being deleted from the database was, in fact, present in the database.

08.03.05 (004) Past Practices

COMMENT

The commentor stated concern that Pearl Harbor Naval Shipyard already holds some large containers of radioactive waste and that the Navy claims such storage poses little threat to the surrounding community.

RESPONSE

This comment apparently refers to the use of shipping containers to store Naval spent nuclear fuel from recently defueled ships at Pearl Harbor Naval Shipyard during the period required for preparation of this EIS. The storage of these containers is covered under the Environmental Assessment for Short Term Storage of Naval Spent Fuel, dated December 1993, and issued by the U.S. Department of the Navy and the associated finding of No Significant Impact. Section 3.1 of the Environmental Assessment presents the results of analyses of the environmental impacts associated with the storage of a small number of containers at Pearl Harbor until the Record of Decision supported by this EIS is issued on June 1, 1995. Volume 1, Appendix D, Section F.1.4.1.5 of the EIS presents the radiation exposure analysis results for the storage of many more containers. The results of both analyses show that risks to workers or the public from the storage of Naval spent nuclear fuel in shipping containers at the Pearl Harbor Naval Shipyard are very low.

08.03.05 (005) Past Practices

COMMENT

The Southeastern Public Service Authority power plant located on the Norfolk Naval Shipyard has emitted dioxin. The operation of the plant has not demonstrated a community good faith approach.

RESPONSE

Although this comment is not related to Naval spent nuclear fuel management, a response has been provided.

The Southeastern Public Service Authority (SPSA) is a public agency created by the Virginia Water and Sewer Authority Act. In October 1992, SPSA assumed responsibility for operation and maintenance of the refuse-derived fuel plant, operating the plant under contract to the Navy. Solid wastes received from communities including Norfolk, Portsmouth, Chesapeake, Suffolk, Isle of Wight, Virginia Beach, Franklin, and Southhampton are shredded after sorting and removal of recyclable materials and burned in the plant to produce steam for the Norfolk Naval Shipyard and electricity to supplement the service supplied by Virginia Electric Power. The SPSA plant at Norfolk Naval Shipyard does not violate the requirements of the Clean Air Act since the U. S. Environmental Protection Agency (EPA) does not require compliance with any standard for dioxin emissions until 1996. In the absence of a federal standard for dioxin emissions, in 1989 the state of Virginia, with Navy agreement, incorporated into the plant's air emissions permit a dioxin standard consistent with the dioxin limit the EPA plans to implement in 1996. The Navy agreed to this standard at the time based on test data which was collected when the plant was relatively new, but that data apparently was not representative of the long- term,

steady-state operating conditions because monitoring later showed dioxin levels exceeded these limits. When the emissions were found to exceed the permit levels, the Navy, SPSA, and the Virginia Department of Environmental Quality established an agreement which resulted in a multimillion dollar contract, initiated in May 1993, to install state of the art pollution control equipment which exceeds EPA criteria. The plant will be in compliance with the Clean Air Act requirements in September 1995. two months ahead of the EPA schedule.

In the meantime, a unique spray water system operating in the flues for all boilers at the plant has been proven to reduce the dioxin and furan emissions by 95%. Risk exposure studies by the Virginia Department of Health have concluded that there is no unacceptable risk associated with the operation of the SPSA plant and sampling in the vicinity of the plant has found no dioxin or furan levels above background levels.

On a related point raised by the commentor, there is no record of a 1972 Supreme Court ruling involving the SPSA and the subject of dioxins at the refuse-derived fuel plant.

08.03.05 (006) Past Practices

COMMENT

Commentors provided statements of personal knowledge and conviction that the safety record of the Navy in servicing nuclear-powered vessels and in handling and shipping Naval spent nuclear fuel which support the Navy's statements in this EIS. Some commentors affirmed the relationship between examining all Naval spent nuclear fuel and ensuring the safety of nuclear-powered vessels and the sailors who serve aboard them.

RESPONSE

These comments support the Naval Nuclear Propulsion Program and its continuing efforts to maintain safety and minimize the risks associated with operation of the nuclear fleet. Protecting the people who sail and service nuclear-powered vessels, the public, and the environment has always been one of the highest priorities of the Navy.

8.4 Proposed Action and Alternatives

08.04 (001) Proposed Action and Alternatives

COMMENT

The Navy should consider some different alternatives than those in the Environmental Impact Statement.

RESPONSE

The Navy has considered in this Environmental Impact Statement all alternatives considered reasonable, as required by NEPA (42 USC 4332) and Federal regulations (40 CFR 1502.14).

08.04 (002) Proposed Action and Alternatives

COMMENT

The "no action" alternative should be revised to consider the cessation of nuclear powered warship refueling and defueling to make it a true "no action" alternative.

RESPONSE

Spent nuclear fuel and nuclear-powered warships currently exist, so there can be no alternative which truly involves no action. The No Action alternative defined in the EIS represents the minimum practical amount of action which can be taken with respect to spent nuclear fuel.

Ceasing the refueling and defueling of nuclear powered warships would entail substantially more action than the description of the "no action" alternative currently in the EIS. Specifically, the Navy would need to: (a) provide additional pier space to tie up ships which would have otherwise been refueled or defueled; (b) keep more Naval personnel on duty as crew members for ships which were scheduled to be decommissioned; (c) rearrange operating schedules to reflect for the unavailability of nuclear-powered warships planned for refueling; (d) substantially reduce the work at Naval shipyards resulting in the layoff of thousands of workers with commensurate serious economic impacts to the communities involved; and (e) remove some ships from operation thus reducing the fleet size below the level needed to support national policies. For these reasons, as discussed in Section 3.6.3 of Appendix D to Volume I, an alternative of leaving nuclear fuel aboard nuclear-powered warships was not examined in detail.

08.04 (003) Proposed Action and Alternatives

COMMENT

Storage for periods of the length considered in the EIS is not seen by some as "temporary" or "interim".

RESPONSE

Volume 1 of this EIS considers alternative approaches to safely, efficiently, and responsibly manage existing and projected quantities of spent nuclear fuel until the year 2035. This amount of time may be required to make and implement a decision on the ultimate disposition of spent nuclear fuel. This EIS provides the environmental information to support decisions that will facilitate a transition between DOE's current practices and ultimate disposition of spent nuclear fuel. The Navy and DOE intend to make the transition from fuel management under the alternatives considered in this EIS to ultimate disposition as quickly as practicable.

08.04 (004) Proposed Action and Alternatives**COMMENT**

Navy plans for dealing with the transition from current practices for management of Naval spent nuclear fuel to one of the other alternatives should be discussed.

RESPONSE

The transition period required if certain alternatives were selected is described in Section 3.8 of Appendix D to Volume 1. As described in Section 3.8, the transition would make use of existing facilities and transportation methods described under the alternatives considered. The risks associated with all of the alternatives considered for management of Naval spent nuclear fuel, summarized in Chapter 3 of Appendix D are small, so the risks associated with the transition period would be just as small.

08.04 (005) Proposed Action and Alternatives**COMMENT**

A commentor advocated storage of Naval spent nuclear fuel at the Expended Core Facility at INEL for a number of reasons.

RESPONSE

Long-term storage of spent nuclear fuel at the Expended Core Facility is not among the alternatives evaluated in the EIS because such storage would result in no reduction in environmental impacts from those for the alternatives considered and it would have a severe impact on the Navy's ability to perform its mission. Storage in the water pools at the Expended Core Facility would effectively preclude examination of Naval spent nuclear fuel at that facility because storage would use up the space in the water pool needed for machinery and examination equipment. This would require the construction of new facilities for the examination of Naval spent nuclear fuel or the loss of the ability to perform examinations of Naval spent nuclear fuel. The impact on the Navy's mission that would result from the loss of the ability to examine Naval spent nuclear fuel is described in Chapter 3 of this EIS.

Analyses of the impacts associated with storage of the Naval spent nuclear fuel at DOE sites are included in the appendices to the EIS for each site. For example, section 5 of Volume 1, Appendix B, includes the impact of storing Naval spent nuclear fuel in water pools at INEL.

Attachment F to Appendix D, Section F.1.4.1.4, does present the impacts of performing spent fuel examination at Expanded Core Facility. In addition, the impacts of spent nuclear fuel examination at all of DOE sites and Puget Sound Naval Shipyard and the impacts of water pool storage at the Naval shipyard sites are presented. Results of analyses of the impacts for dry storage at all of the Navy sites considered in this EIS are also provided. These results are shown in Section F.1.4.1.5 of Attachment F. For INEL analysis, a site near the Expanded Core Facility at the Naval Reactors Facility was selected.

08.04 (006) Proposed Action and Alternatives

COMMENT

According to a commentor, one hundred Naval spent nuclear fuel shipments to INEL planned during a transition from current practices for management of Naval spent nuclear fuel to one of the other alternatives make the No Action alternative a misnomer.

RESPONSE

The scope of this EIS is somewhat unique in that it evaluates ongoing operations; it is solely an assessment of an action not yet initiated. Accordingly, each alternative evaluated in this EIS for all spent nuclear fuel must involve some period of transition and implementation while new facilities are developed or procured. During the transition periods, which range from about three years for the No Action alternative up to about 20 years for Centralization of all DOE spent nuclear fuel, existing facilities would continue to be used for managing spent nuclear fuel. Under the No Action alternative, Naval spent nuclear fuel would be transported to INEL while shipping containers are procured for storage at Navy sites. This EIS evaluates a 40 year period, so a three year transition period is not excessive. Alternatives which would not require transportation for Naval spent nuclear fuel to INEL during a transition are untenable because the Navy would be unable to refuel and defuel naval vessels, thereby greatly impacting national security as further explained below and in Volume 1, Appendix D, Section 3.6.3. Moreover, such an approach would actually involve substantially more action and environmental impacts than shipment of the Naval fuel to INEL because all of the containers available to store Naval spent nuclear fuel at shipyards and prototype sites have been filled during the period while this EIS was being prepared.

Of particular importance in this regard is the refueling of the aircraft carrier USS NIMITZ. Refueling of the USS NIMITZ is scheduled to begin in 1998, but refueling preparations are already underway for this first-of-a-kind effort. These preparations entail emptying, by late 1995, spent nuclear fuel from the earlier refueling of the USS ENTERPRISE and defueling of the USS LONG BEACH. This spent nuclear fuel is at Newport News Shipbuilding and Drydock Company in a special support facility which is required for the NIMITZ Class refuelings. Once the facility is emptied, it would then be reconfigured for use, including refurbishment, maintenance, and extensive training of refueling personnel.

If the facility cannot be emptied, the USS NIMITZ cannot be refueled. The result is that the Navy would have fewer carriers than congressionally mandated to fulfill its national security requirements for regional conflicts (such as Operation Desert Storm) and peacekeeping (such as Somalia and Haiti). The national security need to ensure that the USS NIMITZ is refueled on schedule was certified by the Secretary of Defense in October 1994 and accepted by the Governor of Idaho in January 1995, when he allowed shipment of naval spent nuclear fuel from the Newport News Shipbuilding and Drydock Company to continue. Additional shipments would be required after the Record of Decision is issued on this EIS in June 1995 to complete unloading the facility by late 1995.

Volume 1, Appendix D, Section 3.6.3 provides a description of the impacts to the Navy mission (and to the environment) that would arise from storing naval spent nuclear fuel on inactive ships. In summary, storing naval spent nuclear fuel aboard inactive ships would use up the limited space at shipyards, idle skilled shipyard workers when the shipyards ran out of ship servicing work and room to do work, and tie up highly trained Navy nuclear ship operators. In return, this concept would not produce lower environmental impacts than the alternatives considered in detail in this EIS and might actually increase the environmental impacts.

08.04 (007) Proposed Action and Alternatives

COMMENT

The selection of the preferred alternative for the Navy should be based on a combination of the lowest risk and the lowest cost.

RESPONSE

Section 3.9 of Appendix D to Volume 1 of this EIS states that the selection of the navy's preferred alternative was based on consideration of several important issues, including consideration of the very small environmental impacts associated with all of the alternatives considered. Two of the predominant issues are cost and risk. Section 3.7.4 provides a summary of how the cost and risk values vary among the alternatives.

A comparison of the change in the number of potential cancer fatalities that might occur in the general population for each year of operation for each Naval spent nuclear fuel alternative is provided in Section 3.7.1.1, Table 3-1, in Appendix D to Volume 1. This comparison is broken down to show the risks associated with normal operations, the highest risk facility accident, and transportation operations. The risks due to Naval Nuclear Propulsion Program activities for any of the alternatives considered is very small. In all cases, thousands of years of repetition would be required before a single additional cancer fatality would occur. These risks are all so small that there is no real difference among the alternatives from the standpoint of risk.

The costs associated with each Naval spent nuclear fuel alternative are summarized in Table 3- 8 in Section 3.7.4 of Appendix D to Volume 1. The costs to the Navy for the alternatives considered range between \$1.5 billion and \$5.7 billion over 40 years.

08.04 (008) Proposed Action and Alternatives

COMMENT

Naval spent nuclear fuel shipping containers are ill-suited for storage.

RESPONSE

Naval spent nuclear fuel shipping containers are designed to withstand the rigors of shipment and hypothetical accidents which might occur during shipping. As a result, the certified shipping containers for Naval spent nuclear fuel are rugged enough to endure the far less demanding conditions associated with storage at Navy sites. This fact is borne out by the Navy's Environmental Assessment for storage of Naval spent nuclear until this EIS is completed and by the analyses provided in Attachment F of Appendix D to Volume 1 of this EIS.

As stated in Appendix D, a long-term seal would be needed to replace the rubber seal in the shipping containers if an alternative utilizing the shipping containers for storage for 40 years were selected as a result of this EIS. However, the existing seal is designed to last many years and is adequate for the period until that decision is made. The current shipping container seals are designed to contain radioactive material during frequent loading and unloading operations and during shipment, requiring it to be flexible and reusable. Design of a seal for long-term storage would be simpler because repeated opening and closing of the container lid would not occur during storage, allowing use of such methods as welding the container shut.

08.04 (009) Proposed Action and Alternatives

COMMENT

Naval spent nuclear fuel is being left indefinitely in shipping containers at shipyards.

RESPONSE

Naval spent nuclear fuel is being stored in sealed shipping containers at Navy sites during the period required for preparation of this EIS and selection of an alternative for management of DOE spent nuclear fuel. The environmental impacts associated with this storage were evaluated in an Environmental Assessment and Finding of No significant Impact issued in early 1994. An Environmental Assessment was prepared and a Finding of No significant Impact was issued because the impacts of the preferred alternative for this short period of storage were found to be small. The alternative which used storage in certified shipping containers at the sites which would continue to perform servicing of Naval reactors through June 1995 was selected as the best means of safely managing Naval spent nuclear fuel during the time needed for completion of this EIS.

The Record of Decision identifying the alternative selected for management of spent nuclear fuel selected will be issued on June 1, 1995. At that time, implementation of the alternative selected will begin. Naval spent nuclear fuel stored at Navy sites will be transferred to the locations associated with the alternative selected unless an alternative making use of storage at the Navy sites is selected.

08.04 (010) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should not be considered because of proximity to population centers.

RESPONSE

Under NEPA, the Navy is required to consider the full range of reasonable alternatives, including the alternative of taking no action. The analysis in the EIS demonstrated that the environmental impact of any of the alternatives would be small. This analysis took into consideration population data for each site. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics.

Although Naval sites are included in the analysis, the Navy has identified a preferred alternative in Section 3.9, Appendix D, Part A which would not store Naval spent nuclear fuel at Naval sites. The Navy's preferred alternative would resume the historic, technically sound and safe practice of conducting refueling and defueling of nuclear-powered warships and prototypes as planned, transporting the Naval

spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination, and transferring Naval spent nuclear fuel to DOE for storage at that site.

08.04 (011) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should not be considered because of an airport in the vicinity.

RESPONSE

The analyses in Appendix D to Volume 1 of the EIS specifically considered the location and characteristics of the airports in the vicinity of each site (See Attachment F of Appendix D to Volume 1). Even taking this into account, the risk from an airplane crashing into a shipping container was shown to be very low and the resulting risk of injury to the public small. For example, the most limiting accident involving Naval spent nuclear fuel is described in Attachment F of Appendix D to be an airplane crash into a shipping container at the Pearl Harbor Naval Shipyard. This accident would lead to 26 latent fatal cancers over the next fifty years in the population within 50 miles of the shipyard. Since the probability of the event is one chance in 100,000 per year, the risk would be 0.00026 latent fatal cancer fatalities per year or, in other words, about one chance in 4000 of single latent cancer fatality over a year. This risk is shared among the approximately 820,000 people residing within 50 miles of the shipyard who would be expected to experience over 2000 cancer fatalities from all other causes every year.

08.04 (012) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at Pearl Harbor Naval Shipyard should not be considered because the Honolulu airport is close enough that it might be damaged, making it more difficult for emergency assistance to reach the island.

RESPONSE

The most limiting accident involving Naval spent nuclear fuel is described in Attachment F of Appendix D to Volume 1 to be an airplane crash into a shipping container at the Pearl Harbor Naval Shipyard. This accident would lead to 26 latent fatal cancers over the next fifty years in the population within 50 miles of the shipyard. Since the probability of the event is one chance in 100,000 per year, the risk would be 0.00026 latent fatal cancer fatalities per year or, in other words, about one chance in 4000 of single latent cancer fatality over a year. This risk is shared among the approximately 820,000 people residing within 50 miles of the shipyard who would be expected to experience over 2000 cancer fatalities from all other causes every year. The analyses in Appendix D of the EIS specifically considered the location of the

Honolulu airport relative to Pearl Harbor Naval Shipyard. It also estimated the extent of contamination that might result from hypothetical accidents. The analysis of the impact of hypothetical accidents in Appendix D of the EIS did not rely on any off-shipyard response.

Taking into account the location of the airport and the effects of hypothetical accidents, the risk that the Honolulu airport could not be used to provide emergency assistance from the mainland would be very low and the resulting risk to the public small. Further, the Navy has significant emergency response capability on Oahu and does not rely on the mainland, State, or local resources for emergency response beyond existing emergency plans and resources.

08.04 (013) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should be ruled out because of an aquifer, stream, or other water in the vicinity.

RESPONSE

Although the Navy's preferred alternative is not to store Naval spent nuclear fuel at Naval sites, under NEPA, the Navy is required to consider the full range of reasonable alternatives, including the alternative of taking no action. The analysis in the EIS demonstrated that the environmental impact of any of the alternatives would be small. This analysis took into consideration nearby bodies of water. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics. The Navy has managed its spent nuclear fuel for nearly 40 years now without any significant environmental impact on water.

08.04 (014) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should be ruled out because of the possibility of seismic activity in the vicinity.

RESPONSE

Although the Navy's preferred alternative is not to store Naval spent nuclear fuel at Naval sites, under NEPA, the Naval Nuclear Propulsion Program is required to consider the full range of reasonable alternatives, including the alternative of taking no action. The analyses in Appendix D (See Attachment F, Sections F.1.2, F.1.3, and F.1.4) took into consideration accidents which might be caused by natural phenomena, including earthquakes equaling or exceeding the design basis of the facilities, and demonstrated that the impacts were found to be small. Any facility constructed for Naval spent nuclear fuel management would be designed with adequate strength based on the specific seismic characteristics

of the site. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics. See also response 08.04(015).

08.04 (015) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should be ruled out because of the possibility of severe weather in the vicinity.

RESPONSE

Although the Navy's preferred alternative is not to store Naval spent nuclear fuel at Naval sites, under NEPA, the Naval Nuclear Propulsion Program is required to consider the full range of reasonable alternatives, including the alternative of taking no action. The analyses in Appendix D the EIS (See Chapter 5 and Attachment F, Section F.1) showed that the environmental impact of any of the alternatives would be small, including accidents which might be caused by natural phenomena, such as hurricanes, tsunamis, or tornados. Any facility constructed for Naval spent nuclear fuel management would be designed with adequate strength based on the specific weather characteristics of the site. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics.

08.04 (016) Proposed Action and Alternatives

COMMENT

Additional Department of Defense sites should be considered.

RESPONSE

A site selection process was followed which is described in depth in the EIS and in associated reference documents. In view of the range of types of sites analyzed in the EIS (from large populations in coastal areas to remote, desert-like, sparsely populated areas) and the conclusion that environmental impacts would be very small at all sites, extrapolation to other sites would be expected to yield similar results.

For management of Naval spent nuclear fuel, certain physical requirements, such as a rail siding or paved roadway, and administrative and support functions needed to safely handle and monitor the operations and spent fuel are needed. These administrative and support functions include physical security (since the spent fuel contains highly enriched uranium), radiological monitoring, and emergency response capability. In view of the very small impacts for the sites considered, providing these administrative and support functions and the physical facilities at a site which does not have them would produce greater impacts on the environment with no associated reductions in impact.

08.04 (018) Proposed Action and Alternatives

COMMENT

The Navy should consider some other site, either specified or not specified in the comment.

RESPONSE

For management of Naval spent nuclear fuel, certain physical requirements, as a rail siding or paved roadway, and administrative and support functions needed to safely handle and monitor the operations and spent fuel are needed. These administrative and support functions include physical security (since the spent fuel contains highly enriched uranium), radiological monitoring, and emergency response capability. In view of the very small impacts for the sites considered, providing these administrative and support functions and the physical facilities at a site which does not have them would produce greater impacts on the environment with no associated reductions in impact.

08.04 (019) Proposed Action and Alternatives

COMMENT

The Navy should consider some other site which is not specified.

RESPONSE

For management of Naval spent nuclear fuel, certain physical requirements, such as a rail siding or paved roadway, and administrative and support functions needed to safely handle and monitor the operations and spent fuel are needed. These administrative and support functions include physical security (since the spent fuel contains highly enriched uranium), radiological monitoring, and emergency response capability. In view of the small impacts for the sites considered, providing these administrative and support functions and the physical facilities at a site which does not have them would produce greater impacts on the environment with no associated reductions in impact.

08.04 (020) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should not be considered if it is judged to be a scenic area.

RESPONSE

Under NEPA, the Navy is required to consider the full range of reasonable alternatives, including the alternative of taking no action. The analysis in the EIS demonstrated that the environmental impact of any of the alternatives would be small. This analysis took into consideration the aesthetic and scenic values for each site and showed that any impacts in this category would be small. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics.

Although Naval sites are included in the analysis, the Navy has identified a preferred alternative in Section 3.9, Appendix D, Part A which would not store Naval spent nuclear fuel at Naval sites. The Navy's preferred alternative would resume the historic, technically sound and safe practice of conducting refueling and defueling of nuclear-powered warships and prototypes as planned, transporting the Naval spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination, and transferring Naval spent nuclear fuel to DOE for storage at that site.

08.04 (021) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a Navy site should not be considered if it is judged to be an environmentally sensitive area.

RESPONSE

Under NEPA, the Navy is required to consider the full range of reasonable alternatives, including the alternative of taking no action. The analysis in the EIS demonstrated that the environmental impact of any of the alternatives would be small. This analysis took into consideration possible effects on the ecology for each site and showed that any impacts in this category would be small. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics.

Although Naval sites are included in the analysis, the Navy has identified a preferred alternative in Section 3.9, Appendix D, Part A which would not store Naval spent nuclear fuel at Naval sites. The Navy's preferred alternative would resume the historic, technically sound and safe practice of conducting refueling and defueling of nuclear-powered warships and prototypes as planned, transporting the Naval spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination, and transferring Naval spent nuclear fuel to DOE for storage at that site.

08.04 (022) Proposed Action and Alternatives

COMMENT

Use of the Puget Sound Naval Shipyard Water Pit Facility will preclude the performance of aircraft carrier refuelings at Puget Sound Naval Shipyard and consequently jobs would be lost at the shipyard.

RESPONSE

The Decentralization Alternative for Naval Spent Nuclear Fuel Management includes an option which would utilize the Puget Sound Naval Shipyard Water Pit Facility for examination of high priority fuel. As stated in this Environmental Impact Statement, the use of this facility for spent nuclear fuel inspection would preclude its use for support of aircraft carrier refuelings. If the option of using the existing water

pool for fuel examination under the Decentralization Alternative were selected, it would be necessary to find other ways to support aircraft carrier refuelings. Due to the limited space available at Puget Sound Naval Shipyard, it might prove difficult to find alternate means to provide the needed support for aircraft carrier refueling at that shipyard.

Long range plans have included Puget Sound Naval Shipyard as the west coast location for conducting aircraft carrier refuelings. This was the basis for constructing the Water Pit Facility. Including the ships currently under construction, the Navy will have at least nine nuclear- powered aircraft carriers. While no near-term refuelings are scheduled for Puget Sound Naval Shipyard, it is expected that future plans and overlapping of refuelings and defuelings will require simultaneous servicing of two aircraft carriers, which might require two shipyards to perform the work. The comment presupposes that these refueling jobs exist at Puget Sound Naval Shipyard and therefore could be lost, but other variations in the shipyard staffing make this uncertain.

08.04 (023) Proposed Action and Alternatives

COMMENT

Facilities for management of Naval spent nuclear fuel should not be located at sites where weapons are handled or stored.

RESPONSE

Weapons are not handled or stored at any of the Navy sites considered in this EIS. In the case of some locations, such as the Pearl Harbor or Norfolk Naval Shipyard, other Navy facilities which handle or store weapons are in the same general vicinity, but they are separated from the sites considered by a great enough distance that the weapons would not constitute a threat to Naval spent nuclear fuel management.

Even though accidents associated with weapons are not reasonably expected to affect Naval spent nuclear fuel, the consequences of such accidents would be within the limits of other accidents not related to weapons analyzed in this EIS. Appendix D to Volume I of the EIS includes an evaluation of a broad range of hypothetical accidents which might occur as a result of human error, equipment failure, or natural phenomena, including fires involving the storage facilities and projectiles striking the storage facilities. The results of these analyses are summarized in Chapter 3, tabulated for each individual site in Chapter 5, and described in detail in Attachment F. The analyses show that the risks associated with all of the accidents are very low.

Although the Navy's preferred alternative is not to store Naval spent nuclear fuel at Naval sites, under NEPA, the Naval Nuclear Propulsion Program is required to consider the full range of reasonable

alternatives, including the alternative of taking no action. The evaluation of potential impacts on human health and the environment provided in this EIS shows that the risks associated with all of the alternatives and sites considered is very small.

08.04 (024) Proposed Action and Alternatives

COMMENT

Storage of Naval spent nuclear fuel at Puget Sound Naval Shipyard might result in the loss of the ability of the shipyard to operate efficiently.

RESPONSE

It is true that space at the Puget Sound Naval Shipyard must be managed carefully. However, as shown in Table D-1 in Appendix D to this EIS, between 33,000 and 77,000 square feet would be required for three of the four possible methods for storage of Naval spent nuclear fuel at Puget Sound Naval Shipyard, with the fourth, storage in shipping containers on railcars, requiring 260,000 square feet. Storing or examining Naval spent nuclear fuel at Naval sites is not the Navy's preferred alternative. Even so, if an alternative which would use storage at Navy sites were selected, the needed area could be provided at the shipyard without limiting its ability to carry out its mission effectively.

In Section 3.9 of Appendix D to this EIS, the Navy has clearly stated its preferred alternative for management of Naval spent nuclear fuel during the 40 year interim period and discussed how this alternative would support the Navy's mission, as established by Congress. Appendix D to Volume 1 contains an evaluation of the environmental impacts of the Navy's proposed action and all alternatives, including those which would not support the Navy's mission, in accordance with NEPA, the Council on Environmental Quality regulations, and DOE and Navy regulations.

08.04 (025) Proposed Action and Alternatives

COMMENT

Management of Naval spent nuclear fuel at a DOE site other than INEL should not be considered, because it would be necessary to construct a new facility similar to the existing Expanded Core Facility.

RESPONSE

Under NEPA, the Navy is required to consider the full range of reasonable alternatives, including alternatives which would relocate the management of Naval spent nuclear fuel to other locations. The analysis in the EIS demonstrated that the environmental impact of any of the alternatives would be small. This analysis took into consideration the potential effects of normal operations and postulated accidents

for each site and for transportation of Naval spent nuclear fuel. Therefore, the Navy did not eliminate any locations from consideration based on these characteristics.

Although sites which would require the construction of a replacement for the existing Expanded Core Facility at INEL are included in the analysis, the Navy has identified a preferred alternative in Section 3.9, Appendix D, Part A which would not examine or store Naval spent nuclear fuel at those sites. While this EIS shows that environmental impacts of constructing and operating an examination facility would be very small, the cost of constructing such a facility would exceed \$800,000,000. The Navy's preferred alternative would resume the historic, technically sound and safe practice of conducting refueling and defueling of nuclear-powered warships and prototypes as planned; transporting the Naval spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination; and transferring Naval spent nuclear fuel to DOE for storage at that site.

08.04 (026) Proposed Action and Alternatives

COMMENT

The water table at Puget Sound Naval Shipyard is just below the ground surface. Therefore, construction of a water pit facility at this location might not be possible.

RESPONSE

Construction and operation of a water pool facility at Puget Sound Naval Shipyard is feasible as demonstrated by the existing Water Pit Facility. The groundwater table is relatively close to the surface of the ground in this region and this makes building design and construction more complex, but it can be accomplished in a safe manner.

08.04 (027) Proposed Action and Alternatives

COMMENT

Management of spent fuel at Puget Sound Naval Shipyard should be ruled out because only rudimentary inspection facilities are available at the shipyard.

RESPONSE

The Decentralization Alternative for Naval Spent Nuclear Fuel Management includes an option which would utilize the Puget Sound Naval Shipyard Water Pit Facility for examination of high priority fuel. As stated by the commentor, this alternative would provide only a limited capability for examination and analysis of Naval spent nuclear fuel and, as described in the EIS, the ability to sustain further development of the advanced nuclear reactors needed to ensure the safety and performance superiority of U.S. Navy ships would be jeopardized. However, under NEPA, the Navy is required to consider the full range of reasonable alternatives, so this alternative has been included.

Although an alternative involving inspection of a limited amount of Naval spent nuclear fuel at Puget Sound Naval Shipyard is included in the analysis, the Navy identified a preferred alternative in section 3.9 of Appendix D to Volume 1 which would not involve inspection of Naval spent nuclear fuel at the shipyard. The Navy's preferred alternative would resume the historic, technically sound and safe practice of conducting refueling and defueling of nuclear-powered warships and prototypes as planned, transporting the Naval spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination, and transferring Naval spent nuclear fuel to DOE for storage at that site.

08.04 (028) Proposed Action and Alternatives

COMMENT

Any facility for management of spent nuclear fuel should be adequately designed for the purpose, but the EIS should present conclusions about the storage options that would be employed at each site.

RESPONSE

Appendix D to Volume 1 of this EIS includes in Chapters 3 and 5 and Attachments D and E detailed evaluation of methods and facilities for storage of Naval spent nuclear fuel at Navy sites under the alternatives considered. Chapters 3 and 5 and Attachment F provide detailed information on the exposures and potential health effects associated with each method of Naval spent nuclear fuel management at shipyards and Navy prototype sites, as well the effects associated with examination of Naval spent nuclear fuel at DOE sites. In all of these cases, it is assumed that the facilities used for Naval spent nuclear fuel management would be properly designed for the weather, seismic, and other conditions applicable to the particular site evaluated.

This EIS provides the information necessary to show that all three methods of storage at shipyards and Navy prototype considered (dry storage, storage in shipping containers, and storage in water pools) are practical and could be accomplished safely and with very small risks.

08.04 (029) Proposed Action and Alternatives

COMMENT

Commentors express a preference for alternatives that do not result in additional nuclear waste or spent nuclear fuel being managed in Hawaii. In addition, commentors express one or more of the following opinions:

- That such material be stored in areas of low population, as opposed to areas of high population

-
- That better sites are available that present less risk
 - That there is a risk to water resources, fragile ecosystems, or the environment

RESPONSE

See responses to comments 08.01 (001) and 08.01 (004).

8.5 Technical Issues

8.5.1 Amount and Characteristics of Navy Fuel

08.05.01 (001) Amount and Characteristics of Navy Fuel

COMMENT

The Navy will be contributing a large proportion of the future spent nuclear fuel that must be managed by DOE.

RESPONSE

As stated in the Summary and other sections of Volume I of this EIS, spent nuclear fuel representing approximately 100 metric tons of heavy metal (MTHM) will be added over the next 40 years to the amount currently being managed by DOE. Of this total, approximately 55 MTHM will be produced by the Naval Nuclear Propulsion Program. Since DOE currently manages approximately 2700 MTHM of spent nuclear fuel, including about 10 MTHM of Naval spent nuclear fuel, the Naval spent nuclear fuel at the end of the period evaluated in this EIS would be 65 MTHM, which is approximately 2% of the total of 2800 MTHM considered.

08.05.01 (002) Amount and Characteristics of Navy Fuel

COMMENT

The unique nature of Navy fuel is secret and poses a greater threat than conventional fuel.

RESPONSE

The statement that Naval spent nuclear fuel presents a significantly greater environmental threat than other conventional reactor fuel is incorrect and without technical basis.

Sections 2.2, 3.7, A.7, B.2, and F.1 of Appendix D to Volume 1 of this EIS present information on the integrity of Navy fuel. Further details on the nature of Naval spent nuclear fuel which can be used to evaluate the environmental impact associated with its management are provided in Attachments A and F to Appendix D. Although the detailed design of Navy fuel is classified, this EIS contains significant information concerning its performance characteristics.

These design requirements for Navy fuel include:

- a. **Battle shock.** Navy fuel is designed to withstand the shock encountered in a wartime battle situation without damage. These shocks are well in excess of the seismic shocks for which other reactor fuels are designed. As an example, Navy fuel can withstand shocks much greater than 50g, or 50 times the acceleration due to gravity. Civilian reactors are designed only to withstand the shock of an earthquake which is typically less than 1g.
- b. **Long life.** Navy fuel is designed to operate in a high temperature and high pressure environment for many years. Current designs are capable of over 20 years of successful operation. Typical civilian reactor fuel is designed to operate for only a few years.
- c. **Total containment of fission products.** Navy fuel is designed to operate throughout its lifetime without any release of fission products. This is essential to minimize radiation exposure to the crew who live inside the confined space of a submarine for many months at a time. Some civilian reactor fuels are designed to operate with releases of fission products and Nuclear Regulatory Commission requirements for civilian fuel allow for a primary coolant radioactivity level equivalent to about 0.1 percent fuel damage during normal operations. This results in detectable fission product activity in the reactor coolant produced from the fuel.
- d. **Rapid power transients.** Navy fuel is designed to operate successfully during rapid power transients (e.g., achieve full power in seconds) while typical civilian fuel takes many hours to achieve full power to ensure it is not damaged. The Navy requirement is based on the need to rapidly change speeds or direction of a ship, for example, to outrun a torpedo.

All of these very stringent operational requirements for Naval nuclear fuel enable it to maintain its integrity indefinitely under the far less demanding conditions encountered during transportation and storage.

08.05.01 (003) Amount and Characteristics of Navy Fuel

COMMENT

The EIS should include more details on the design and other characteristics of Naval spent nuclear fuel.

RESPONSE

Volume 1, Appendix D, sections 2.2, 3.7, A.7, B.2, and F.1 of this EIS present information on the integrity of Navy fuel. Further details on the nature of Naval spent nuclear fuel which can be used to evaluate the environmental impact associated with its management are provided in Appendix D,

Attachments A and F. Although the detailed design of Navy fuel is classified, this EIS contains significant information concerning its performance characteristics.

These design requirements for Navy fuel include:

- a. **Battle shock.** Navy fuel is designed to withstand the shock encountered in a wartime battle situation without damage. These shocks are well in excess of the seismic shocks for which other reactor fuels are designed. As an example, Navy fuel can withstand shocks much greater than 50g, or 50 times the acceleration due to gravity. Civilian reactors are designed only to withstand the shock of an earthquake which is typically less than 1g.
- b. **Long life.** Navy fuel is designed to operate in a high temperature and high pressure environment for many years. Current designs are capable of over 20 years of successful operation. Typical civilian reactor fuel is designed to operate for only a few years.
- c. **Total containment of fission products.** Navy fuel is designed to operate throughout its lifetime without any release of fission products. This is essential to minimize radiation exposure to the crew who live inside the confined space of a submarine for many months at a time. Some civilian reactor fuels are designed to operate with releases of fission products and Nuclear Regulatory Commission requirements for civilian fuel allow for a primary coolant radioactivity level equivalent to about 0.1% fuel damage during normal operations. This results in detectable fission product activity in the reactor coolant produced from the fuel.
- d. **Rapid power transients.** Navy fuel is designed to operate successfully during rapid power transients (e.g. achieve full power in seconds) while typical civilian fuel takes many hours to achieve full power to ensure it is not damaged. The Navy requirement is based on the need to rapidly change speeds or direction of a ship -- for example, to outrun a torpedo.

All of these very stringent operational requirements for Naval nuclear fuel enable it to maintain its integrity indefinitely under the far less demanding conditions encountered during transportation and storage.

08.05.01 (004) Amount and Characteristics of Navy Fuel

COMMENT

Naval spent nuclear fuel may be unsuitable for a geologic repository and expensive processing facilities may be needed to prepare it for ultimate disposal.

RESPONSE

Since Naval spent nuclear fuel is very stable and has high structural integrity, it well suited for disposal into a geologic repository without processing or destructive disassembly. Under the currently foreseeable criteria for accepting spent nuclear fuel for disposal in a geologic repository, Naval spent nuclear fuel modules could likely be placed intact into the containers to be used for disposal. Once placed in a geologic repository, the corrosion-resistant characteristics of the Naval spent nuclear fuel would keep it in a stable form which would preclude achieving a critical configuration for a period well in excess of 10,000 years, the period specified for analysis in the Nuclear Waste Policy Act, as amended.

A discussion of the integrity of Navy fuel is presented in Section 2.2 of Appendix D to Volume 1 of this EIS. Further details on the nature of Naval spent nuclear fuel which can be used to evaluate the environmental impact associated with its management are provided in Attachment F to Appendix D. The very stringent requirements for Naval nuclear fuel to operate at high temperatures, high pressures, and resist corrosion in very hot water cause it to be more than adequate to endure the conditions which might be encountered after emplacement in a geologic repository.

Finally, it should be noted that this EIS evaluates safe management of spent nuclear fuel for 40 years, including processing where required to stabilize the fuel for safe storage. No processing of Naval spent nuclear fuel is required for that purpose. In the unlikely event that waste acceptance criteria to be established in the future were to require processing of Naval spent nuclear fuel to enable it to be ultimately disposed of, that would be evaluated in accordance with NEPA requirements at that time, but that matter is beyond the scope of this EIS.

08.05.01 (005) Amount and Characteristics of Navy Fuel

COMMENT

The EIS should include information on the effective power-generating life of Naval nuclear reactor.

RESPONSE

As discussed in Section 3.7.4 of Appendix D to Volume 1 of this EIS, the life of the current reactor cores used in Naval nuclear-powered vessels is greater than 20 years. The lifetime of Naval nuclear reactor cores has increased by a factor of more than ten from the 2 year lifetime of the first core installed in the first nuclear-powered submarine in the 1950's. This increase in lifetime is in large part the result of the examinations of Naval spent nuclear fuel conducted at the Expanded Core Facility over the past 37 years. This increase in core life has reduced the environmental impacts associated with operation of the nuclear navy, as described in Section 3.7.4.

A discussion of the integrity of Navy fuel is presented in Section 2.2 of Appendix D to Volume 1 of this EIS. Further details on the nature of Naval spent nuclear fuel which can be used to evaluate the environmental impact associated with its management are provided in Attachment F to Appendix D.

08.05.01 (006) Amount and Characteristics of Navy Fuel**COMMENT**

The EIS should include the criteria for determining when defueling of a Naval reactor is needed.

RESPONSE

The most important factor determining the need for refueling or defueling of any nuclear-powered warship is the mission of the Navy laid out by the Congress and President of the United States. If the mission requires a ship to continue operating beyond the end of the useful life of the core installed in the ship, the core must be replaced when it no longer is capable of producing sufficient power for ship operation. If a ship is no longer needed, the nuclear reactor fuel will be removed from the ship, even if it has not reached the end of its useful lifetime.

With the end of the Cold War and the recent changes in the mission of the armed forces, the Navy has been reducing the number of warships it has in service, including the deactivation of some nuclear-powered submarines and surface ships. Information on the recent decreases in the number of nuclear-powered Naval vessels and current plans for future reductions in the number of nuclear-powered vessels is reflected in this EIS. However, it should be emphasized that such numbers are subject to change at any time pursuant to Congressional or Presidential direction.

A discussion of the integrity of Navy fuel is presented in Section 2.2 of Appendix D to Volume 1 of this EIS. Further details on the nature of Naval spent nuclear fuel which can be used to evaluate the environmental impact associated with its management are provided in Attachment F to Appendix D. Information on the operating lifetime of current nuclear reactor cores is provided in Section 3.7.4.

08.05.01 (007) Amount and Characteristics of Navy Fuel

COMMENT

The EIS should include information on how long Naval spent nuclear fuel will remain radioactive and the amount of radioactivity in each core or module.

RESPONSE

Section F.1.4 provides detailed information on the radionuclides present in Naval spent nuclear fuel, their half-lives, and the amounts of each present. This section provides all of the data needed for analysis of a range of postulated accidents at facilities storing or examining Naval spent nuclear fuel. Section A.7.1 provides similar information on the radionuclides and amounts of each for analyses of postulated transportation accidents involving Naval spent nuclear fuel. The half-lives of these radionuclides are readily available from standard scientific publications, such as chemistry and physics textbooks. Each section includes data on the fractions of each type of radioactive material that might be released in an accident. These data provide a detailed characterization of the kinds and amounts of radioactivity associated with Naval spent nuclear fuel which is adequate to understand the nature of Naval spent nuclear fuel and to evaluate the potential environmental impacts associated with all of the alternatives considered in this EIS.

08.05.01 (008) Amount and Characteristics of Navy Fuel

COMMENT

The life expectancy of shipping containers may not be long enough to store Naval spent nuclear fuel safely for the period considered in this EIS or may be incompatible with the half-lives of the radionuclides present.

RESPONSE

Naval spent nuclear fuel shipping containers are designed to withstand the rigors of shipment and hypothetical accidents which might occur during shipping. As a result, the certified shipping containers for Naval spent nuclear fuel are rugged enough to endure the far less demanding conditions associated with storage at Navy sites. This fact is borne out by the analyses provided in Attachment F of Appendix D to Volume 1 of this EIS.

As stated in Appendix D, the only change to shipping container design is that a long-term seal would be used to replace the rubber seal in the shipping containers if an alternative utilizing the shipping containers for storage for 40 years were selected as a result of this EIS. However, the existing seal is designed to last many years and is adequate for the period until that decision is made. The current shipping container seals are designed to contain radioactive material during frequent loading and

unloading operations and during shipment, requiring it to be flexible and reusable. Design of a seal for long-term storage would be less demanding because repeated opening and closing of the container lid would not occur during storage, allowing use of such methods as welding the container shut, if necessary.

The level of detail desired by the commentor for the data analysis is not appropriate for the decision that will be made out of this programmatic document, and would not provide any information that would assist the decision-maker in making this decision. This broad environmental review document has been prepared in accordance with NEPA and implementing regulations, that allow for a broad focus on issues actually the subject of the decision. Additional, more specific data, such as the proposed by the commentor, would be provided, if necessary, in further site-specific environmental documents.

Attachment F.1.4 provides detailed information on the radionuclides present in Naval spent nuclear fuel, and the amounts of each present. This section provides all of the data needed for analysis of a range of postulated accidents at facilities storing or examining Naval spent nuclear fuel. Information on the half lives radionuclides can be obtained from standard publications such as physics or chemistry text books. Section A.7.1 provides similar information on the radionuclides and amounts of each for analyses of postulated transportation accidents involving Naval spent nuclear fuel. Each section includes data on the fractions of each type of radioactive material that might be released in an accident. These data provide a detailed characterization of the kinds and amounts of radioactivity associated with Naval spent nuclear fuel to allow understanding the nature of Naval spent nuclear fuel and to evaluate the potential environmental impacts associated with all of the alternatives considered in this EIS.

08.05.01 (009) Amount and Characteristics of Navy Fuel

COMMENT

The use of beta-quenching in the production of Naval nuclear fuel may be a defective process which could compromise the storage of Naval spent nuclear fuel.

RESPONSE

The comment is incorrect with respect to Naval nuclear fuel. It apparently refers to an article in a magazine (Mother Jones) which reported statements to the Nuclear Regulatory Commission concerning possible causes of defects in commercial nuclear fuel elements and the claims in an unrelated lawsuit. The lawsuit involved a technician who was suing his former employer over the results of a developmental process related to what metallurgists call "alpha treatment" of material containing zirconium.

The concern in the technician's lawsuit involved the results of a test related to one step of the process for manufacturing the cladding of nuclear fuel used in electrical generating plants operated by some utilities. Navy nuclear fuel material is produced by an entirely different process from that used to produce the beta-quenched zirconium fuel cladding used in commercial nuclear plants. As a result, Naval fuel material has different properties from commercial fuel. The procedure at issue in the lawsuit and the subsequent processing steps are not used in the fabrication of Naval nuclear fuel.

The Naval nuclear fuel manufacturing process is backed by extensive testing, years of operational experience, and examinations after reactor shutdown. Examinations of spent Naval nuclear fuel performed at the Expanded Core Facility at INEL on all Naval nuclear fuel after use, as well as monitoring of operating Naval nuclear fuel, have shown that there is no reason to expect failures of Naval spent nuclear fuel to occur during storage for more than 100,000 years.

8.5.2 Cultural Resources

08.05.02 (001) Cultural Resources

COMMENT

The commentor states that Native Hawaiian fishing ponds within the boundaries of Pearl Harbor Naval Shipyard might be contaminated in the event of an accident involving Naval spent nuclear fuel stored at the shipyard.

RESPONSE

Volume 1, Appendix D, section 5.1.4 of the EIS shows that there would be no impact on the Native Hawaiian fishing ponds resulting from routine Naval spent nuclear fuel storage operations at Pearl Harbor Naval Shipyard. This conclusion is supported by the fact that the handling of Naval spent nuclear fuel from Naval vessels, including refueling and defueling operations and operations very similar to those considered in this EIS, have been conducted at Pearl Harbor Naval Shipyard for almost 30 years without impact on the environment. Report NT-94-1, Environmental Monitoring and Disposal of Radioactive Wastes from U.S. Naval Nuclear Powered Ships and Their Support Facilities, Washington, DC, March 1994, provides additional information on the results of environmental monitoring for past operations.

With regard to hypothetical accidents, Volume 1, Appendix D, Chapter 5, section 5.1.4 and Volume 1, Attachment F, section F.1.3.8 provide the results of calculations of radioactive material dispersion and deposition calculations for a hypothetical airplane crash into Naval spent nuclear fuel storage containers

at Pearl Harbor Naval Shipyard, the worst-case potential accident for that site. In even this most extreme case, an area of only about 110 acres might be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission limit for exposure to the general public (100 millirem per year) might result for a person living full time on that land. This discussion does not mean that an area of such size would be made permanently unusable or inaccessible because the calculation assumes that no action is taken to clean up the radioactivity or to otherwise mitigate the effects of the accident. Radioactive contamination could and would be removed in order to minimize the affected area and impacts on access or use.

08.05.02 (002) Cultural Resources

COMMENT

Historic sites could be damaged or made inaccessible by accidents associated with Naval spent nuclear fuel.

RESPONSE

Appendix D of this EIS (See Chapter 5, Section 5.1.4.14.3, and Attachment F, Section F.1.3.8) discusses in detail the potential environmental effects in the event of a number of extremely unlikely accidents involving Naval spent nuclear fuel. It should be noted that servicing of nuclear reactors aboard Naval vessels, including refueling and defueling operations and operations very similar to those considered in this EIS, have been conducted at Navy sites for almost 40 years without impact on the environment. For example, Report NT-94-1, Environmental Monitoring and Disposal of Radioactive Wastes from U.S. Naval Nuclear Powered Ships and Their Support Facilities, Washington, D.C., March 1994, provides additional information on the results of environmental monitoring of past operations.

For the most severe of the hypothetical accidents, Volume I, Appendix D (Chapter 5, section 5.1.4, and Attachment F, section F.1.3.8) shows that in even these extreme cases an area of only about 110 to 210 acres might be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission limit for exposure to the general public (100 millirem per year) might result for a person living full time on that land. Most of this area would be within the boundaries of the DOE or Navy site, depending on the site being considered.

This discussion does not mean that an area of such size would be rendered permanently unavailable for public use since the calculation described in the preceding paragraph assumes that no action is taken to clean up the radioactivity. In reality, radioactive contamination could and would be removed in order to minimize the affected area and impacts on access. Historic Structures would not be destroyed or physically altered in the event of any of the hypothetical accidents.

08.05.02 (003) Cultural Resources

COMMENT

The commentor states that use of the land at Pearl Harbor Naval Shipyard is not compatible with the culture of Native Hawaiians and their perception of the sacred nature of the land, or "aina."

RESPONSE

As described in Volume 1, Appendix D, section 5.1.4 of this EIS, any facilities required for management of Naval spent nuclear fuel at Pearl Harbor Naval Shipyard would be constructed within the existing industrial area, and no additional land outside the shipyard would be used. Naval spent nuclear fuel management activities would be consistent with the existing activities at the shipyard; and established procedures to prevent interference with any cultural activities or artifacts of Native Hawaiians would be followed.

With regard to hypothetical accidents, Volume 1, Appendix D, Chapter 5, section 5.1.4, and Volume 1, Attachment F, section F.1.3.8 provide the results of calculations of radioactive material dispersion and deposition calculations for a hypothetical airplane crash into Naval spent nuclear fuel storage containers at Pearl Harbor Naval Shipyard, the worst case potential accident for that site. In even this most extreme case, an area of only about 110 acres might be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission limit for exposure to the general public (100 millirem per year) might result for a person living full time on that land.

This discussion does not mean that an area of such size would be made permanently unusable or inaccessible since the calculation assumes that no action is taken to clean up the radioactivity or to otherwise mitigate the effects of the accident. Radioactive contamination could and would be removed in order to minimize the affected area and impacts on access or use.

08.05.02 (004) Cultural Resources

COMMENT

Storage of Naval spent nuclear fuel at Pearl Harbor Naval Shipyard might conflict with the resolution of land claims by Native Hawaiians.

RESPONSE

The actions considered in this EIS would not affect the land claims of Native Hawaiians. Appendix D of this EIS (See Chapter 5, Section 5.1.4, and Attachment F, Section F.1.3 and F.1.4) discusses in detail the potential environmental effects associated with storage of Naval spent nuclear fuel at Pearl Harbor Naval Shipyard. It should be noted that servicing of nuclear reactors aboard Naval vessels, including refueling

and defueling operations and operations very similar to those considered in this EIS, have been conducted at Navy sites for almost 30 years at Pearl Harbor and more than 30 years at other Navy shipyards without impact on the environment. For example, Report NT-94-1, Environmental Monitoring and Disposal of Radioactive Wastes from U.S. Naval Nuclear Powered Ships and Their Support Facilities, Washington, D.C., March 1994, provides additional information on the results of environmental monitoring covering current and past operations.

For the most severe of the hypothetical accidents, Appendix D (See Chapter 5, Section 5.1.4.14.3, and Attachment F, Section F.1.3.8) shows that, in even these extreme cases, at a Naval shipyard an area of only about 110 acres might be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission limit for exposure to the general public (100 millirem per year) might result for a person living full time on that land.

This discussion does not mean that an area of such size would be rendered inaccessible or unusable since the calculation described in the preceding paragraph assumes that no action is taken to clean up the radioactivity. In reality, radioactive contamination could and would be removed in order to minimize the affected area and impacts on access. The net result of the analysis in this EIS is that the outcome of any claims by Native Hawaiians would not be altered by the alternative selected for management of Naval spent nuclear fuel.

Although the Navy's preferred alternative is not to store Naval spent nuclear fuel at Naval sites, under NEPA, the Naval Nuclear Propulsion Program is required to consider the full range of reasonable alternatives, including the alternative of taking no action. Similarly, the regulations issued by the Council on Environmental Quality (40 CFR 1502.14(c)) to implement NEPA require the consideration of alternatives which may be beyond the jurisdiction of the agency. The analyses in Appendix D the EIS (See Chapter 5 and Attachment F, Section F.1) showed that the environmental impact of any of the alternatives would be small.

8.5.3 Safety and Effects of Radiation

08.05.03 (001) Safety and Effects of Radiation

COMMENT

The analyses in the Environmental Impact Statement should consider health effects other than cancer fatalities.

RESPONSE

The analyses of the potential effects of radiation exposure in this EIS do consider health effects other than cancer fatalities and are based on the standards of the International Commission on Radiological Protection. Section F.1.3.3 of Appendix D to Volume 1 discusses the terminology and risk factors used by the International Commission on Radiological Protection and how these factors were applied in calculating the effects on human health in this EIS. In order to describe the effects of radiation exposure, the International Commission on Radiological Protection defines the term "health detriments" to include the total impact of all fatal cancers, non-fatal cancers, and genetic effects. The health detriments caused by any exposure to radiation are calculated by taking the sum of all of these effects after multiplying each effect by a weighting factor intended to represent the severity the impact of each type of effect on human health.

Cancer fatalities were used to summarize and compare the results in the EIS since this effect was viewed to be of the greatest interest to most people. The EIS states that the number of total health effects (deaths, non-fatal cancers, genetic effects, and other impacts on human health) may be obtained by multiplying the latent cancer fatalities by the factor of 1.46 developed by the International Commission on Radiological Protection.

As a result of this comment, Chapters 3 and 5 of Appendix D to Volume 1 have been revised to more clearly indicate how other health effects are to be calculated.

08.05.03 (002) Safety and Effects of Radiation**COMMENT**

The effects of radiation are not well understood.

RESPONSE

The effects of radiation have been studied extensively. There are many publications on the subject and the field of radiation health physics includes a great many professionals who have devoted their careers to this topic. As a result of the widespread efforts to understand the effects of radiation, many experts on public health believe that the effects of radiation on human health and the mechanisms involved are better understood than the effects of other chemicals present in modern daily life.

There are many variations in natural background radiation and modern lifestyles. For this reason and others, there are some differences of opinion concerning the effects of exposures to low levels of radiation and the methods which should be used to extrapolate the results of measurements to the very

low radiation exposures which would be involved in the actions considered in this EIS. However, the International Commission on Radiological Protection, whose reports and methods were used to calculate the impacts reported in this EIS, has adopted the "linear method" for producing such estimates since this is the most conservative method accepted by the scientific community. The standards used by the International Commission on Radiological Protection are kept abreast of the most up-to-date research and are modified as necessary to incorporate new results. The methods and standards used in the EIS are also consistent with the most recent studies and recommendations of the Committee on Biological Effects of Ionizing Radiation (commonly called BEIR V) and the National Academy of Sciences.

The Occupational and Public Health and Safety sections for the Navy sites in Chapter 4 of Appendix D to Volume 1 provide a description of a very comprehensive epidemiological study by researchers from Johns Hopkins University of the health of workers at the six Naval ship yards and the two private shipyards which serviced the Navy's nuclear-powered ships. This independent study evaluated a population of more than 70,000 workers over a period of approximately 25 years to determine whether there was an excess of leukemia or other cancers associated with exposure to low levels of gamma radiation. This study found no evidence to conclude that the health of the people involved in work on U. S. Naval nuclear-powered vessels had been adversely affected by exposure to low levels of radiation incidental to this work.

Some persons have proposed performing epidemiological studies of the people living in communities in the vicinity of installations performing work associated with atomic energy. However, as demonstrated by the studies which have been attempted, such as those in Great Britain, the level of radiation exposure in the communities from man-made radionuclides is very low with respect to the variations in background radiation and other factors introduced by individual lifestyles. This fact, plus other variables introduced by nature and other industries in the communities, has made it impossible to perform credible studies or develop definitive conclusions. Efforts in this area are expected to continue, but after 50 years of extensive study, the standards of the International Commission on Radiological Protection represent the most reliable data available.

Based on all of these considerations, the effects of radiation are understood well enough to provide a reasonable evaluation of the alternatives in this EIS. The standards of the International Commission on Radiological Protection have been used with the exposures for all of the alternatives evaluated in order to provide a consistent basis for comparison. However, in order to allow independent evaluation of the effects, Attachment F to Appendix D of Volume 1 provides the amounts of radioactive material which

could be released and the radiation exposures calculated for routine operations and accident conditions for each alternative.

08.05.03 (003) Safety and Effects of Radiation

COMMENT

Human health effects should receive greater consideration than such matters as jobs or costs in reaching a decision on the course of action for managing spent nuclear fuel.

RESPONSE

This EIS is devoted to analysis of all effects on human health and the environment which might result from operations or reasonably foreseeable accidents associated with DOE and Navy management of spent nuclear fuel. The details of the analyses for Naval spent nuclear fuel management are described in Attachments A and F of Appendix D to Volume I. Chapters 3 and 5 summarize the results of these analyses and the detailed results are described in the Attachments to Appendix D.

Every effort has been made to include all possible affected areas, including any identified during the public review of this EIS. It is believed that no important area of potential human health effect or environmental impact has been omitted from this EIS.

The health, safety, and welfare of citizens will be considered carefully in reaching any decision on the course of action to be used for management of spent nuclear fuel.

08.05.03 (004) Safety and Effects of Radiation

COMMENT

An independent study of the health effects on workers associated with reactor servicing at shipyards should be performed.

RESPONSE

The Occupational and Public Health and Safety sections for the Navy sites in Chapter 4 of Appendix D to Volume I provide a description of a very comprehensive epidemiological study by researchers from Johns Hopkins University of the health of workers at the six Naval shipyards and the two private shipyards which serviced the Navy's nuclear-powered ships. This independent study, published in 1991, evaluated a population of more than 70,000 workers over a period of approximately 25 years (1957 to 1981) to determine whether there was an excess of leukemia or other cancers associated with exposure to low levels of gamma radiation. This study found no evidence to conclude that the health of the people

involved in work on U. S. Naval nuclear-powered vessels had been adversely affected by exposure to low levels of radiation incidental to this work.

08.05.03 (005) Safety and Effects of Radiation

COMMENT

A comment identified that the EIS states that storage of spent nuclear fuel at Puget Sound Naval shipyard would cause less than one cancer fatality in 100,000 years and questioned whether any other industry has achieved such a safety record.

RESPONSE

The comment appears to refer to Section 5.1.1.12 of Appendix D to Volume 1 of the EIS. The specific risk values quoted in this EIS for normal operations and accidents conditions at Puget Sound Naval Shipyard may be found in Section 3.7 of Appendix D. Specifically, the EIS states that "it could be stated that one member of the population might experience a fatal cancer due to incident-free storage of Naval spent nuclear fuel at the Puget Sound Naval Shipyard if operations continued for 15,400 years." More specifically, Table 3-2 in Appendix D shows that the number of fatal cancers per year to the general population that would result from water pool storage of spent fuel at Puget would be 6.5×10^{-5} (1 cancer divided by 6.5×10^{-5} fatal cancers per year = 15,400 years).

Regarding the assessment of risks, this EIS is not intended to serve as a comparison of risks between spent nuclear fuel storage activities and other industrial activities.

The analyses presented in this EIS do show that the environmental impacts associated with any of the alternatives would be very small for both normal operations and accident conditions. All of the alternatives considered would result in radiation exposures to the public which would be well below Nuclear Regulatory Commission or Environmental Protection Agency standards and far below the normal risks of daily life.

08.05.03 (006) Safety and Effects of Radiation

COMMENT

Radiation can cause damage to materials such as concrete or metal and this should be analyzed in the EIS.

RESPONSE

The commentor is referring to the well-known phenomenon of radiation embrittlement. Embrittlement is a condition that can be caused only by intense radiation in an operating nuclear reactor. Naval spent nuclear fuel in examination or storage facilities is in a subcritical (shut down) condition. Therefore,

there is not enough neutron radiation present in spent nuclear fuel examination or storage facilities to cause embrittlement. Since the water pool structures or storage containers would not be exposed to levels of radiation comparable to operating reactors, material degradation due to radiation would not occur in the examination or storage facilities. This conclusion is borne out by almost 40 years of experience in shipping and storing Naval spent nuclear fuel.

The shipping containers used for Naval spent nuclear fuel are inspected after every shipment to assure that they are acceptable for continued use. They also receive maintenance and more detailed inspections at specified periods.

8.5.4 Socioeconomics

08.05.04 (001) Socioeconomics

COMMENT

Some persons questioned the impact on Pearl Harbor Naval Shipyard if the ability to perform nuclear reactor servicing work for warships were lost as a result of the alternatives considered in this EIS.

RESPONSE

None of the alternatives evaluated in detail in this EIS would result in Pearl Harbor Naval Shipyard losing the ability to service the nuclear reactors aboard Navy vessels. Information on the socioeconomic impacts associated with the loss of reactor servicing work was not included in this EIS for this reason.

08.05.04 (002) Socioeconomics

COMMENT

The potential impact on tourism in the vicinity of a Naval spent nuclear fuel management facility should be discussed in the EIS.

RESPONSE

Since the actual environmental impacts associated with management of Naval spent nuclear under all alternatives considered in the Environmental Impact Statement would be small, there is no reason to believe that storage or examination of Naval spent nuclear fuel at any of the locations evaluated would have any significant effect on tourism. Even the impacts of hypothetical accidents are limited in extent and small enough that there should be no impact on tourism.

Naval spent nuclear fuel has been managed at Naval shipyards, Navy prototype reactor sites, and INEL for almost 40 years, incidental to the refueling and defueling of nuclear-powered warships. This has been done with no discernible adverse effect on tourism in the vicinity of these facilities.

08.05.04 (003) Socioeconomics

COMMENT

The effects on the marketability of products produced in the vicinity of a Naval spent nuclear fuel management facility should be evaluated.

RESPONSE

Since the environmental impacts associated with management of Naval spent nuclear fuel under all alternatives considered in the EIS would be small, there is no reason to believe that the marketability of products produced in the vicinity of a Naval spent nuclear fuel management site would be affected. Even the impacts of hypothetical accidents would be small enough that there would not be any effect on the marketability of products other than temporarily.

Naval spent nuclear fuel has been managed at Naval shipyards, Navy prototype reactor sites, and INEL for almost 40 years, incidental to the refueling and defueling of nuclear-powered warships. This has been done with no discernible adverse effect on the marketability of products from the vicinity of these facilities.

08.05.04 (004) Socioeconomics

COMMENT

The effects on property values in the vicinity of a Naval spent nuclear fuel management facility should be evaluated.

RESPONSE

Since the actual environmental impacts associated with management of Naval spent nuclear under all alternatives considered in the Environmental Impact Statement would be small, there is no reason to believe that storage or examination of Naval spent nuclear fuel at any of the locations evaluated would have any effect on property values in the locality.

Changes in employment under any of the alternatives considered would be very small and would not create demand that would affect housing and property values. The largest impact on property values associated with the alternatives considered would result from the shutdown of the Expanded Core Facility at INEL.

Naval spent nuclear fuel has been managed at Naval shipyards, Navy prototype reactor sites, and INEL for almost 40 years, incidental to the refueling and defueling of nuclear-powered warships. This has been done with no discernible adverse effect on property values in the vicinity of these facilities.

08.05.04 (005) Socioeconomics

COMMENT

The effects on jobs and economic development in the vicinity of a Naval spent nuclear fuel management facility should be evaluated.

RESPONSE

The EIS does evaluate in detail the socioeconomic effects of each alternative. The results of the evaluation for management of Naval spent nuclear fuel are provided in Chapters 3 and 5 of Appendix D to Volume I. As summarized in Chapter 3 of Appendix D, changes in permanent employment range from an increase of about 10 jobs at each Navy site under the No Action alternative to a loss of 500 jobs at INEL for the alternatives which would terminate the use of the Expended Core Facility.

As shown in the Socioeconomics sections for each site in Chapter 5 of Appendix D, the magnitude of these changes with respect to the populations, regional economies, and local job markets in the vicinity of the Navy sites would be too small to impact local economic development. The largest impact on employment or the local economy associated with the alternatives considered would result from the shutdown of the Expended Core Facility at INEL.

08.05.04 (006) Socioeconomics

COMMENT

The effects of shipments of Naval spent nuclear fuel on the local infrastructure (such as streets or sewers) should be evaluated.

RESPONSE

Shipments of Naval spent nuclear fuel from the Kesselring Site use multi-wheel transporters to move the shipping containers to the nearest railroad siding, where the containers are placed on railroad cars for the rest of the trip. The many wheels on this vehicle ensure the load on each wheel of the transporter is maintained below the highway weight limits for the roads used in the movement. As a result, the loading of each wheel of the transporter is less than the wheel loading of a regular commercial truck. This is done to prevent damage to the roads or any structures beneath them. Permits which require the shipment not to exceed posted load limits are obtained from New York State, Saratoga County, and the Village of Ballston Spa.

The company which moves the Naval spent nuclear fuel shipping containers must post a bond to repair any damage created during the movement. Repairs to the infrastructure in the municipalities along the transfer route have never been required as a result of Naval spent nuclear fuel shipments over the last 37 years. If any damage to the infrastructure in Ballston Spa (such as the sewers system) should be shown to be caused by the transport of Naval spent nuclear fuel from the Kesselring Site in the future, appropriate means are available to compensate the town for repairs.

An evaluation of alternate routes was completed by the Naval Nuclear Propulsion Program in 1992. It showed that the route currently used is safe and is the best alternative available. Copies of this report were provided to local officials and placed in the Schenectady County Library.

08.05.04 (007) Socioeconomics

COMMENT

The impacts and possible mitigative measures associated with Naval spent nuclear fuel resulting from possible base closures should be evaluated in the Environmental Impact Statement.

RESPONSE

The EIS takes into account the impacts arising from base closures at Charleston Naval Shipyard and Mare Island Naval Shipyard. As of January 1995, Naval spent nuclear fuel has been removed from these shipyards under an agreement between the Secretaries of Energy and Navy and the Governor of Idaho. In addition, the EIS takes into account the most recent plans for fleet size and the increased number of defuelings and inactivations scheduled over the next decade as a result of those plans.

Since speculation on the Navy sites that might be closed would not be appropriate, a detailed discussion of how Naval spent nuclear fuel might be handled in the event of closures of bases not currently slated for closure is not included. In any event, Naval spent nuclear fuel would continue to be managed by the Federal government and all efforts would be taken to move this material to an operational site if a location storing Naval spent nuclear fuel were to be closed. Further NEPA documentation might be needed to address the effects of such an event.

8.5.5 Seismic Analyses

08.05.05 (001) Seismic Analyses

COMMENT

The effects of earthquakes or other seismic events on Naval spent nuclear fuel management facilities should be evaluated.

RESPONSE

The effects of a severe seismic event on Naval spent nuclear fuel management facilities are evaluated in the EIS. Attachment F to Appendix D of Volume I provides a discussion of the analyses performed and the public health risks which might result from a seismic event at each site where Naval spent nuclear fuel could be stored. The seismic events considered in the analyses included both an earthquake of the magnitude used as the basis for the design of the facility (design basis earthquake) and an earthquake of a magnitude which is more severe than that for which the facility must be designed (beyond design basis earthquake.)

Appendix D identifies that Naval spent nuclear fuel will retain its integrity even if an earthquake causes complete draining of a water pool that is being used for storage of Naval spent nuclear fuel. Air circulation through the fuel racks and fuel units was shown to be sufficient to prevent cladding failure and release of any fission products from the fuel in the unlikely event of complete loss of pool water. The primary consequences of the loss of pool water would be the potential for increased direct radiation and some release of corrosion products. The risks and effects of this and seismic events involving other types of Naval spent nuclear fuel storage are very small and are included in Appendix D to Volume 1.

With regard to new facilities, Volume 1, Appendix D, identifies that if the Record of Decision involves the need for new facilities for the interim storage of Naval spent nuclear fuel, detailed site-specific seismic evaluations would be conducted for those sites and the results would be incorporated into the design of new facilities. The construction of any new facilities for Naval spent nuclear fuel management would meet strict seismic standards for the interim storage of Naval spent nuclear fuel. The design and construction of these facilities to seismic standards which take into consideration the seismic character of the area would ensure that structures could withstand a major seismic event. Additional information regarding the facility design considerations for Naval spent nuclear fuel management activities is provided in Attachment D to Appendix D of Volume 1.

08.05.05 (002) Seismic Analyses

COMMENT

Discussion of a fault in the vicinity of Puget Sound Naval Shipyard (or some other site) should be added to the Environmental Impact Statement.

RESPONSE

Section 4.1.1.6.3 of Appendix D to Volume 1 provides a summary of the seismic hazards in the Puget Sound area and identifies that the Puget Sound area is prone to seismic activity. This section also

identifies that a detailed seismic evaluation would be conducted and that any facilities constructed to store Naval spent nuclear fuel would be designed to seismic criteria for that area. Since the seismicity of the area is factored into the seismic design criteria, any facility constructed to that criteria would be expected to withstand a major seismic event in that area.

The existing Puget Sound Water Pit facility was designed to the seismic design criteria for the Puget Sound area and is expected to withstand a major earthquake in this area. More specific information describing the construction of the Puget Sound Water Pit Facility is provided in Volume 1, Appendix D, Attachment D, section D.2.

Although failure of spent nuclear fuel management facilities is not anticipated, the effects of seismic failure of Naval spent nuclear fuel management facilities has been evaluated in the EIS. Volume 1, Appendix D, Attachment F provides a discussion of the analyses that were performed and the public health risks that might result from a seismic event at each site where Naval spent nuclear fuel would be stored. The seismic events considered in the analyses included both an earthquake of the magnitude used as the basis for the design of the facility (design basis earthquake) and an earthquake of a magnitude which is more severe than that for which the facility must be designed (beyond design basis earthquake.)

Appendix D identifies that Naval spent nuclear fuel will retain its integrity even if an earthquake causes complete draining of a water pool that is being used for storage of Naval spent nuclear fuel. Air circulation through the fuel racks and fuel units was shown to be sufficient to prevent cladding failure and the release of any fission products from the fuel in the unlikely event of complete loss of pool water. The primary consequences of the loss of pool water would be the potential for increased direct radiation and some release of corrosion products. The risks and effects of this and seismic events involving other types of Naval spent nuclear fuel storage are very small and are included in Volume I, Appendix D.

08.05.05 (003) Seismic Analyses

COMMENT

An up-to-date seismic analysis should be performed for any site considered for Naval spent nuclear fuel management.

RESPONSE

An up-to-date seismic evaluation was completed for the Expanded Core Facility at INEL since it is an existing facility. The seismic events considered included both an earthquake magnitude which is required as the basis for the design of the facility (design basis earthquake), and an earthquake magnitude which is more severe than that for which the facility must be designed (beyond design basis earthquake.)

Any new facilities needed for management of Naval spent nuclear fuel would be evaluated for seismic hazards. Even though design of the facilities incorporating seismic evaluation would make it unlikely that any catastrophic damage would occur as a result of the most severe earthquakes postulated, the EIS includes analyses of the effects of loss of water from the pools at the sites considered. The effects of a complete loss of pool water are reported in Attachment F to Appendix D and identify that Naval spent nuclear fuel will retain its integrity even if an earthquake causes complete draining of a water pool. Air circulation through the fuel racks and fuel units was shown to be sufficient to prevent cladding failure and the release of any fission products from the fuel in the unlikely event of complete loss of pool water. The primary consequences of the loss of pool water would be the potential for increased direct radiation and some release of corrosion products.

The risks and effects of this, and seismic events involving other types of Naval spent nuclear fuel storage at the Expanded Core Facility and at other sites, are very small and are included in Volume I, Appendix D. The construction of any new facilities for Naval spent nuclear fuel management would meet seismic standards at least as good as the current Expanded Core Facility.

Volume I, Appendix D identifies that if the Record of Decision involves the need for new facilities for the interim storage of Naval spent nuclear fuel, detailed seismic evaluations would be conducted for those sites. The construction of any new facilities for Naval spent nuclear fuel management would meet strict seismic standards for the interim storage of Naval spent nuclear fuel. The design and construction of these facilities to strict seismic standards (which take into consideration the seismic character of the area) will ensure that structures will withstand a major seismic event. Additional information regarding the facility design considerations for Naval spent nuclear fuel management activities is provided in Volume I, Appendix D, Attachment D.

08.05.05 (004) Seismic Analyses

COMMENT

A commentor felt that the discussion of hazards associated with volcanoes at the Expanded Core Facility was misleading because volcanic flows have occurred in the INEL region within the past several thousand years.

RESPONSE

Section 4.2.6 of Appendix D to Volume I states that there are no active volcanoes known to exist near the Expanded Core Facility at INEL. The probability that a volcano might cause a hazard at the Expanded Core Facility site is very low, estimated to be less than one chance in 100,000 per year.

The discussion in Section 4.2.6 of Appendix D to Volume 1 to this EIS has been revised to clarify the low probability of volcanic hazards affecting the Expanded Core Facility at INEL.

08.05.05 (005) Seismic Analyses

COMMENT

Some areas in the vicinity of Puget Sound may be susceptible to liquefaction in the event of an earthquake. If the location at Puget Sound Naval Shipyard where railcars containing spent nuclear fuel were located should liquify, the railcars could sink.

RESPONSE

The Puget Sound area is prone to seismic activity and liquefaction is a possible result of earthquakes in this area. The Puget Sound Naval Shipyard performs geotechnical evaluations whenever new facilities are constructed or as necessary to update information about the site. These studies are used as a basis for the design of facilities on the shipyard and the shipyard has taken steps in the design and operation of its facilities that would prevent or minimize any impacts should an earthquake occur.

Even if such an event were to occur, the analyses in this EIS demonstrate that the effects would be minimal. The shipping containers are watertight and would maintain their integrity even after a severe earthquake because they are designed to withstand transportation accidents which could be more severe than a seismic event. Attachments A and F of Appendix D to Volume 1 provide a discussion of the design of the spent fuel shipping containers and the results of analyses of severe accidents which might occur during the various modes of shipping container transportation and storage.

If a railcar containing a shipping container loaded with spent fuel were to tip over or settle in the ground due to liquefaction, no release of radioactive material to the environment or increase in radiation exposure to any worker or member of the public would occur since the containers are designed to withstand transportation accidents far more severe without breaching. The shipyard would initiate emergency recovery actions using the equipment available within the shipyard or from sources outside the shipyard to upright or stabilize the railcar and container as soon as practicable as part of the recovery from the event.

08.05.05 (006) Seismic Analyses

COMMENT

According to a commentor, Appendix D to Volume 1 inaccurately describes the magnitude of the Borah Peak earthquake as " 6.9 when it was actually 7.3 on the Richter Scale", and that this results in an incorrect derivation of the design basis peak ground acceleration value for the Expanded Core Facility.

RESPONSE

The comment is inaccurate. Seismologists commonly use one of three scales to describe the magnitude of an earthquake. These scales are the Richter scale, the Moment Magnitude scale, and the Surface Wave Magnitude scale. Unfortunately, seismologists have not prescribed a universal scale for describing all earthquakes and it is sometimes difficult to convert the units from one scale to another as one would convert temperature units from Fahrenheit to Celsius.

It should be noted that the Moment Magnitude scale is more widely used by seismologists as compared to the Richter scale when discussing earthquakes. The Moment Magnitude scale reflects the energy released at the source. The Richter scale is the measure of the local ground motion in the 1 to 5 Hz range and is satisfactory up to a magnitude of 6.5. Seismographs saturate at magnitudes exceeding 6.5 so the news media typically quote the Surface Wave magnitude of the event and call it the Richter Scale. The Surface Wave magnitude is a measure of the ground motion in the 0.05 Hz range and is measured at large distances from the epicenter. The Surface Wave Magnitude scale is also commonly used by some seismologists to describe earthquakes at INEL.

Section B.5.2 of Appendix D to Volume 1 states that the 0.24g peak ground acceleration is "derived on the basis that a moment magnitude 6.9 seismic event centered near Howe on the Lemhi Fault would cause a rupture of approximately 34 kilometers along the Lemhi Fault. The Howe epicenter is the epicenter located closest to the Expanded Core Facility, and 6.9 was the moment magnitude of the Borah Peak earthquake in 1983". The seismologist who evaluated the seismic hazard for the Expanded Core Facility at INEL used the Moment Magnitude scale, and not the Richter scale, to describe the magnitude of the Borah Peak earthquake and to derive the peak ground acceleration for the Expanded Core Facility. The Borah Peak earthquake was also measured at 7.3 on the Surface Wave Magnitude scale, as identified by the seismologist who evaluated the Expanded Core Facility. Some other studies of the Borah Peak earthquake, such as that described in the Special Isotope Separator EIS, have cited the magnitude of the Borah Peak earthquake as 7.3 on the Richter scale (on page 3-15 and in Table 3-2 on page 3-17 of that EIS). These are all references to the same magnitude earthquake; they are merely reported on different scales.

08.05.05 (007) Seismic Analyses

COMMENT

There may be greater than minimal likelihood of a tsunami in the vicinity of Puget Sound Naval Shipyard due to the possibility of large earthquakes beneath Puget Sound.

RESPONSE

The containers which would be used for dry storage are designed to withstand water immersion under severe accident conditions and no deleterious effects would be expected from submersion of a container by a tsunami.

Storage of Naval spent nuclear fuel in water pools at Navy sites is also considered in this EIS. The Naval spent nuclear fuel in water pools would normally be under water and the effects on the environment due to flooding by a tsunami would be primarily limited to exchanging some pool water bearing radioactive corrosion products with the flood waters. Such a release would not be expected to occur except for the most severe tsunamis which raised the level of the waters of Puget Sound many feet. If that did occur, Attachment F to Appendix D of Volume 1 provides analyses of the effects of water pool water being released under accident conditions. The results of these analyses represent an upper limit on the effects of releases possible during a tsunami sufficiently severe to flood a water pool containing Naval spent nuclear fuel.

Chapter 4 of Appendix D to Volume 1 has been changed to clarify that a tsunami could be caused in the manner described.

08.05.05 (008) Seismic Analyses**COMMENT**

Additional information pertaining to seismicity near some Navy sites should be added to the EIS or the information in the EIS does not reflect the latest geotechnical studies.

RESPONSE

Chapter 4 of Appendix D to Volume 1 contains sections which describe possible seismic hazards at each Navy site, provide general background information regarding the seismicity at these sites, and provide references where more detailed information can be obtained. In addition, the current Uniform Building Code (UBC) seismic classification for each site is provided as a means for comparing the potential for seismic hazards among sites.

The effects of seismic failure of Naval spent nuclear fuel management facilities have been evaluated in this EIS. Chapter 5 and Attachment F of Appendix D to Volume 1 provide summary and detailed discussions of the analyses that were performed and the public health risks that might result from a seismic event at each site where Naval spent nuclear fuel would be stored. The seismic events considered in the analyses included both an earthquake of the magnitude used as the basis for the design of the facility (design basis earthquake) and an earthquake of a magnitude which is more severe than that for

which the facility must be designed (beyond design basis earthquake.) These analyses show that the risks associated with seismic events involving Naval spent nuclear fuel are very small for all of the alternatives and sites considered.

The EIS states that if the Record of Decision identifies a particular site for interim storage of Naval spent nuclear fuel, a detailed seismic evaluation would be conducted. This evaluation would consider the latest geotechnical information available at the time. The EIS has been revised to eliminate the reference to seismic risk zoning promulgated by the U.S. Coast and Geodetic Survey at the Kesselring Site.

08.05.05 (009) Seismic Analyses

COMMENT

According to a commentor, seismic events up to magnitude 9 might occur in the vicinity of Puget Sound Naval Shipyard.

RESPONSE

There has recently been speculation by some that earthquakes in the Puget Sound area might produce magnitudes as high as 8.2 to 8.8. On the other hand, some seismologists believe that earthquakes with magnitudes exceeding 7 are unlikely in this region. There is also some disagreement on the nature of the fault movements that might occur in this area.

Although failure of spent nuclear fuel management facilities during seismic events within the design criteria is not anticipated, the effects of seismic failure of Naval spent nuclear fuel management facilities have been evaluated in this EIS. Chapter 5 and Attachment F of Appendix D to Volume 1 provide summary and detailed discussions of the analyses that were performed and the public health risks that might result from a seismic event at each site where Naval spent nuclear fuel would be stored. The seismic events considered in the analyses included both an earthquake of the magnitude used as the basis for the design of the facility (design basis earthquake) and an earthquake of a magnitude which is more severe than that for which the facility must be designed (beyond design basis earthquake.) These analyses show that the risks associated with seismic events involving Naval spent nuclear fuel are very small for all of the alternatives and sites considered.

This EIS states that if an alternative making use of Navy sites for storage of Naval spent nuclear fuel were to be selected a detailed seismic evaluation would be conducted. This evaluation would consider the latest geotechnical information available at the time. The EIS has been revised to clarify the range of earthquake magnitudes identified for the Puget Sound area.

08.05.05 (010) Seismic Analyses

COMMENT

There are significant differences in interpretations of ground motions at INEL and the design acceleration level of the fuel racks is not identified.

RESPONSE

Section F.1.4.2.1.1.3 of Appendix D to Volume 1 of this EIS states that the ground acceleration used to evaluate the stability of the Expanded Core Facility water pool and fuel racks in a design basis seismic event is 0.24g.

Section F.1.4.2.1.1.3 of Appendix D to Volume 1 summarizes the bases used by expert seismologists to determine the 0.24g peak ground acceleration for the Expanded Core Facility. The considerations and techniques involved are described in more detail in the reference provided in Section F.1.4.2.1.1.3. The facilities on INEL are many miles apart. As a result, the distance between a fault epicenter, such as the Lemhi fault epicenter at Howe, and each facility at INEL differs by a number of miles. Since the ground motion produced by an earthquake decreases as the distance from the epicenter increases, the same magnitude earthquake at the epicenter (for example, a moment magnitude 6.9 quake) will produce different peak ground accelerations at the different facilities.

The references to Appendices B and D to Volume 1 provide more detailed discussions of the geotechnical conditions in the vicinity of INEL and the various facilities at this large site.

08.05.05 (011) Seismic Analyses

COMMENT

The EIS should provide seismic analyses documenting that the superstructure of the Expanded Core Facility has the ability to sustain design basis earthquake and accident scenarios.

RESPONSE

An up-to-date seismic evaluation was completed for the Expanded Core Facility at INEL based on the 1994 Natural Phenomena Hazard Report referenced in Section F.1.4.2.1.3 of Appendix D to Volume 1. The analysis concluded that neither the superstructure nor the cranes would collapse, even though some members of the superstructure would experience some localized damage.

The seismic analyses included both an 0.24g magnitude earthquake and an 0.40g magnitude earthquake which is more severe than that for which the facility has been designed (beyond design basis earthquake). The seismic evaluation is discussed in Section F.1.4.2.1.1 of Appendix D to Volume 1.

The seismic analysis also evaluated the water pools. Based on the evaluation of the Expended Core Facility, damage to Naval spent nuclear fuel is not expected. Section F.1.4.2.1.1 of Appendix D to Volume 1 provides the results of analyses for loss of water from the water pools at the Expended Core Facility, even though an earthquake is not expected to produce such an accident. In addition, Section F.1.4.2.1.3 of Appendix D to Volume 1 provides the results of analyses for a crane load failure. These analyses show that the risks associated with such postulated accidents would be small.

8.5.6 Analyses of Normal Operations and Accidents

08.05.06 (001) Analyses of Normal Operations and Accidents

COMMENT

The number of fatal cancers to the general population per year shown in Table 3-2 of Appendix D to Volume 1 should be multiplied by the number of people in the population to obtain the risks associated with Naval spent nuclear fuel management.

RESPONSE

The comment is incorrect, apparently resulting from a misreading of the information provided in the EIS. Table 3-2 of Appendix D to Volume 1 provides the total risk to the entire population for each alternative considered. The values in Table 3-2 should not be multiplied by the number of people in the population since the number of people affected has already been included in the calculation of the numbers shown in the table. An explanation of how risk is calculated is provided in Section F.1.3.10 of Appendix D to Volume 1.

The estimates of risk to the entire population from normal operations in Table 3-2 were obtained from the results of detailed analyses provided in Attachment F to Appendix D. The analysis in Attachment F was performed by calculating the total number of fatal cancers that might occur in the total population within a 50 mile radius of each site evaluated for management of Naval spent nuclear fuel. The details of the analyses for the Navy sites and for the Oak Ridge Reservation and the Nevada Test Site are provided in Section F.1.4.1, including the amounts of radioactivity which might be released to the environment for each alternative considered and the number of people within 50 miles of each site.

08.05.06 (002) Analyses of Normal Operations and Accidents

COMMENT

Population data for a large area surrounding sites considered should be used in the analyses.

RESPONSE

The EIS used population data from the 1990 Census for an area within 50 miles of each site for evaluation of the potential environmental impact to the general population. (Distributions for Navy sites are shown in Appendix D, Chapter 4, and those for DOE sites considered are in the Volume 1 Appendices for each site.) Combining this population data with radiological exposures in the 50 mile radius region yielded the collective person-rem for all of the people in the region. These results were then converted to latent cancer fatalities using correlations developed by the International Commission on Radiological Protection. These correlations are consistent with the most recent studies and recommendations of the Committee on Biological Effects of Ionizing Radiation (commonly called BEIR V).

The area within 50 miles of each site encompasses all of the people who might be affected by radiological exposure associated with the alternatives for spent nuclear fuel management. As an illustration of this, the analytical results for the most severe hypothetical Naval spent nuclear fuel accidents under all alternatives, provided in the Facility and Transportation Accidents sections of Chapter 5, show that the maximum area which might be contaminated with radioactivity to a level which would cause a person living there for 24 hours a day to exceed the Nuclear Regulatory Commission's limit to the general public of 100 millirem per year would be less than about 210 acres for all cases.

08.05.06 (003) Analyses of Normal Operations and Accidents

COMMENT

Information on the radionuclides present in Naval spent nuclear fuel and the amounts of each should be provided in the Environmental Impact Statement.

RESPONSE

Appendix D to Volume 1 provides, in Attachments A and F, a list of radionuclides in Naval spent nuclear fuel and the exposure to human beings and lists the quantity of each nuclide involved. This information is provided for both normal operations and accidents.

08.05.06 (004) Analyses of Normal Operations and Accidents

COMMENT

All pathways for exposure to human beings to radiation or radioactive material and all effects of such exposure should be included in the analyses of the impacts of normal operations and postulated accidents.

RESPONSE

The EIS includes an evaluation of all significant pathways by which radiation or radioactive materials can impact human health. These pathways include direct radiation from the spent nuclear fuel facility, direct exposure from immersion in airborne radioactive material, direct exposure from radioactive material deposited on the ground, internal exposure from inhalation of radioactive materials, internal exposure from ingestion of radioactive materials (both from food and drinking water), and direct exposure from the surface of or immersion in contaminated water. The pathways used in the analyses for

Naval spent nuclear fuel are described in Attachments A and F of Appendix D to Volume 1 of the EIS. Both latent fatal cancers and other health effects are discussed.

08.05.06 (005) Analyses of Normal Operations and Accidents

COMMENT

Some commentors were concerned that an accident involving Naval spent nuclear fuel at a Navy site would have disastrous consequences for a region.

RESPONSE

Appendix D to Volume I of the EIS includes an evaluation of a broad range of hypothetical accidents which might occur as a result of human error, equipment failure, or natural phenomena, such as earthquakes or tornadoes. The results of these analyses, which are summarized in Chapter 3, provided for each site in Chapter 5, and described in detail in Attachments A and F, show that the risks associated with all of the accidents are very low.

The risks are very low even though the analyses included many conservatisms. For example, the analysis of an airplane crash into a container used to store Naval spent nuclear fuel assumed that the crash would cause the container to be breached even though evaluation had shown that no part of an airplane could penetrate the container. The analyses used meteorological conditions (such as wind dispersion and speed) which have only one chance in twenty of actually occurring, but no credit was taken for the fact that they are worse than the actual conditions 95 percent of the time. Further, the analysis of the consequences also assumed that no evacuation of people in nearby residential areas or other mitigative measures were used to reduce the effects. As a result of these conservatisms, it is expected that the actual impacts of these accidents would be 10 to 100 times less than calculated.

Even when the low probability of these accidents is not considered, the consequences without mitigative measures or planned emergency response would not be so extreme as feared by the commentors. The

principal reason for this is that Naval nuclear fuel is designed to withstand the conditions encountered in combat and therefore is rugged enough to resist or minimize damage in even the most severe accidents. In addition to the rugged nature of Naval spent nuclear fuel by itself, the containment provided by the facilities and transport containers, the precautions and procedures applied to this work, and the existing emergency response capabilities of the Navy sites and the surrounding regions make it highly likely that the actual consequences would be much less than calculated.

As described in Attachments A and F of Appendix D to Volume 1 of the EIS, all significant pathways by which radiation or radioactive materials released by these accidents could impact human health have been included. Attachments A and F of Appendix D to Volume 1 of the EIS provide all of the information used to calculate the effects of accidents involving Naval spent nuclear fuel so that an independent analyst could use these data to perform calculations to confirm the accuracy of the conclusion that such accidents would not be as disastrous as some persons feared.

08.05.06 (006) Analyses of Normal Operations and Accidents

COMMENT

The potential health effects of exposure to radiation or radioactive material as a result of normal operations or postulated accidents involving Naval spent nuclear fuel and all effects of such exposure should be included in the EIS.

RESPONSE

The EIS includes an evaluation of the exposure and potential health effects associated with Naval spent nuclear fuel management at all of the sites considered. These analyses include all possible pathways, such as direct radiation from the spent nuclear fuel facility, direct exposure from immersion in airborne radioactive material, direct exposure from radioactive material deposited on the ground, internal exposure from inhalation of radioactive materials, internal exposure from ingestion of radioactive materials (both from food and drinking water), and direct exposure from the surface of or immersion in contaminated water. The analyses performed for Naval spent nuclear fuel management alternatives and their results are described in Attachments A and F of Appendix D to Volume 1 of the EIS. Both latent fatal cancers and other health effects are discussed.

08.05.06 (007) Analyses of Normal Operations and Accidents

COMMENT

The accident analyses in the EIS for Naval spent nuclear fuel storage facilities should include fires or explosions on Naval vessels at shipyards as initiating events.

RESPONSE

Appendix D to Volume 1 of the EIS includes an evaluation of a broad range of hypothetical accidents which might occur as a result of human error, equipment failure, or natural phenomena, such as earthquakes or tornadoes. These analyses included fires involving the storage facilities and projectiles striking the storage facilities. The results of these analyses are summarized in Chapter 3, tabulated for each individual site in Chapter 5, and described in detail in Attachment F. The analyses show that the risks associated with all of the accidents are very low.

Section F.1.2 describes the procedure used to select accidents for detailed analysis. The evaluation of possible accidents concluded that accidents initiated at nearby locations, such as those on Naval vessels at shipyards, would not produce more severe effects than the accidents chosen for detailed analysis and are therefore not specifically evaluated. The accidents selected included a hypothetical crash of a large passenger or cargo aircraft directly on to the fuel storage areas, crashes which would involve both fire and high energy projectiles, so the effects of such an event would likely far outweigh the effects of an explosion on a vessel.

The consequences of Naval spent nuclear fuel storage facilities being struck by projectiles from weapons have been specifically considered. This evaluation was performed as part of the analysis of possible terrorist or military attack. The effects of such an attack have been determined to be less than the limiting accidents analyzed in the EIS, specifically the crash of a large jet or an earthquake (See Appendix D, Attachment F, Section F.1.2). Attacks using anti-tank weapons or other specialized weapons, as well as conventional explosives, were evaluated.

The reasons that the effects of a projectile from an anti-tank weapon striking one of the storage containers would be less severe than the accidents analyzed are: (a) anti-tank weapons would be likely to cause a self-sealing penetration in the metal of a container, unlike that which is assumed from the airplane crash (impact from a 50 inch diameter engine rotor); (b) there is no explosive material inside the container, so it will not "blow up" as a tank would if hit by such a weapon (in an attack on a tank, the artillery shells inside the turret detonate from the energy injected into the turret by the anti-tank shell); (c) there would be no fire to disperse the radioactivity that is released when the container is breached, unlike an aircraft crash where the jet fuel might pool, ignite, and create such a fire. The rugged design of

containers and the thick walls of water pools, combined with the shock-absorbing nature of water with a free surface, reduce the effects of other types of explosive charges.

Attachment F of Appendix D of the EIS has been modified to better describe this analysis.

08.05.06 (008) Analyses of Normal Operations and Accidents

COMMENT

The analyses of normal operations and hypothetical accidents should include calculation of the exposure to the maximum exposed individual for transportation and for each site for each alternative.

RESPONSE

The EIS does provide an estimate of the exposure for a maximum exposed individual for normal operations and postulated accidents for fixed sites and transportation under all alternatives. Attachments A and F of Appendix D to Volume I provide the results of calculations of the potential exposure to the maximum exposed individual for shipments and facilities for all alternatives, as well as the potential exposure to workers, to a person at the point of nearest public access, and to the population in the vicinity. Sections A.8.2, A.8.3, and A.8.4 in Attachment A provide the detailed results for routine operations and accidents during transportation and Sections F.1.4.1 and F.1.4.2 in Attachment F provide detailed results for normal operations and accidents for each site considered. The results tabulated in these sections show that the risks to the maximum exposed individuals would be very small under all of the alternatives considered.

08.05.06 (009) Analyses of Normal Operations and Accidents

COMMENT

The risks and costs associated with the period of transition to a new alternative for the management of Naval spent nuclear fuel should be analyzed.

RESPONSE

Section 3.8 of Appendix D to Volume I of this EIS states that most of the alternatives would require a period of implementation while facilities were constructed and equipment was procured. Existing facilities and equipment would be employed to manage Naval spent nuclear fuel during the transition. Naval spent nuclear fuel would be transported to the Expanded Core Facility at INEL during the transition should an alternative be selected requiring construction of a new examination facility or procurement of additional shipping containers for dry storage at Navy sites. Given this use of facilities and transportation routes that are included in alternatives such as the 1992/1993 Planning Basis, the impacts per year during the transition would be the same as given for those alternatives. The potential

environmental impacts of actions that would be taken to manage Naval spent nuclear fuel during a transition period are therefore included in the EIS and all extremely small.

08.05.06 (010) Analyses of Normal Operations and Accidents

COMMENT

The airplane crash accident analyses in the EIS for Naval spent nuclear fuel storage at Pearl Harbor should include accidents involving shipping containers stored on railcars.

RESPONSE

Analyses of an aircraft crash into shipping containers stored on railcars at Pearl Harbor Naval Shipyard were not included in this EIS because shipping containers are not stored on railcars at Pearl Harbor, but on concrete pads. Ship rather than rail transport is used to move Naval spent nuclear fuel to Puget Sound Naval Shipyard. Attachment F (including Table F.3-6) to Appendix D of Volume 1 includes analyses of the accidents which might occur for storage of Naval spent nuclear fuel on concrete pads at Pearl Harbor Naval Shipyard.

If an analysis were included for containers stored on railcars, the only difference in the result would be due to a slight increase in the probability an airplane might crash into a container. This is because the target area for an array of containers on railcars would be greater than the target area for an array of the same number of containers on a concrete pad. The dependence of crash probabilities on target area is described in Section F.3 of Appendix D to Volume 1. The difference in target areas is listed in Table D-I in Appendix D.

08.05.06 (011) Analyses of Normal Operations and Accidents

COMMENT

The risks associated with "dry storage" at shipyards and prototype locations should be analyzed in this EIS.

RESPONSE

Appendix D to Volume 1 of this EIS includes, in Chapters 3 and 5 and Attachments A and F, detailed evaluation of the possible exposures and potential health effects associated with Naval spent nuclear fuel management at shipyards and Navy prototype sites. These analyses include risks for transportation and facility accidents for these alternatives, as well as for all other alternatives considered, and showed that the risks from any alternative would be very small. Transportation of Naval spent nuclear fuel for the alternative involving the largest number of shipments was shown to produce less than one additional fatality for the entire 40 year period considered. Under the Decentralization alternative, three methods of

storage at shipyards and Navy prototype reactor locations are considered: dry storage, storage in shipping containers, and storage in water pools. The risks associated with dry storage are specifically discussed in this EIS.

This EIS shows that the risk associated with the transportation of Naval spent nuclear fuel or the risks associated with storage at any location would be so small for all the alternatives considered that they do not provide a basis for choosing among the alternatives.

08.05.06 (012) Analyses of Normal Operations and Accidents

COMMENT

The risks associated with ships carrying Naval spent nuclear fuel to the Mainland should be analyzed in this EIS.

RESPONSE

Appendix D to Volume 1 of this EIS includes, in Chapters 3 and 5 and Attachments A and F, detailed evaluation of the possible exposures and potential health effects associated with the shipment of Naval spent nuclear fuel from the Pearl Harbor Naval Shipyard in Hawaii to Puget Sound Naval Shipyard. This is the only movement of Naval spent nuclear fuel by ship and the only shipping route which makes use of the Strait of Juan de Fuca and the upper portions of Puget Sound to the Puget Sound Naval Shipyard in Bremerton. No Naval spent nuclear fuel is shipped to the ports of Seattle or Tacoma.

The analyses reported in Appendix D include risks for normal operations and postulated accidents for these alternatives, as well as for all other alternatives considered, and showed that the risks from any alternative would be very small. All transportation of Naval spent nuclear fuel for the alternative involving the largest number of shipments was shown to produce less than one additional fatality for the entire 40 year period considered. Under all alternatives but those which do not allow Naval spent nuclear fuel to leave Pearl Harbor, a few shipments (fewer than 25) from Pearl Harbor to Puget Sound Naval Shipyard would be made.

This EIS shows that the risk associated with the transportation of Naval spent nuclear fuel or the risks associated with storage at any location would be so small for all the alternatives considered that they do not provide a basis for choosing among the alternatives. An analysis for a postulated accident which would result in a serious fire aboard the vessel carrying Naval spent nuclear fuel in certified shipping containers has been added to this EIS.

08.05.06 (013) Analyses of Normal Operations and Accidents

COMMENT

Evaluation of a criticality event could be hampered because no references for ruthenium and cesium release fractions were found.

RESPONSE

The cesium release fraction used is taken from the Nuclear Regulatory Commission's Regulatory Guide 3.34, as stated in section F.1.4.2.1.2.1 of Appendix D to Volume I.

The Nuclear Regulatory Commission's Regulatory Guide 3.34 does not include a release fraction for ruthenium. However, ruthenium was added to the postulated releases in order to provide complete analyses consistent with those reported for other facilities in this EIS. The ruthenium release fraction used was obtained from a technical report prepared by Los Alamos National Laboratory. This document, A Guide to Radiological Accident Considerations for Siting and Design of DOE Nonreactor Nuclear Facilities, LA-10294-MS, issued January 1986, was inadvertently omitted from the list of references in the Draft EIS and has been added to the list of references in Attachment F of Appendix D to Volume I.

08.05.06 (014) Analyses of Normal Operations and Accidents

COMMENT

The loss of jobs in Southeastern Idaho should be considered in selecting an alternative for management of Naval spent nuclear fuel.

RESPONSE

Appendix D to Volume 1 includes information on the socioeconomic impacts, such as increases or decreases in employment at Naval spent nuclear fuel management facilities, for each alternative considered. The data on socioeconomic impacts are summarized in Table 3-7 and Section 3.7 of Appendix D. The analysis summarized in Table 3-7 shows that selection of an alternative which ended the current practice of shipping Naval spent nuclear fuel to the Expanded Core Facility at INEL would result in the loss of approximately 500 jobs in Southeastern Idaho.

08.05.06 (015) Analyses of Normal Operations and Accidents

COMMENT

One commentor stated that the EIS should include uncertainties on the estimates of aircraft crash probabilities and of the resulting number of latent cancer fatalities.

RESPONSE

The analyses performed for airplane crashes contain a large number of conservative assumptions which result in a worst case or bounding analysis which is intended to produce results which would not be exceeded even if all uncertainties were at the most unfavorable limit of their ranges. Section F.1.4.2.2.2 of Appendix D to Volume I provides a description of the analysis of an airplane crash.

The risks are very low even though the analyses included many conservatisms. For example, the analysis of an airplane crash into a container used to store Naval spent nuclear fuel assumed that the crash would cause the container to be breached even though evaluation had shown that no part of an airplane could penetrate the container. The analyses used meteorological conditions (such as wind dispersion and speed) which have only one chance in twenty of actually occurring, but no credit was taken for the fact that they are worse than the actual conditions 95% of the time. Further, the analysis of the consequences also assumed that no evacuation of people in nearby residential areas or other mitigative measures were used to reduce the effects. As a result of these conservatisms, it is expected that the actual impacts of these accidents would be 10 to 100 times less than calculated.

The conservative assumptions discussed above result in analysis results which are much greater than those which would be expected should the accident actually occur. The exposures and latent cancer fatalities which have been calculated and reported in this EIS for a hypothetical airplane crash are ten to one hundred times higher than those which would result from a more realistic, best-estimate analysis. Put another way, a more realistic analysis would calculate risks which are 10 to 100 times less than those contained in the EIS.

08.05.06 (016) Analyses of Normal Operations and Accidents

COMMENT

One commentor stated that the formula for the effective crash area on page F-228 appears to be inconsistent with the description in the text and that the area calculated using this formula would be infinite for a crash attitude angle of zero.

RESPONSE

The formula for the effective crash area given in section F.3.2 is valid only for crash angles of descent greater than zero degrees. This is not a problem with the use of the equation because an airplane would have to be flying along parallel to the ground at an altitude equal to or greater than the height of the "target" for the angle to be zero. In such a case, the airplane would clear the object and there would be no crash.

The term in question which contains the cotangent of the angle of the aircraft's descent ($\cot \phi$) represents the effective shadow area. The effective shadow area is the area of the projection of the target elevation on the horizontal plane behind the target. The formula for the effective shadow area is:

$$A_{\text{shallow}} = (L + A_w) \cdot H \cdot \cot \phi$$

As can be seen, as the angle of descent (ϕ) decreases, shadow area increases. For the limiting case where ϕ goes to zero, the aircraft clears the top of the target; hence, the effective shallow area projection does not apply. For the EIS, a value of 15 degrees is used for ϕ , based on the recommended value in the Sandia 1983 reference.

Section F.3.2 will be revised to note that the angle of descent during a crash (ϕ) must be greater than zero for the effective crash area formula to be valid.

08.05.06 (017) Analyses of Normal Operations and Accidents

COMMENT

One commentor requested that details on perpendicular distances between runways and potential Naval spent nuclear fuel storage sites be provided in the EIS to allow for calculation of the exponential factors in the crash probability expressions in Section F.3.2.

RESPONSE

Perpendicular distances between runways and potential Naval spent nuclear fuel storage sites can be determined by interested parties from the aeronautical and site maps obtained for each site from the Federal Aviation Authority referenced in section F.3.3. For Pearl Harbor, the following distances were used in calculating the airport crash probabilities:

Airport	Runway Designation	Y-miles from end of runway to SNF	X-miles from centerline of runway to SNF
Honolulu International/ Hickam AFB	8 left	0.99	1.75
	8 right	0.93	2.97
	4 right	0.17	3.32
Barbers Point NAS	29	3.9	6.1
	11	5.6	6.1
	22 left	6.6	1.4
	22 right	6.6	1.5
	4 left	8.4	1.5
	4 right	8.4	1.4

08.05.06 (018) Analyses of Normal Operations and Accidents

COMMENT

One commentator presumed that the reason aircraft crash probabilities for potential Naval spent nuclear fuel management sites are small is due to the exponential decrease in the probability of an airplane striking an object on the ground as the distance from airports increases.

RESPONSE

The observation that the probability of an airplane crashing into an object on the ground decreases rapidly as the distance between an airport or airway and the object increase is borne out by the data on aircraft crashes. Objects or buildings near airports or using main air routes are more likely to be involved in a crash than those at greater distances because there are more aircraft in the vicinity of airports or heavily used airways and because an aircraft is more likely to crash during takeoff and landing than during other flight conditions.

The exponential factors which are included in the crash probability formula take into account the fact that the probability of an aircraft crash striking a specific target decreases exponentially as the distance from the target to the centerline of the runway or airway increases. Further, the rate at which this exponential decrease occurs is dependent upon other factors such as the type of aircraft which is involved, and the type of flight operation in progress, such as takeoff, landing, or level flight.

08.05.06 (019) Analyses of Normal Operations and Accidents

COMMENT

A commentor requested more detailed justification in the EIS for the use of a reduced aircraft skid distance of 300 feet at shipyards.

RESPONSE

The 300 foot skid distance identified in section F.3.3 is based on a review of several shipyard and prototype sites which might contain Naval spent nuclear fuel. This review showed that from most directions an aircraft could not skid more than a few hundred feet before it would hit a building, crane, or drydock in the crowded confines of a Navy site. Such an obstacle would quickly bring the airplane to rest and would thus limit the skid distance.

In addition, a more detailed quantitative analysis was performed for two selected site locations to check the validity of the use of a 300 foot skid distance. Analysis of these latter site locations was performed using maps of the specific sites, locating on these maps the potential site where Naval spent nuclear fuel could be kept, and calculating the average of the maximum skid distances for every direction around the Naval spent nuclear fuel. In this calculation, it was assumed that an airplane would skid 1600 feet along the ground unless the distance it could skid would be limited by an existing building, drydock, or other substantial structure. No credit was taken for reductions in skid distance caused by cranes, high buildings, or raised earthen berms. The average skid distances for these two shipyards calculated in this manner were 199 feet and 314 feet. These results support the use of the 300 foot skid distance in this EIS.

08.05.06 (020) Analyses of Normal Operations and Accidents

COMMENT

This EIS should present in detail the differences between the Nuclear Regulatory Commission and Sandia methods for calculating aircraft crash probabilities.

RESPONSE

There are several key differences between the Nuclear Regulatory Commission and Sandia methodologies which will produce differences in the calculated crash probabilities at spent nuclear fuel sites. First, the Nuclear Regulatory Commission method treats crashes during landing and takeoff operations at airports as equally probable events. In contrast, the Sandia method distinguishes between the two, and assigns a higher probability of occurrence to a crash during landing, which is consistent with crash data for commercial and military aircraft.

Second, the Nuclear Regulatory Commission method calculates the probabilities of crashes for concentric rings around the airports, whereas the Sandia method employs an approach using two zones based on the direction of travel and whether the aircraft is landing or taking off. With the Nuclear Regulatory Commission method, the probability of an aircraft crash during takeoff or landing is equally likely to occur in all directions at a given radius from the airport. Thus, during a takeoff operation, a target located behind the aircraft or off to the side of the aircraft is just as likely to be involved in an aircraft crash as a target located ahead of the aircraft. This result is not realistic based on existing crash data which indicates that targets behind the aircraft and off to the sides are seldom, if ever, involved in crashes during takeoffs. In contrast, the Sandia crash zone approach identifies two distinct crash zones: one ahead of the runway, and one off to the sides of the runway. Different crash probability values are used for each zone to avoid calculating probabilities for unrealistic situations such as the one just described.

Finally, the Sandia method includes terms, not found in the Nuclear Regulatory Commission method, which adjust the aircraft crash probability based on the angle between the centerline of the runway and a line which extends from the end of the runway to the target, and aircraft type. Civilian aircraft typically follow a straight approach or departure route so this feature increases the crash probability if the target is located along the runway centerline or at small angles from the runway centerline. For military high performance aircraft, similar crash probability adjustments are made during landing operations, but are not made during takeoff operations since military aircraft typically do not follow a straight departure route. These angular adjustments in crash probability are consistent with crash data for both commercial and military aircraft.

08.05.06 (021) Analyses of Normal Operations and Accidents

COMMENT

The effects on endangered or threatened species in the vicinity of a Navy site as a result of routine operations or accidents associated with Naval spent nuclear fuel management operations should be evaluated.

RESPONSE

The EIS considers in detail the potential environmental effects of each alternative under routine operations and accident conditions. The results of these analyses show, and past experience demonstrates, that Naval spent nuclear fuel can be managed safely and without adverse environmental effects. Chapter 5 of Appendix D to Volume 1 includes a discussion of the effects of Naval spent nuclear fuel management on the ecology in the vicinity of the sites considered.

To ensure appropriate protection for protected species, the location for any new Naval spent nuclear fuel storage or examination facilities would be selected to avoid ecologically sensitive areas, such as those in the vicinity of threatened or endangered species. Construction activities would comply with all applicable laws and regulations, using established procedures for preserving air and water quality and minimizing such impacts as noise and disturbance or destruction of habitat.

No Naval spent nuclear fuel storage or examination facility would release water carrying radioactive or hazardous material to the environment. In almost 40 years of receipt, transportation, handling, and examination of Naval spent nuclear fuel, the Naval Nuclear Propulsion Program has never had a release of radioactivity that has had a significant effect on the environment. Based on the operations that would be performed and the controls that would be in place, the impacts on air, water, ecological, or geological resources of any Naval facility considered would be small. Furthermore, experience has shown that since Naval spent nuclear fuel management is a low-intensity industrial activity, its contributions to noise and traffic would be inconsequential. Detailed calculations have shown that the cumulative radiation exposure, and the health impacts of that exposure, on the human population in the vicinity of a Naval spent nuclear fuel facility would be inconsequential; correspondingly, it is judged that the operation of such a facility would not threaten the existence of any species.

In the unlikely event of a serious accident involving Naval spent nuclear fuel, it is estimated that for the most severe case only about 210 acres of land would be affected to an extent that would exceed the Nuclear Regulatory Commission public limit of 100 millirem per year. Most of this area would be within shipyard or DOE site boundaries. The affected area would require decontamination, but this does not mean that an area of such size would be rendered permanently unavailable for use or even evacuated for long periods of time. In reality, radioactive contamination could and would be removed in order to minimize the affected area. Since the radiological effects of accidents on the human population would be small, the radiological effects on species other than humans would also likely be small.

08.05.06 (022) Analyses of Normal Operations and Accidents

COMMENT

The effects on endangered or threatened species in the vicinity of a Navy site as a result of routine operations or accidents associated with Naval spent nuclear fuel management operations should be evaluated.

RESPONSE

The EIS considers in detail the potential environmental effects of each alternative under routine operations and accident conditions. The results of these analyses show, and past experience demonstrates, that Naval spent nuclear fuel can be managed safely and without adverse environmental effects. Chapter 5 of Appendix D to Volume I includes a discussion of the effects of Naval spent nuclear fuel management on the ecology in the vicinity of the sites considered.

To ensure appropriate protection for protected species, the location for any new Naval spent nuclear fuel storage or examination facilities would be selected to avoid ecologically sensitive areas, such as those in the vicinity of threatened or endangered species. Construction activities would comply with all applicable laws and regulations, using established procedures for preserving air and water quality and minimizing such impacts as noise and disturbance or destruction of habitat.

No Naval spent nuclear fuel storage or examination facility would release water carrying radioactive or hazardous material to the environment. In almost 40 years of receipt, transportation, handling, and examination of Naval spent nuclear fuel, the Naval Nuclear Propulsion Program has never had a release of radioactivity that has had a significant effect on the environment. Based on the operations that would be performed and the controls that would be in place, the impacts on air, water, ecological, or geological resources of any Naval facility considered would be small. Furthermore, experience has shown that since Naval spent nuclear fuel management is a low-intensity industrial activity, its contributions to noise and traffic would be inconsequential. Detailed calculations have shown that the cumulative radiation exposure, and the health impacts of that exposure, on the human population in the vicinity of a Naval spent nuclear fuel facility would be inconsequential; correspondingly, it is judged that the operation of such a facility would not threaten the existence of any species.

In the unlikely event of a serious accident involving Naval spent nuclear fuel, it is estimated that for the most severe case only about 210 acres of land would be affected to an extent that would exceed the Nuclear Regulatory Commission public limit of 100 millirem per year. Most of this area would be within shipyard or DOE site boundaries. The affected area would require decontamination, but this does not mean that an area of such size would be rendered permanently unavailable for use or even evacuated for long periods of time. In reality, radioactive contamination could and would be removed in order to minimize the affected area. Since the radiological effects of accidents on the human population would be small, the radiological effects on species other than humans would also likely be small.

08.05.06 (023) Analyses of Normal Operations and Accidents

COMMENT

The effects of hurricanes or tsunamis should be analyzed in this EIS and considered in the final decision.

RESPONSE

While hurricanes can have high winds, hurricane winds normally cannot generate the very large, very fast missiles analyzed for tornadoes. For example, tornado winds of 360 miles per hour were used to generate the wind-driven missiles used in evaluating storage in shipping containers, as described in Section F.1.4 of Appendix D to Volume 1. These winds are the same as those specified for design of nuclear power plants. Hurricanes very infrequently produce winds that could generate such missiles, so the analyses provided for tornadoes in Appendix D provide an upper limit for the effects of hurricanes. Examination of damage caused by recent severe hurricanes shows that robust structures can withstand hurricanes. Based on these considerations, the analysis of wind-driven missiles in the EIS is reasonable and adequate.

The containers used for storage are designed to withstand water immersion under severe accident conditions and no deleterious effects would be expected from submersion of a container. Thus, the rugged containers used for storage would be highly unlikely to be penetrated during a hurricane or tsunami.

Storage of Naval spent nuclear fuel in water pools at Navy sites is also considered under the Decentralization alternative. The Naval spent nuclear fuel in water pools would normally be under water and the effects on the environment due to flooding by a hurricane or tsunami would be primarily limited to exchanging some pool water bearing radioactive corrosion products with the flood waters. Such a release would not be expected to occur except for the most severe hurricanes or tsunamis. Attachment F to Appendix D of Volume I provides analyses of the effects of releases of water containing radioactive material. The results of these analyses represent an upper limit on the effects of releases possible during a hurricane or tsunami sufficiently severe to flood a water pool containing Naval spent nuclear fuel. These results show that the risks of such releases would be small under all of the alternatives considered.

Some commentors expressed concern about the depth of flooding of drydocks during such severe weather. However, this is not a concern because Naval spent nuclear fuel facilities would not be placed in drydocks since they are needed for ship maintenance and repair.

08.05.06 (024) Analyses of Normal Operations and Accidents**COMMENT**

Hurricanes can have winds like the 212 miles per hour measured during Hurricane Iniki in 1992. Since hurricanes are more common than tornadoes, the probability for a wind-driven missile is higher than the tornado probability given in the EIS.

RESPONSE

The analysis presented in section F.1.4.2.2. of Attachment F to Volume I, Appendix D, Part B, assumed a missile driven by the winds of a tornado impacted upon a dry storage container. This assumption was made because winds produced by tornados are higher than hurricane winds and thus the impacting missile would be traveling with higher velocity and would have higher kinetic energy. Even at this higher velocity, analysis has shown that the missile would not penetrate the container. The probability of penetration at the lower velocity of a hurricane (212 miles per hour) would be even smaller than the probability of penetration for a missile propelled by the winds of a tornado (traveling at 360 mph).

While hurricanes can have high winds, hurricane winds normally cannot generate the very large, very fast missiles analyzed for tornadoes. While hurricanes may occur more frequently than tornadoes the overall risk from a hurricane is lower because of the lack of penetration of the container.

The analysis of wind damage using missiles propelled by the winds of tornados is the same as is done for design of nuclear power plants. Hurricanes very infrequently have winds that could generate such missiles, so the analyses provided for tornados in Appendix D provide an upper limit for the effects of hurricanes. Examination of damage caused by recent severe hurricanes shows that robust structures can withstand hurricanes. Based on these considerations, the analysis of wind-driven missiles in the EIS is reasonable and adequate.

08.05.06 (025) Analyses of Normal Operations and Accidents**COMMENT**

Accidents could be caused by human error during handling or storage of Naval spent nuclear fuel.

RESPONSE

The range of hypothetical accidents analyzed in Appendix D to Volume 1 (more than ten different accidents) include those which might be caused by human error, failures of equipment, and natural phenomena, such as earthquakes or tornados. The analyses provide calculations of the most severe consequences which might be caused by reasonably foreseeable accidents.

The accidents analyzed include those caused by persons working with Naval spent nuclear fuel, such as improper crane operation, and by others, such as aircraft crashes, which could be caused by pilot error. The analyses and some of the possible initiating causes are described in detail in Attachment F to Appendix D.

08.05.06 (026) Analyses of Normal Operations and Accidents

COMMENT

The effects of routine Naval spent nuclear fuel management operations on water consumption or usage should be evaluated.

RESPONSE

For each of the locations considered for management of Naval spent nuclear fuel, consumption of both surface water and groundwater has been evaluated. (See the Water Resources sections of Chapter 5 in Appendix D to Volume I) As stated in the EIS, consumption or usage of water is expected to represent a small change at all of the sites.

For example, current freshwater usage at the Puget Sound Naval Shipyard is identified in Chapter 4 of Appendix D to Volume I as 676 million gallons annually. At Norfolk Naval Shipyard, current water consumption is 823 million gallons yearly. None of the alternatives for Naval spent nuclear fuel management would involve an increase in current water usage at any location of more than 3 million gallons yearly.

08.05.06 (027) Analyses of Normal Operations and Accidents

COMMENT

The effects on groundwater resulting from routine operations or accidents associated with Naval spent nuclear fuel management should be evaluated.

RESPONSE

The effects of Naval spent nuclear fuel management on groundwater are addressed in Volume I, Appendix D. During routine operations associated with spent nuclear fuel there would be no discharge of radioactive or hazardous liquid effluents under any of the alternatives at any of the sites. This is consistent with current Naval spent nuclear fuel management practices.

The effects of accidents on groundwater are also addressed in Appendix D, Attachment F. These analyses consider exposure and risk associated with direct release of radioactivity to surface water or

ground water, as well as potential for air releases which affect ground or surface waters. Details of the analyses are summarized in Attachment F.

08.05.06 (028) Analyses of Normal Operations and Accidents

COMMENT

The effects on the ocean of routine operations or accidents associated with Naval spent nuclear fuel management should be evaluated.

RESPONSE

The effects on the ocean of routine operations and accidents associated with Naval spent nuclear fuel management are addressed in Attachment F to Appendix D. Table F.1.3.8-2 addresses impacts to water resources in the vicinity of locations involved with spent nuclear fuel operations. The possible exposures to radioactive material documented in Attachment F and the impacts of various Naval spent nuclear fuel management alternatives include those due to any radioactivity entering the ocean near the shipyards. The effects of both deposition of airborne radioactivity and liquid effluent releases were analyzed. Impacts due to activities on and in the ocean (boating and swimming) as well as ingestion of sea food were included in the evaluations.

From the start of the Naval Nuclear Propulsion Program, the policy of the U.S. Navy has been to reduce to the minimum practicable amount the amounts of radioactivity released into harbors. Navy procedures to accomplish this have been reviewed with DOE, the U.S. Nuclear Regulatory Commission, and the U.S. Environmental Protection Agency.

The total amount of long-lived gamma radioactivity released into harbors and seas within twelve miles of shore has been less than 0.002 curie during each of the last twenty-three years. This total is for releases from U.S. Naval nuclear-powered ships and from the supporting shipyards, tenders, and submarine bases and at operating bases and home ports in the U.S. and overseas, and all other U.S. and foreign ports which were visited by Navy nuclear-powered ships. (Refer to Report NT-94-1, Environmental Monitoring and Disposal of Radioactive Wastes from U.S. Naval Nuclear Powered Ships and Their Support Facilities, Washington, D.C., March 1994). To put this small quantity of radioactivity into perspective, it is less than the quantity of naturally occurring radioactivity in the volume of ocean water occupied by a single nuclear-powered submarine.

There are no fission product releases to the ocean from nuclear fuel on board operating Naval vessels because the fuel is designed to contain fully any fission products in order to protect the crew.

08.05.06 (029) Analyses of Normal Operations and Accidents

COMMENT

The Draft EIS does not account for severe water leaks from the Expended Core Facility.

RESPONSE

There is no evidence that any leakage is occurring from the Expended Core Facility (ECF) water pool. Each time water is added to the pool at ECF the amount is measured and recorded. Actual measured water additions to the ECF pool can be correlated with expected evaporation from the surface of the water pool rather than leakage. Nevertheless, section F.1.4.2.1.6 of this EIS presents an accident analysis for minor water leakage from the ECF water pool. The analysis was based on the largest amount of water leakage from the ECF pool that is reasonably foreseeable. This analysis used the isotopes and their concentrations shown by measurement to be present in the ECF pool water to represent the radioactivity which might be released to the environment.

In addition to the analysis of minor water leakage, section F.1.4.2.1.1 presented an analysis of an accident where the entire contents of the Expended Core Facility water pool are assumed to leak rapidly due to a seismic event. This analysis assumed that the isotopes normally present and those which could escape due to shock impact from the seismic event would be present in the water leaking to the environment.

The results of both these analyses indicate that the impact on the environment would be very, very small.

There have been leaks from the Expended Core Facility on occasion in the past, but these leaks have been located and corrected when they occurred. Monitoring of the groundwater in the vicinity of the Expended Core Facility has detected no radioactive material released from ECF.

08.05.06 (030) Analyses of Normal Operations and Accidents

COMMENT

Storage or management of Naval spent nuclear fuel at a Navy site would make it a more attractive target for attack in the event of war.

RESPONSE

Since Naval spent nuclear fuel is not a strategic asset, the presence or absence of Naval spent nuclear fuel would not be expected to alter the strategy of an aggressor with respect to attacking a Naval shipyard.

Information has been added to Appendix D of Volume 1 of the EIS which provides further discussion of the effects of an attack on Naval spent nuclear fuel management facilities or equipment in the event of war, terrorism or sabotage. The effect of such an attack is expected to be conservatively bounded by the limiting accident discussed at each facility under each alternative. For example, the most limiting accident involving Naval spent nuclear fuel is described in Attachment F of Appendix D to be an airplane crash into a shipping container at the Pearl Harbor Naval Shipyard. This accident would lead to 26 latent fatal cancers over the next fifty years in the population within 50 miles of the shipyard. Since the probability of the event is one chance in 100,000 per year, the risk would be 0.00026 latent fatal cancer fatalities per year or, in other words, about one chance in 4,000 of a single latent fatal cancer fatality over a year. This risk is shared among the approximately 820,000 people residing within 50 miles of the shipyard who would be expected to have over 2,000 cancer fatalities from all causes every year. For an act of war, sabotage or terrorist attack, it is likely the risk would be lower than calculated because it should be less probable that a force would exist to disperse radioactive products into the atmosphere from a weapon as compared to the motive force of the fire assumed in the case of an airplane crash.

08.05.06 (031) Analyses of Normal Operations and Accidents

COMMENT

Storage or management of spent nuclear fuel at a Navy site would make it a more attractive target for terrorist attack or sabotage.

RESPONSE

Naval spent nuclear fuel would be stored or examined only within the secure areas of a DOE or Navy site. The security precautions in effect at these sites, in addition to the extremely rugged containers or thick walls of water pools, would make the Naval spent nuclear fuel management facilities unattractive targets for terrorists.

Information has been added to Appendix D of Volume 1 of the EIS which provides further discussion of the effects of an attack on Naval spent nuclear fuel management facilities or equipment in the event of war, terrorism or sabotage. The effect of such an attack is expected to be conservatively bounded by the limiting accident discussed at each facility under each alternative. For example, the most limiting accident involving Naval spent nuclear fuel is described in Attachment F of Appendix D to be an airplane crash into a shipping container at the Pearl Harbor Naval Shipyard. This accident would lead to 26 latent fatal cancers over the next fifty years in the population within 50 miles of the shipyard. Since the probability of the event is one chance in 100,000 per year, the risk would be 0.00026 latent fatal cancer fatalities per year or, in other words, about one chance in 4,000 of a single latent fatal cancer

fatality over a year. This risk is shared among the approximately 820,000 people residing within 50 miles of the shipyard who would be expected to have over 2,000 cancer fatalities from all causes every year.

For an act of war, sabotage or terrorist attack, it is likely the risk would be lower than calculated for the airplane crash because it should be less probable that a force would exist to disperse radioactive products into the atmosphere from a weapon as compared to the motive force of the fire assumed in the case of an airplane crash. For example, anti-tank weapon attacks on containers would be less severe than the accidents analyzed because: (a) anti-tank weapons would cause a self-sealing penetration in the metal of a container, unlike that which is assumed from the airplane crash (impact from a 50 inch diameter engine rotor); (b) there is no explosive material inside the container, so it will not "blow up" as a tank would if hit by such a weapon (in a tank attack, the tank shells inside the turret detonate); (c) there would be no fire to disperse the radioactivity that is released when the container is breached, unlike an aircraft crash where the jet fuel will burn creating such a fire. The rugged design of containers and the thick walls of water pools, combined with the shock-absorbing nature of water with a free surface, reduce the effects of other types of explosive charges. Attachment F of Appendix D of the EIS has been modified to better describe this analysis.

08.05.06 (032) Analyses of Normal Operations and Accidents

COMMENT

The EIS should describe the consequences of a terrorist attack on Naval spent nuclear fuel management facilities.

RESPONSE

The consequences of such an attack have been considered and determined to be less than the limiting accidents analyzed in the EIS, specifically the crash of a large jet or an earthquake (See Appendix D, Attachment F, Section F.1.2). Attacks using anti-tank weapons or other specialized weapons, as well as conventional explosives, were evaluated.

The reasons that anti-tank weapon attacks on containers would be less severe than the accidents analyzed are: (a) anti-tank weapons would cause a self-sealing penetration in the metal of a container, unlike that which is assumed from the airplane crash (impact from a 50 inch diameter engine rotor); (b) there is no explosive material inside the container, so it will not "blow up" as a tank would if hit by such a weapon (in a tank attack, the tank shells inside the turret detonate); (c) there would be no fire to disperse the radioactivity that is released when the container is breached, unlike an aircraft crash where the jet fuel

might pool, ignite, and create a fire. The rugged design of containers and the thick walls of water pools, combined with the shock-absorbing nature of water with a free surface, reduce the effects of other types of explosive charges. It is not credible that a terrorist attack would result in a criticality or meltdown of spent nuclear fuel; however, in Section F.1.4.2.1.2 the consequences of a hypothetical criticality accident are presented. The risks associated with an accidental criticality are less than those associated with a drained water pool or an airplane crash into dry storage containers. Attachment F of Appendix D of the EIS has been modified to better describe this analysis.

Terrorist attacks on Naval spent nuclear fuel during shipment were also evaluated. The massive structure of the shipping containers used for Naval spent nuclear fuel makes them an unlikely target of a terrorist attack. No such attacks have occurred in the nearly 40 years of rail shipments, which have now traveled about 2 million kilometers. Thus, the probability of a terrorist attack on a shipment is judged to be no more than the probability of a rail accident which is listed in section A.7.1.2.1 of Attachment A to Appendix D of the EIS. The consequences of a terrorist attack are also judged to be no more severe than those listed for transportation accidents. Therefore the same conclusions reached for transportation accidents apply to the risk to the extremely rugged shipping containers from terrorist attack during a shipment. In addition, during shipment, all Naval spent nuclear fuel containers are accompanied by escorts who remain in contact with headquarters. In the event of an emergency, state and federal resources would be quickly summoned to stabilize the situation.

08.05.06 (033) Analyses of Normal Operations and Accidents

COMMENT

The effects of a terrorist attack using a nuclear weapon should be evaluated for Naval spent nuclear fuel management facilities.

RESPONSE

Naval spent nuclear fuel would be stored or examined only within the secure areas of a DOE or Navy site. The security precautions in effect at these sites would make the Naval spent nuclear fuel management facilities unattractive targets for terrorists. Although a detailed analysis of the effect of a nuclear weapon attack has not been included in the EIS, such a scenario would not cause an uncontrolled chain reaction or explosion in Naval spent nuclear fuel. The only effect that might occur from a nuclear weapon detonation would be damage or dispersion of the spent nuclear fuel. The immediate death and destruction resulting from detonation of the nuclear weapon itself would be of much greater concern than the limited delayed effects associated with Naval spent nuclear fuel.

08.05.06 (034) Analyses of Normal Operations and Accidents

COMMENT

The weight of the Naval spent nuclear fuel shipping containers may be greater than can be supported by existing buildings or structures.

RESPONSE

The weight of shipping containers can be readily accommodated on any well constructed pad on firm ground. This is illustrated by the fact that they are within the weight limits for the railroads and are transported over the standard rail lines and handled at the Navy shipyards and INEL without special arrangements or structures. Containers used in transport of Naval spent nuclear fuel have been used to approximately 40 years without causing damage to existing buildings or structures.

8.5.7 Emergency Planning

08.05.07 (001) Emergency Planning

COMMENT

It would be impossible (or very difficult) to evacuate Oahu in the event of an accident at Pearl Harbor Naval Shipyard involving Naval spent nuclear fuel stored there.

RESPONSE

Evaluation of the results in this EIS shows that evacuation of Oahu should not be required even if the most severe accident postulated for Naval spent nuclear fuel were to occur.

In order to help understand why this is the case for even severe hypothetical accidents, Appendix D (See Chapter 5, section 5.1.4.14.3, and Attachment F, section F.1.3.8) provides the results of calculations of radioactive material dispersion and deposition calculations for a hypothetical airplane crash into Naval spent nuclear fuel storage containers at Pearl Harbor Naval Shipyard. (As one measure of the conservatism of the analyses, such a crash is not expected to breach a container, but in the EIS it was assumed that such an accident would occur nonetheless.) This is the worst case potential accident for that site. These results show that even under this extremely severe case, an area of only about 110 acres could be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission public limit of 100 millirem per year might result for a person living full-time on that land. Most of this area would be within shipyard boundaries. The potentially contaminated area would be small owing to the relatively small amount of spent nuclear fuel in a storage container and the robust nature of the container and the fuel.

These results mean that the maximum area which might be considered for possible evacuation in the most severe case would be very small and localized. It should be kept in mind that the calculation described in the preceding paragraph assumes that no action is taken to clean up the radioactivity released and people would occupy the land full time for at least a year without any action to mitigate the effects of exposure. In reality, radioactive contamination could and would be removed in order to minimize the affected area and reduce impacts on any people involved.

08.05.07 (002) Emergency Planning

COMMENT

It would be difficult to obtain emergency aid from the Mainland in the event of an accident at Pearl Harbor Naval Shipyard involving Naval spent nuclear fuel stored there.

RESPONSE

As discussed in this EIS (See Appendix D, Section 5.8.4), the Navy has significant emergency response capability on Oahu and does not rely on resources from the Mainland for emergency response. Furthermore, the analysis of the impact of hypothetical accidents in the EIS did not rely on any off-shipyard response. The State of Hawaii does have radiological emergency response procedures. In addition, the State of Hawaii plans in place to deal with natural emergencies such as hurricanes and floods are sufficient to deal with any public response necessary in the unlikely event of a problem involving Naval spent nuclear fuel. Thus, any off-shipyard emergency response would reduce the potential health impacts below the levels calculated in the EIS.

08.05.07 (003) Emergency Planning

COMMENT

Emergency planning for accidents involving Naval spent nuclear fuel should be described in this Environmental Impact Statement.

RESPONSE

As discussed in Appendix D (Section 5.8.4), the Navy has significant emergency response capability at all of its sites and does not rely on the State or local resources for emergency response. Furthermore, the analysis of the impact of hypothetical accidents in the EIS did not rely on any off-shipyard response. All of the states hosting Navy sites have radiological emergency response procedures. In addition, other civil defense plans in place to deal with natural emergencies are sufficient to deal with any public response necessary in the unlikely event of a problem involving Naval spent nuclear fuel.

As a further point, the analyses of hypothetical accidents in Appendix D are conservative because they assume that no off-site emergency response actions are taken. Thus, any off-site emergency response to protect the public would reduce the potential health impacts below the levels calculated in the EIS.

08.05.07 (004) Emergency Planning

COMMENT

The State of Hawaii's Department of Health would not be capable of responding to a major release of radioactive material at Pearl Harbor.

RESPONSE

The analyses of hypothetical accidents in Appendix D to Volume I assume that no off-site emergency response actions are taken in the event of even the most severe accidents. Thus, if an off-site emergency response occurred, it would reduce the potential health impacts below the levels calculated in the EIS.

As discussed in Appendix D (Section 5.8.4), the Navy has significant emergency response capability at all of its sites, including Pearl Harbor, and does not rely on the State of Hawaii or local resources for emergency response beyond existing emergency plans and resources. Nonetheless, the state of Hawaii, like all of the states hosting Navy sites, has emergency response procedures already established. In addition, other civil defense plans in place to deal with natural emergencies are sufficient to deal with any public response necessary in the unlikely event of a problem involving Naval spent nuclear fuel. Coordination of Navy and local emergency response capabilities is tested periodically in drills simulating radiological accidents at the shipyard.

08.05.07 (005) Emergency Planning

COMMENT

The existence of emergency plans and the state of readiness maintained by emergency response teams is an indication that an accident is likely.

RESPONSE

Maintaining preparedness for emergencies has been judged by most people in the United States to be a prudent step. This does not mean that all of the emergencies for which preparedness is maintained are highly probable or even likely, but reflects the belief that it is more prudent to train personnel and provide equipment that might be needed in emergencies if they occur. Experience has also shown that such preparedness can be of great value in less severe accidents or in natural disasters.

Preparedness for the most severe accidents has been a basic tenet of the Navy and the Naval Nuclear Propulsion Program from the very beginning of the use of nuclear power in warships. Despite steaming more than 100,000,000 miles and accumulating over 4400 reactor years of operation without a reactor accident or any problem having a significant effect on the environment, the Navy has continued to train personnel how to respond a full range of accidents and has tested the preparedness of their personnel with periodic exercises. These exercises include interaction with appropriate state and local agencies and continue to form a cornerstone of the safety philosophy of the Naval Nuclear Propulsion Program.

The Navy's efforts to maintain vigilance and preparedness do not in any way indicate that accidents are expected or accepted.

08.05.07 (006) Emergency Planning

COMMENT

There is no warning system in place in the vicinity of Puget Sound Naval Shipyard to alert the citizens in the event of a radiological accident at the shipyard (and no funding mechanism exists to support such a system).

RESPONSE

The EIS shows that the maximum area in the vicinity of Puget Sound Naval Shipyard which might be considered for possible evacuation in the most severe radiological accident involving spent nuclear fuel management would be very small and localized. Consequently, the normal methods for notifying the public, such as the Emergency Broadcast System, commercial radio and television and police car public address systems, are adequate. In addition, the Navy has significant emergency response capability at all of its sites. These resources also would be available to provide public assistance if needed.

In order to help understand why this is the case for even severe hypothetical accidents, Appendix D to Volume I (See Chapter 5, Section 5.1.1.14.3, and Attachment F, Section F.1.3.8) provides the results of calculations of radioactive material dispersion and deposition calculations for a hypothetical airplane crash into Naval spent nuclear fuel storage containers at Puget Sound Naval Shipyard. It is an indication of the conservative nature of the analyses in the EIS that an accident assuming breach of the container was included in the EIS even though such an airplane crash involving the largest aircraft in existence would not be expected to penetrate the containers. This is the worst case potential accident for that site. These results show that even under this extremely severe case an area of only about 110 acres could be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission public limit of 100 millirem per year might result for a person living full time on that land for a year and most of this area would be within shipyard boundaries. The potentially contaminated area would be small

owing to the relatively small amount of spent nuclear fuel in a storage container and the robust nature of the container and the fuel.

08.05.07 (007) Emergency Planning

COMMENT

The citizens in the vicinity of Puget Sound Naval Shipyard are not prepared to respond to a radiological emergency.

RESPONSE

Representatives of the Puget Sound Naval Shipyard have met a number of times in the past with the Kitsap County Emergency Management (KDEM) Agency to address emergency planning related matters, including Shipyard assistance of response to off-site radiological accidents and emergencies. In these discussions, the representatives of the Kitsap County Emergency Management Agency have stated their intention to familiarize citizens and businesses with emergency planning concepts such as sheltering. Puget Sound Naval Shipyard will continue to work with local emergency planning organizations to ensure that adequate response capabilities exist in the remote event of a radiological accident.

08.05.07 (008) Emergency Planning

COMMENT

The Puget Sound Naval Shipyard does not share emergency response plans or conduct joint planning with local emergency management organizations.

RESPONSE

This statement is inaccurate. Over the years, the Puget Sound Naval Shipyard has conducted or attended many formal meetings with the representatives of local emergency preparedness organizations. Some examples of the information exchanged during these meetings include: notification procedures, shipyard response and assistance for radiological accidents at locations other than the shipyard, Kitsap County Emergency Plan revision, information for shipyard annexes to the Washington and Kitsap County Emergency Management Plans, radiation monitoring instrumentation, public information releases, communication equipment, monitoring beyond the boundaries of the shipyard, aerial monitoring, accident scenarios, shipment of radioactive material, training for county firefighters and Emergency Medical Technicians, Event Category and Protective Action Recommendations, and an overview of nuclear-powered Naval vessels, the reactors installed in them, and Naval nuclear fuel. The shipyard has

also presented overviews of the Navy Environmental Monitoring Program and the Navy Radioactive Waste Disposal Program.

Over the past 18 years, the Shipyard has met with the Kitsap Department of Environmental Management (KDEM) approximately 30 times and has provided information for potential inclusion in annexes to their emergency plans. In January, 1992, the Shipyard assisted the Kitsap Department of Environmental Management in reviewing and revising parts of the draft revision to the 1973 County plan. The current County Plan reflects information provided by the shipyard. The Shipyard will continue to provide technical assistance to the County as applicable information from the County's operating procedures is added to the County's plan.

Many tours of the Shipyard Emergency Control Center and the control center to be used at the scene of an accident have been conducted for state and local officials. The Kitsap county emergency management agencies have been involved with planning and conducting joint exercises.

08.05.07 (009) Emergency Planning

COMMENT

It would be very difficult to evacuate the area in the vicinity of Norfolk Naval Shipyard in the event of an accident due to the large population and the poor highway system.

RESPONSE

The results of the analyses of postulated accidents in this EIS show that no evacuation would likely be required even if the most severe accident postulated for Naval spent nuclear fuel were to occur at any of the sites considered.

In order to help understand why this is the case for even severe hypothetical accidents, Appendix D, Attachment F, Section F.1.3.8 provides the results of calculations of radioactive material dispersion and deposition calculations for all hypothetical accident scenarios analyzed. For the worst case potential accident at Navy sites, the results show that an area of less than about 110 acres could be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission public limit of 100 millirem per year might result for a person living full time on that land for an entire year. Most of this area would be within shipyard boundaries.

These results mean that the maximum area which might be considered for possible evacuation in the most severe case would be very small and localized. It should be kept in mind that the calculation described in the preceding paragraph assumes that no action is taken to clean up the radioactivity

released and people would occupy the land full time for at least a year without any action to mitigate the effects of exposure. In reality, radioactive contamination could and would be removed in order to minimize the affected area and reduce impacts on any people involved.

8.5.8 Cumulative Impacts

08.05.08 (001) Cumulative Impacts

COMMENT

The cumulative impacts of radiation and other carcinogens should be analyzed.

RESPONSE

The radiological and non-radiological cumulative health impacts associated with each alternative involving Naval spent nuclear fuel are addressed in Volume I, Section 5.3 and in more detail in the Cumulative Impacts section for each site in Chapter 5 of Appendix D to Volume I. The results of the analyses performed in support of the EIS demonstrate that implementing any of the alternative at any of the sites would not produce significant cumulative impacts. As discussed in Volume I, Appendix D, this stems from the fact that release of radioactive materials is strictly controlled at minute levels, levels which are very small compared to the amounts of radioactivity present in the environment from natural sources, and that the only chemical releases associated with routine Naval spent nuclear fuel operations would be the small amounts of combustion products associated with heating boiler operations and occasional emergency diesel operations.

Radiological and non-radiological cumulative health impacts associated with carcinogens are treated separately in the EIS because, with few exceptions such as cigarette smoke, increases in the effects of known carcinogens caused by combination with exposure to radioactive materials or radiation have not been quantified or conclusively identified by the scientific community. Further, as noted above, spent nuclear fuel operations release only a small level of combustion exhaust in addition to the minute levels of radioactive material releases. In addition, considerably less is known about the health risks due to chemical carcinogens so quantitative tools for assessing these risks are either not available or not widely accepted. Consequently, combining risks associated with radiological and non-radiological carcinogens would introduce considerable unnecessary uncertainty into the calculations for risks associated with radioactivity.

8.5.9 Waste Characterization and Management

08.05.09 (001) Waste Characterization and Management

COMMENT

The Navy should identify how it expects to manage greater-than-class C low-level waste.

RESPONSE

U.S. Nuclear Regulatory Commission 10 CFR 61 identifies three classes of low-level wastes which are generally suitable for near-surface disposal: namely, Classes A, B and C. Wastes with concentrations greater than those specified for Class C for certain short and long-lived isotopes were found to be not generally suitable for near surface disposal. These wastes are classified as "greater than Class C" Low-Level radioactive waste (GTCC LLW).

In May 1989, the Nuclear Regulatory Commission promulgated a rule that requires disposal of commercially generated Low-Level Waste with concentrations of radioactivity greater than Class C in a deep geologic repository, unless disposal elsewhere is approved by the Nuclear Regulatory Commission.

Currently, a small amount (about 25 cubic meters) of greater than Class C Low-Level Waste in material removed from the ends of Naval spent nuclear fuel modules over the years is being stored at the Naval Reactors Facility pending availability of a disposal facility licensed by the Nuclear Regulatory Commission. This material has been collected and held at the Expanded Core Facility for many years. In addition, about 0.02 cubic meters of test specimens are being stored at the Expanded Core Facility as greater than Class C Low-Level Waste pending availability of a permanent disposal facility. This practice is expected to continue over the period of time covered by this EIS.

This description of how greater than Class C Low-Level Waste is stored at the Expanded Core Facility has been added to Volume I, Appendix D of the EIS.

08.05.09 (002) Waste Characterization and Management

COMMENT

The quantity and character of Naval Reactors Facility specimens irradiated at INEL and other test reactors that ultimately are sent to the Radioactive Waste Management Complex for shallow land burial should be provided in this EIS since the data in this EIS suggest Greater than Class C waste.

RESPONSE

This EIS provides in Section A.7.3 of Appendix D to Volume I enough information on the number of shipments of specimens from Naval Reactors Facility and the amounts of radioactivity and other

information related to these shipments to allow an independent analyst to perform calculations of the potential impacts of these shipments. These specimen shipments have been included to support evaluation of possible cumulative impacts even though they are not part of the action evaluated by this EIS.

The statement that Greater than Class C waste is sent to the Radioactive Waste Management Complex at INEL for shallow land burial is inaccurate. Specimens which contain nuclear fuel are not sent to the Radioactive Waste Management Complex at INEL. Only those specimens which meet the Radioactive Waste Management Complex acceptance criteria are ultimately sent to that facility for disposal. Greater than Class C radioactive waste from Navy operations has been held at the Naval Reactors Facility and will continue to be held there until a site for ultimate disposition is designated.

08.05.09 (003) Waste Characterization and Management

COMMENT

The Navy should consider the material removed from the ends of fuel modules during examination at the Expanded Core Facility as spent nuclear fuel.

RESPONSE

This EIS relies on definitions and classifications of nuclear materials set forth in the Nuclear Waste Policy Act, as amended, and regulations issued by the Environmental Protection Agency (40 CFR 261) and the Nuclear Regulatory Commission (10 CFR 61). The categories set forth in these regulations are "Spent Nuclear Fuel", "High Level Waste", "Transuranic Waste", "Low-Level Waste", "Low-Level Mixed Waste", "Greater than Class C Waste", and "Hazardous Waste".

Volume 1, Appendix H sets forth the definition of spent nuclear fuel used in this EIS as "fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated." The definition of High-Level Waste in Appendix H to Volume 1 is "highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced from reprocessing and a solid waste derived from the liquid....". Transuranic Waste is defined as "waste containing more than 100 nanoCuries of alpha-emitting transuranic isotopes, with half-lives greater than 20 years, per gram of waste,". Low-Level Waste is defined as "waste that contains radioactivity and is not classified as high-level waste, transuranic waste, or spent nuclear fuel".

The ends of the fuel modules removed from Naval spent nuclear fuel modules at the Expanded Core Facility are structural material which provides support and directs the flow of cooling water during

operation. This structural material is removed by cutting through portions of the fuel modules which contain no fuel. The material removed from the ends of the fuel modules does not contain any fuel or fission products from fuel and therefore cannot be considered "spent nuclear fuel". They do not contain transuranic elements or fission products and thus cannot be considered High Level Waste or Transuranic Waste. The amounts of radioactivity in the end boxes cause them to be classified as Low-Level Waste. Consequently the material removed from the ends of the modules at the Expanded Core Facility is categorized as Low-Level Waste due to the amount of radioactivity present in it. The disposal of this structural material at the Radioactive Waste Management Complex at INEL is accomplished in accordance with all applicable regulations. As indicated in Section 5.2.15 of Appendix D, Part A of Vol. I of the EIS, the amount of Low-Level Waste generated each year at the Expanded Core Facility is 425 cubic meters. The radioactive isotopes which represent 99% of the activity in the material removed from the ends of fuel modules are identified in the following table:

ISOTOPE	HALF LIFE
Fe ⁵⁵	2.73 years
Co ⁶⁰	5.271 years
Ni ⁵⁹	76000 years
Ni ⁶³	100 years

A description of the composition of material removed from the ends of fuel modules during examination has been added to Volume 1, Appendix D, Attachment B of the EIS.

08.05.09 (004) Waste Characterization and Management

COMMENT

The impacts of the waste generated at ECF are understated and the facts, as presented, could be misleading.

RESPONSE

Section 5.2.15 of Appendix D, Part A of Vol. I of the EIS states that the amount of Low-Level Waste generated each year at ECF is approximately 425 cubic meters. The primary constituent of this Low-Level waste is the material removed from the ends of Naval spent nuclear fuel modules at ECF to permit access for visual examination of the spent fuel internal surfaces. These ends of the fuel modules are structural material which provide support and direct the flow of cooling water during operation. This structural material is removed by cutting through portions of the fuel modules which contain no fuel and the cutting process does not expose nuclear fuel, leaving it completely encased in zirconium.

The structural material removed from the modules does not contain any fuel or fission products from fuel and therefore is not "spent nuclear fuel". It does not contain transuranic elements or fission products and thus is not High Level Waste or Transuranic Waste. The amounts of radioactivity in the material removed from the ends of the Naval spent nuclear fuel modules allow them to be classified as Low-Level Waste. Their disposal at the Radioactive Waste Management Complex at INEL is accomplished in accordance with all applicable regulations. The radioactive isotopes which represent 99% of the activity in the end boxes removed from fuel modules are identified in the following table:

ISOTOPES CONTAINED IN CORE STRUCTURALS		
ISOTOPE	HALF LIFE	PRIMARY MODE OF DECAY
Fe ⁵⁵	2.73 years	Electron Capture (x-ray)
Co ⁶⁰	5.271 years	Beta & Gamma
Ni ⁵⁹	76000 years	Electron Capture
Ni ⁶³	100 years	Beta

A description of the composition of the material removed from the ends of Naval spent nuclear fuel modules during examination has been added to Volume 1, Appendix D of the EIS.

The analyses performed in the EIS include all phases of spent nuclear fuel management at INEL, including generation, handling, and disposal or storage of Low-Level Waste. The conclusion from these analyses is that the normal operations associated with the management of spent nuclear fuel at INEL result in only very small exposures to humans and the environment. Consequently, the radioactivity associated with Low-Level Waste is managed and disposed of under stringent controls so that the environmental impacts are very small.

08.05.09 (005) Waste Characterization and Management

COMMENT

According to the commentor, this EIS fails to include information on all radioactive waste streams from the Expanded Core Facility at INEL using Nuclear Regulatory Commission classifications.

RESPONSE

This EIS does characterize all radioactive waste streams from Naval spent nuclear fuel management at the Expanded Core Facility. Volume 1, Appendix D, section 5.2.15 of the EIS provides a description of

all of the waste streams from the Expanded Core Facility at INEL. Appendix D, section 5.2.15 includes the volumes of low-level radioactive waste and transuranic wastes produced each year and a statement that there is no high-level radioactive waste produced at the Expanded Core Facility. This covers the applicable radioactive waste categories defined by the Nuclear Regulatory Commission. Section 5.2.15 also describes how all of the waste streams from the Expanded Core Facility would be affected by each of the alternatives considered.

The analyses performed in the EIS include all phases of spent nuclear fuel management at INEL, including generation, handling, and disposal or storage of low-level waste. The conclusion from these analyses is that the normal operations associated with the management of spent nuclear fuel at INEL result in only very small exposures to humans and the environment. Consequently, although the radioactivity associated with low-level waste is managed and disposed of under all applicable regulations and stringent controls so that the environmental impacts are very small.

A description of the composition of the material removed from the ends of Naval spent nuclear fuel modules during examination has been added to Volume I, Appendix D of the EIS in response to a number of public comments. This information may help to understand the nature of the low-level waste produced at the Expanded Core Facility and why it classified as low-level waste.

8.5.10 Transportation Analyses

08.05.10 (001) Transportation Analyses

COMMENT

The range of dose rates at 1 meter from loaded Naval spent nuclear fuel shipping containers should be provided in the EIS.

RESPONSE

This EIS states in Section I-4.1 of Appendix I to Volume 1 (page I-45 of the Draft EIS) that "a dose rate of 1 millirem per hour at one meter (3.28 feet) was used for Naval-type SNF shipments, based on measured dose rate from previous Naval SNF shipments." The value of 1 millirem per hour at one meter was obtained from the values measured from navy shipments in the past. As described in Section A.7.1.1.2 of Appendix D to Volume I, the dose rate values used in the calculations for Naval spent nuclear fuel shipments ranged from 0.1 to 1.8 millirem per hour at one meter.

For fuel types which had been shipped in the past, the values used in the analyses were calculated by averaging the measured values. For the fuel types which had not been shipped in the past, the exposure rates from the applicable Safety Analysis Reports for Packaging were used, with suitable adjustment to reflect a lower level of uncertainty than is used in such documents. This lower level of uncertainty is justified by the extensive measurements of exposure levels from past shipments. To verify that this technique reliably produced values which would not be exceeded in practice, it was checked by adjusting the values used in the Safety Analysis Reports for Packaging for spent fuel types already shipped in the same manner and comparing them to measurements. In all cases, the estimated values exceeded the measured values so this method is conservative.

Department of Transportation regulation for shipment of spent nuclear fuel limit the exposure rate at one meter from the surface of the shipping container to 10 millirem per hour for any shipment, but, as discussed above, the exposure rates for Naval spent nuclear fuel shipments are well below this level.

08.05.10 (002) Transportation Analyses

COMMENT

A commentor did not understand how the consequences of an accident involving shipment of low-level radioactive waste could be considered to be insignificant.

RESPONSE

This EIS states in Section A.5 of Appendix D to Volume I that the consequences of an accident involving shipment of low-level radioactive waste from shipyards would be insignificant compared to the accidents analyzed for spent nuclear fuel. The probability of an accident and the severity (impact velocity, damage, etc.) of an accident involving radioactive waste would be similar to spent nuclear fuel, but the amount of radioactive material which might be available for release would be many tens of times less than the already small amount of fuel available for release from spent nuclear fuel. Therefore, the consequences would be insignificant compared to those of spent nuclear fuel.

Sections A.8.3 and A.8.4 of Appendix D provide the risk and maximum consequences of postulated transportation accidents involving spent nuclear fuel and the risks for all of the alternatives considered are very small. The risks associated with a low-level radioactive waste shipment would be even smaller than these very low risks.

08.05.10 (003) Transportation Analyses

COMMENT

A commentor expressed concern about the nature of the radionuclides which might be released in an accident involving Naval spent nuclear fuel.

RESPONSE

Table A-14 in Appendix D to Volume 1 of this EIS provides the list of isotopes and amount of activity for each isotope which would be released in an accident from an average shipment of Naval spent nuclear fuel. The two columns on the left in Table A-14 list the radionuclides and amount of radioactivity which might be released by the most severe accidents which might cause both radioactive nuclides produced directly from fission of atoms and radionuclides in corrosion products to be released. The two columns on the right list the radionuclides and activities for the less severe accidents which could only cause radioactive material present in the corrosion on the outside of the fuel elements to be released.

Radioactive material in the very thin film of corrosion formed on the exterior of fuel elements can be released by the shock of an accident such as a collision. The materials referred to as "corrosion products" are not corrosive. The radionuclides resulting directly from fission of atoms occur only inside the fuel elements and are completely contained by the cladding of the fuel. They could only be released if the forces of the accident are severe enough to break the fuel elements open or to melt.

The radionuclides listed could only be released as a result of an accident during transportation and therefore they would not increase exponentially with the storage of shipments. The radionuclides which might be released during a postulated accident while Naval spent nuclear fuel is in storage at a Navy site are addressed in detail in Attachment F of Appendix D to Volume 1.

08.05.10 (004) Transportation Analyses

COMMENT

The term "person-rem" would be more appropriate than "rem" in some locations in Attachment A to Appendix D of Volume 1.

RESPONSE

The text in the locations identified has been changed to use "person-rem" in all locations referring to estimated dose to the general population. A check of the remainder of Attachment A to Appendix D of Volume 1 has been conducted to assure that the use of this term is consistent throughout.

08.05.10 (005) Transportation Analyses

COMMENT

More detail concerning the neutron reduction factor used in the Naval spent nuclear fuel shipment calculations used for the analyses in this EIS should be provided.

RESPONSE

Section A.7.1.1.9 of Appendix D to Volume I of this EIS states that a more realistic neutron reduction factor was used for Naval spent nuclear fuel instead of the factor supplied in the RADTRAN4 computer program. This more realistic factor used the same basic equation used in RADTRAN 4 (Section 4.2.2 of the RADTRAN 4 Technical Manual, Volume II [Neuhauser and Kanipe 1993]). The basic equation is:

$$DR_n(r) = K \times e^{-\mu x} \times (1 + a_1 r + a_2 r^2 + a_3 r^3 + a_4 r^4) / r^2$$

where:

$DR_n(r)$	= neutron dose rate at distance r
r	= distance from source (m)
K	= constant
μ	= linear attenuation coefficient (m^{-1})
a_1, a_2, a_3, a_4	= dimensionless coefficients

The difference is that a value of 2.0×10^{-10} was used for a_4 in lieu of 0. This was done because it reproduced the results of measurements of the neutron exposure from Naval spent nuclear fuel shipments and yielded a higher exposure from each shipment than the standard value. Attachment A to Appendix D of Volume I has been revised to provide this detail.

08.05.10 (006) Transportation Analyses

COMMENT

The Navy plans to make a few more shipments of Naval spent nuclear fuel than stated in the Draft EIS.

RESPONSE

The number of planned shipments has not changed from those presented in the Draft EIS. The number of shipments of Naval spent nuclear fuel identified in this EIS represent the best available information based on long-term military force estimates during the next 40 years.

The commentor referred to information provided to him separately by the Naval Nuclear Propulsion Program that stated that the number of shipments of Naval spent nuclear fuel over the past forty years was revised to 599 instead of the 584 identified in Appendix D to Volume I. This change occurred as a

result of reviews of records of historic shipments, where one shipment sometimes included more than one container, and updates necessary to reflect all shipments expected to be completed by June 1995. The EIS has been revised to reflect 599 shipments of Naval spent nuclear fuel in the years prior to the action considered in this EIS. This change results in less than a 1 percent change in the total calculated exposure to the public and the results in the EIS have been changed accordingly. However, the change does not affect any of the comparison or analyses of environmental impacts provided in the EIS.

08.05.10 (007) Transportation Analyses

COMMENT

The text in Section A.7.1.2.4 and the entries in Table A-13 in Appendix D to Volume I may be inconsistent.

RESPONSE

Section A.7.1.2.4 of Appendix D to Volume 1 provides release fractions to be used in the calculation of the consequences and risks for postulated transportation accidents involving Naval spent nuclear fuel. This section states that "from the modal study, the release fraction in lower left region R(1,1) is zero for the risk evaluation". Later it states "For the maximum consequence evaluation, 1% of the corrosion products might be released for the lower left region, R(1,1)". Table A-13 provides a summary of the cask release fractions to be used for risk analyses so the value of 0.0 as described in the text and above is correct.

The document which describes the methodology used in the analyses of postulated accidents for Naval spent nuclear fuel shipments provides more details on the use of the risk matrix and other information on the application of the analytical technique. See U.S. Nuclear Regulatory Commission publication NUREG/CR-4829, Shipping Container Response to Severe Highway and Railway Accident Conditions, UCID-20733, prepared by Lawrence Livermore National Laboratory for the Division of Reactor System Safety and issued by the Office of Nuclear Regulatory Research, Washington, D.C., in 1987 and referenced in Attachment A to Appendix D.

08.05.10 (008) Transportation Analyses

COMMENT

The Navy has stated that approximately 580 to 600 shipments of Naval spent nuclear fuel to INEL would be required under the alternatives which would continue inspection of Naval spent nuclear fuel at the existing Expanded Core Facility, but section A.7.2 of Attachment A to Appendix D to Volume I (page A-57) appears to indicate that 728 shipments would be required.

RESPONSE

There is no contradiction between the number of shipments used by the Navy in the EIS or in public meetings or reviews.

Under the alternatives which would continue inspection of Naval spent nuclear fuel at the existing Expanded Core Facility, approximately 600 container shipments would be needed over the forty year period to move the Naval spent nuclear fuel from shipyards and Navy prototype reactors to the Expanded Core Facility at INEL. These shipments would travel by the commercial rail system (with the exception of a few ocean shipments from Pearl Harbor Naval Shipyard to Mainland, whereupon rail transport would be used, and a few miles traveled overland by a limited number of shipments of prototype spent nuclear fuel to reach a railhead). Section A.7.1 provides a discussion of the detailed basis for this number of shipments.

Section A.7.2 provides information concerning the transfer, within the boundaries of the INEL site, of Naval spent nuclear fuel from the Expanded Core Facility to the DOE storage facility at INEL. These short transfers (less than 5 miles, one way) would use roads not accessible to the general public. These shipments were included in the EIS to provide a complete evaluation of the possible impacts from all aspects of movement of Naval spent nuclear fuel. It is planned that all alternatives which would relocate the examination of Naval spent nuclear fuel to other DOE sites would also involve similar transfers conducted entirely within the boundaries of the new site.

08.05.10 (009) Transportation Analyses**COMMENT**

The EIS states that Norfolk Naval Shipyard is about 10 miles from Newport News Shipbuilding, but the rail distance between the two facilities is 250 miles. A commentor questioned whether this information is correct.

RESPONSE

The information on the rail distance between Newport News and Norfolk is correct. Norfolk Naval Shipyard and Newport News Shipbuilding and Drydock Company are on opposite sides of the James River, about ten miles apart, but the two locations have no direct rail connection. Rail traffic from Newport News must be routed through Richmond, Virginia, Petersburg, Virginia, and a portion of North Carolina in order to reach Norfolk. The total distance traveled by a Naval spent nuclear fuel shipment would be 251 miles and this value was used in the analyses performed for this EIS.

08.05.10 (010) Transportation Analyses**COMMENT**

The railroad tracks may not be in good condition to carry spent nuclear fuel.

RESPONSE

The requirements for railroad track inspections and the standards for track condition and safety are established by the Federal Railroad Administration, a part of the Department of Transportation, and are set forth in federal regulations (49 CFR 213). In advance of each shipment of Naval spent nuclear fuel, the Navy provides railroad companies who will move the Naval spent nuclear fuel with the number of railcars and the weight of each railcar. The railroad companies ensure that locomotives, tracks, and bridges are capable of accommodating the shipment and completing it safely.

Naval spent nuclear fuel has been shipped from the various Navy sites by rail for 38 years without any release of radioactive material. Nevertheless, as described in Section A.4.1.4 of Appendix D to Volume 1 of this EIS, each shipment of Naval spent nuclear fuel is accompanied by escorts who remain in contact with headquarters. In the event of an emergency, state and federal resources would be quickly summoned to stabilize the situation. Moreover, Naval spent nuclear fuel is shipped in large, rugged, certified shipping containers which are designed to withstand accidents which might occur during shipment. Section A.4.1 of Appendix D provides descriptions and photographs of the shipping containers used for Naval spent nuclear fuel.

08.05.10 (011) Transportation Analyses**COMMENT**

The commentor states that DOE presents no information on the characteristics of the SPAN4 computer code or the value in selecting it.

RESPONSE

The SPAN4 computer code was developed as an analysis tool specifically suited to the unique characteristics of Naval SNF, therefore providing conservative yet more realistic values of the transport index to exposure rate conversion factors presented in Volume 1, Appendix D, Attachment A, Table A-16. Volume 1, Appendix D, Attachment F, section F.1.3.6 provides additional discussion on the SPAN 4 computer code.

8.5.11 Costs

08.05.11 (001) Costs

COMMENT

The costs of Naval spent nuclear fuel management could be very high.

RESPONSE

The costs associated with each alternative for the management of Naval spent nuclear fuel are provided in Appendix D of this EIS in Section 3.7.4 (See Table 3.8) and in Attachment D (See Section D.1.6). The costs to the Navy for the alternatives considered range between \$1.5 Billion and about \$6 Billion for 40 years.

08.05.11 (002) Costs

COMMENT

The costs of Naval spent nuclear fuel management at INEL should include the costs of replacing the existing Expended Core Facility.

RESPONSE

The Expended Core Facility at INEL is a modern facility which has been continuously upgraded and expanded during its lifetime. It meets all the requirements for accomplishment of its mission and for protection of human safety and the environment. Engineering evaluation of the facility and its structures has shown that it possesses more than adequate strength for earthquakes which might be expected at its location. A full engineering evaluation completed in 1994 showed that, even though the initial portions of the facility were constructed in the 1950's, the entire facility meets the current seismic requirements. It has been well-maintained, it is not deteriorating (please see the photographs in Appendix D, Attachment B), and it has adequate capacity for the foreseeable workload throughout the period covered by this EIS. No need to replace the Expended Core Facility is foreseen for the period covered by this EIS, so the costs of replacement have not been included.

08.05.11 (003) Costs

COMMENT

The Barnwell Nuclear Fuel Plant adjacent to the Savannah River Site could be modified to manage Naval spent nuclear fuel as an alternative to the Expended Core Facility at INEL.

RESPONSE

It is correct that management of Naval spent nuclear fuel at the Barnwell Nuclear Fuel Plant appears to be possible without large impacts on the environment. The use of the Barnwell Nuclear Fuel Plant to

provide capabilities for Naval spent nuclear fuel management similar to those at the Expended Core Facility at INEL is discussed in Chapter 3 of Appendix D to Volume 1. This discussion includes the impacts associated with the use of this facility for management of Naval spent nuclear fuel (Section 3.7.4). The Barnwell Nuclear Fuel Plant is included in Chapter 4, Affected Environment (Section 4.3), Chapter 5, Environmental Consequences (Section 5.3). The results of analyses of normal operations and accidents the at facility are included with the results for the Savannah River Site in Attachment F (Sections F.1.4.1 and F.1.4.2) and are presented explicitly where they differ appreciably from the results for a Naval spent nuclear fuel examination facility located on the Savannah River Site proper.

A brief description of the modifications needed to duplicate capabilities provided by the Expended Core Facility at INEL is presented in Section E.2 of Appendix D to Volume 1. This description was intended to be sufficient for the purposes of evaluating environmental impacts for this EIS, but additional detailed engineering work would be needed to determine the proper course of action if an alternative involving relocation of Naval spent nuclear fuel management to the Savannah River Site were to be selected. The costs associated with use of this facility for Naval spent nuclear fuel management are included in the discussion in Section 3.7.4 of Appendix D, with the conclusion that, while close to \$800 million would be needed to modify the facility, additional funds would be needed to buy it from the current owners.

08.05.11 (004) Costs

COMMENT

The costs for the ultimate disposition of Naval spent nuclear fuel should be included in the federal budget.

RESPONSE

Since the final method for ultimate disposition of Naval spent nuclear fuel or any of the other nuclear fuel under DOE cognizance has not been selected, the costs have not been included in the federal budget process. The costs associated with the method finally selected for the ultimate disposition of Naval spent nuclear fuel will be incorporated into the federal budget at the appropriate time in accordance with established federal budgeting procedures.

08.05.11 (005) Costs

COMMENT

It is doubtful that the Expended Core Facility can be operated economically until the end of the period covered by this EIS, when it would be nearly 80 years old.

RESPONSE

The Expanded Core Facility at INEL has been upgraded many times since its original construction, as needed to provide the capabilities and capacity required by the Naval Nuclear Propulsion Program and to ensure the safety of the people who work there, the people of Idaho, and the environment. As a result, the current facility is safe and capable of fulfilling the Navy's mission. It meets or exceeds current standards for seismic events and radiological protection, even for those portions built in the 1950's.

The costs of operating and maintaining the Expanded Core facility throughout the period of this EIS are provided in Section 3.7 of Appendix D to Volume 1. These costs include future improvements to the facility, based on the assumption that it would need maintenance and modifications on about the same schedule as in the past. There is no reason to arbitrarily retire the facility simply because some number of years have elapsed since its construction.

08.05.11 (006) Costs**COMMENT**

The costs for normal operations and cleanup after accidents at the Pearl Harbor Naval Shipyard would be higher than on the Mainland.

RESPONSE

The costs of constructing and operating a Naval spent nuclear fuel storage area for three types of storage at Navy sites are presented in detail in Attachment D to Appendix D of Volume 1 and summarized in Section 3.7 of Appendix D to Volume 1 and the details are provided in other parts of Appendix D. These cost estimates show that management of Naval spent nuclear fuel at Navy sites would be higher for some operations and lower for others. The important point is that it would not be possible to provide examination of all Naval spent nuclear fuel using only Navy sites. The principal associated with differences in costs is related to the differences between the Navy sites and DOE sites.

The analyses in Volume 1, Appendix D, Section F.1.3.8, for postulated accidents involving Naval spent nuclear fuel storage at Navy sites show that for the worst case potential accident an area of only about 110 acres could be contaminated to the point where radiation doses exceeding the Nuclear Regulatory Commission public limit of 100 millirem per year might result for a person living full time on that land for an entire year. Most of this area would be within shipyard boundaries. Consequently, the area which might be considered for possible cleanup in the most severe case would be very small and localized and, therefore, the cost of cleanup would not be appreciably different at any of the Navy sites considered. It

should be noted that this is the most severe accident; reasonably foreseeable accidents would involve far less area.

Although Naval sites are included in the analysis, the Navy has identified a preferred alternative in Section 3.9 of Appendix D to Volume 1 which would not store Naval spent nuclear fuel at Naval sites. The Navy's preferred alternative would resume the historic, technically sound and safe practice of conducting refueling and defueling of nuclear-powered warships and prototypes as planned, transporting the Naval spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination, and transferring Naval spent nuclear fuel to DOE for storage at that site.

08.05.11 (007) Costs

COMMENT

The costs for dry storage of Naval spent nuclear fuel in immobile casks at Navy sites would be cheaper than storage at INEL if the Multi-Purpose Containers being developed by DOE were used.

RESPONSE

As acknowledged by the commentor, Naval spent nuclear fuel can be safely and securely managed at all of the sites considered in this EIS. The costs of constructing and operating a Naval spent nuclear fuel storage area for three types of storage at Navy sites, as well as costs for other alternatives for management of Naval spent nuclear fuel, are presented in detail in Attachment D to Appendix D of Volume 1 and summarized in Section 3.7 of Appendix D. The costs for dry storage in immobile casks were developed using information from currently available dry storage casks licensed by the Nuclear Regulatory Commission for use with the spent nuclear fuel from commercial reactors. Allowances were included for some additional costs for designing new inserts to hold and cool Naval spent nuclear fuel, which would differ from the inserts used for commercial spent nuclear fuel, and for installation of additional radiation shielding required for storage within the confines of a shipyard. All other costs associated with such storage, such as operating costs, phase-in and facility closure costs, construction of concrete pads, and procurement of equipment needed to load and unload the containers were included.

DOE is currently developing Multi-Purpose Containers which could be used for storage, transportation, and disposal. DOE placed a contract for design of the first Multi-Purpose Containers in March of this year and plans to place the contract for manufacture of the first ones in the middle of 1997. This means that the first Multi-Purpose Container would be available in early 1998 and, even then, the early containers would not be destined for Naval spent nuclear fuel. The licensing of these containers by the Nuclear Regulatory Commission for use in storage of spent nuclear fuel and issue of the Certificate of Compliance for use in shipping are planned to be completed in 1997. The dry storage casks used to

develop the costs reported in Appendix D are currently licensed and in use, making their costs reasonably well-known.

It is possible that the Multi-Purpose Containers could be used for Naval spent nuclear fuel at some time in the future, but they would not be available in time to support a change in the method of managing Naval spent nuclear fuel. These containers are estimated at this early stage of development to cost about \$350,000 to \$430,000 for the 125-ton containers which would be needed for Naval spent nuclear fuel, but some uncertainty in this estimate exists since the containers have not yet been designed or built. Section D.1.3.1 of Appendix D to Volume 1 states that about 290 containers would be needed, depending on the loading of the containers. A special insert for Naval spent nuclear fuel would have to be designed for the Multi-Purpose Containers. Design and separate licensing for this insert would be required. In the end, the costs of using the Multi-Purpose Containers for storage of Naval spent nuclear fuel would be substantially greater than stated in the comment.

When the costs of concrete overpacks required for the Multi-Purpose Containers, any buildings required for this method of storage, and the equipment to load and unload them are included, it is possible, given the uncertainties in costs at this point in their development, that the costs for Multi-Purpose Containers might not be less than those for immobile dry storage provided in the EIS. If in the future, the costs for Multi-Purpose Containers for immobile dry storage were found to be less than those for other methods, they might well be adopted, but the total costs associated with the Multi-Purpose Containers, including design and licensing, and their availability would have to be considered.

It should be remembered that the primary reason the Navy prefers not to store Naval spent nuclear fuel at Navy sites is that full examination of all Naval spent nuclear fuel would not be possible. The principal reason that the Navy prefers an alternative which would resume the historic, technically sound and safe practice of transporting Naval spent nuclear fuel to the Expanded Core Facility at INEL for full inspection and examination and transferring Naval spent nuclear fuel to DOE for storage at that site is that this would allow the continued examination of all Naval spent nuclear fuel at the lowest cost and smallest risk, as stated in this EIS. Examination of all Naval spent nuclear fuel is an important part of the safety program of the Naval Nuclear Propulsion Program which has allowed the nuclear Navy to steam more than 100,000,000 miles and accumulate over 4400 reactor years of operation without a reactor accident or any problem having a significant effect on the environment. Examination of Naval spent nuclear fuel has also provided an important contribution to increasing the lifetime of Navy reactor

cores by a factor of more than 10, reducing the amount of Naval spent nuclear fuel which must be managed.

08.05.11 (008) Costs

COMMENT

The commentor indicates that the Navy downplays the benefits of reduced costs and radiological effects from decreased transportation, and the costs of necessary facility enhancements at INEL by dismissing storage of its spent nuclear fuel at the point of origin due to cost. The Navy has also failed to substantiate the need to examine all of its spent nuclear fuel. It was stated that the Navy is required to provide any cost-benefit analysis that they may have prepared to justify their preference for the cheaper alternative of keeping activities at INEL.

RESPONSE

Appendix D to Volume 1 of the EIS evaluates the environmental impacts of a reasonable range of alternatives for the management of Naval spent nuclear fuel, including the No-Action alternative. As the environmental impacts would be small, there are no clear environmental discriminators between alternatives. The Navy's preferred alternative is justified on the basis of Navy programmatic needs such as full examination of spent nuclear fuel, as well as the relative costs between alternatives [see response to comment 8.5.11.(1)]. The relative cost of transportation is low compared to the costs of on-site management of spent nuclear fuel, as discussed in section 3.3 of Volume 1 (see response to comment 6.7.(1)). The discussion of the Navy's preferred alternative does not dismiss any of the other alternatives evaluated in the EIS.

Section 2.4.1 of Appendix D to Volume 1 of the EIS has been expanded to more fully discuss the need for full inspection of Naval spent nuclear fuel. See also response to comment 8.3.3.(2) in regards to the need for full examination of spent nuclear fuel.

Regarding a cost-benefit analysis, the commentor has specifically cited to 40 CFR 81502.23 in suggesting that a cost-benefit analysis be prepared. A cost-benefit analysis is not generally required by Council on Environmental Quality requirements, but may be used "as an aid in evaluating environmental consequences". Because all evaluated environmental consequences are small and because of the difficulty of developing generally accepted equivalency factors between different types of impacts, e.g., what monetary value should be place upon the loss of 35 acres of sagebrush habitat? DOE and the Navy have not developed a cost-benefit analysis. The range of estimated costs for implementing various alternatives is summarized in Volume 1, section 3.3.6.

8.6 Miscellaneous

08.06 (001) Miscellaneous

COMMENT

Some persons felt that the term "spent nuclear fuel" is misleading because they believe that it means fuel which has no power to destroy or no power to do work.

RESPONSE

The term "spent nuclear fuel" is used in legislation, such as the Nuclear Waste Policy Act of 1982, as amended (42 USC 10101), and in regulations governing nuclear material and work (for example, 40 CFR 191, "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level Waste, and Transuranic Waste", and 10 CFR 53, "Criteria and Procedures for Determining Adequacy of Available Spent Nuclear Fuel Storage Capacity") to define a specific category of nuclear material and specify the manner in which it must be controlled. All three of these examples use the same definition (for example, see 42 USC 10101 (23)) of spent nuclear fuel as "fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing". This category is used to denote fuel which has been used in a reactor and is no longer usable for its original purpose.

This terminology is not intended to convey the impression that such fuel is no longer radioactive or no longer requires careful management. Because of its use as fuel in a reactor, spent nuclear fuel remains highly radioactive. DOE, the Navy, the Nuclear Regulatory Commission, and other organizations have devoted much effort to the proper handling of spent nuclear fuel and protecting human beings and the environment from the effects by ensuring that it is properly managed.

08.06 (002) Miscellaneous

COMMENT

Some persons felt that the term "spent nuclear fuel" is misleading because they believe that spent nuclear fuel should be classified as waste.

RESPONSE

The term "spent nuclear fuel" is used in legislation, such as the Nuclear Waste Policy Act of 1982, as amended (42 USC 10101), and in regulations governing nuclear material and work (for example, 40 CFR 191, "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level Waste, and Transuranic Waste", and 10 CFR 53, "Criteria and Procedures for Determining Adequacy of Available Spent Nuclear Fuel Storage Capacity") to define a specific category

of nuclear material and specify the manner in which it must be controlled. All three of these examples use the same definition (for example, see 42 USC 10101 (23)) of spent nuclear fuel as "fuel that has been withdrawn from a nuclear reactor following irradiation, the constituent elements of which have not been separated by reprocessing". This category is used to denote material which must be handled in accordance with specific procedures and requirements.

This terminology is not intended to mislead or confuse. On the contrary, the category "spent nuclear fuel" should help understanding since it conforms to the terminology commonly used in public forums and technical and regulatory circles to clearly denote the special characteristics, controls, and handling associated with this particular class of material and how spent nuclear fuel differs from other types of radioactive material.

08.06 (003) Miscellaneous

COMMENT

It appears that there is a plan for the same site at Puget Sound Naval Shipyard to be used for a proposed Naval spent nuclear fuel storage facility and for another proposed Navy facility.

RESPONSE

This comment is an erroneous conclusion drawn from a map in the EIS. The map on page D-12 of Volume I Appendix D shows the conceptual location of the interim storage site at Puget Sound Naval shipyard. The designated area in this figure approximates the general location where the interim storage facility would be located. The other facility referred to by the commentor is Puget Sound Naval Shipyard's proposed mixed waste storage building. The spent nuclear fuel storage location would not be sited in the exact same location. However, it is possible that they would be located in close proximity to each other.

08.06 (004) Miscellaneous

COMMENT

Some persons have confused the Navy's Environmental Assessment on the Short-Term Storage of Naval Spent Fuel with this Environmental Impact Statement, which deals with the management of Naval and other DOE spent nuclear fuel until a method for ultimate disposition can be implemented.

RESPONSE

Two NEPA documents considering aspects of Naval spent nuclear fuel management exist: one is this EIS and the other is the Navy's Environmental Assessment on the Short-Term Storage of Naval Spent Fuel.

A 1993 ruling by the Federal District Court for Idaho limited the number of shipments of Naval spent nuclear fuel which could be sent to INEL for examination until this EIS is completed and a Record of Decision on the storage of DOE spent nuclear fuel is issued in June 1995. This meant that safe storage of some Naval spent nuclear fuel had to be accomplished by means other than shipment to INEL during the period from the time of the court's order until the Record of Decision is issued. Therefore, in accordance with the requirements of NEPA, and as ordered by the Idaho court, an Environmental Assessment was prepared to evaluate the alternatives for accomplishing safe storage during the brief period and to identify and assess the impacts associated with each alternative considered. This document is the Navy's Environmental Assessment on the Short- Term Storage of Naval Spent Fuel.

An Environmental Assessment was prepared because the impacts of the preferred alternative for this short period of storage were found to be small, as documented in the Finding of No Significant Impact issued early in 1994 after a period of public review. The alternatives considered in the Environmental Assessment were necessarily limited to those which could be implemented immediately and would be used only through June 1995. The Environmental Assessment chose a No Action alternative which used storage in certified shipping containers at the sites which would continue to perform servicing of Naval reactors through June 1995 as the best means of safely managing Naval spent nuclear fuel during the time needed for completion of this EIS. The evaluation included Newport News Shipbuilding and the facility used at that location for servicing nuclear-powered aircraft carriers.

This Environmental Impact Statement considers alternatives for managing all DOE spent nuclear fuel, including Naval spent nuclear fuel, until a method for ultimate disposition can be implemented. It covers a period which begins after its completion and the issue of the associated Record of Decision in June 1995. The period considered extends 40 years from June 1995 because of the time needed to select and implement a method for final disposition of the spent nuclear fuel. This EIS considers a wider range of alternatives than the Navy's Environmental Assessment because more time would be available to construct new facilities or implement other long-term actions and because more types of spent nuclear fuel needed to be considered.

The conclusions concerning the preferred alternative in its Environmental Assessment and this EIS naturally differ because of the different periods of time available for beginning to use the alternatives for management of Naval spent nuclear fuel, the amounts of spent nuclear fuel, the long-term effect on the Navy's mission, and the effects on the environment considered in the two documents. In both cases,

management of Naval spent nuclear fuel can be accomplished safely and with very small environmental impacts.

Some of the differences which result from the different time periods considered in the two documents have been noted by commentors. For example, the longer period covered in this EIS required the Navy to rule out storage at Newport News Shipbuilding and Drydock Company because it is a private facility might have to be purchased by the Federal government and currently plays an important role in the Navy's infrastructure. For the same reason, management of Naval spent nuclear fuel in water pools at Navy sites is evaluated in this EIS but was not in the Environmental Assessment because there was not enough time to construct or modify (as in the case of the water pool at Puget Sound Naval Shipyard) the facilities. Similarly, no modifications to the certified shipping containers were needed for storage during the interim period ending in June 1995, but if an alternative involving management of Naval spent nuclear fuel in shipping containers were to be selected for the longer period covered by the EIS, construction or modification of facilities at Navy sites would have to be completed. Finally, examination of Naval spent nuclear fuel can continue until June 1995 due to an existing backlog of fuel so the impact on the Navy's mission was not a determining factor in the Environmental Assessment.

08.06 (005) Miscellaneous

COMMENT

Some persons identified differences between the results of analyses presented in the Navy's Environmental Assessment on the Short-Term Storage of Naval Spent Fuel and the results of the analyses reported in this Environmental Impact Statement, which deals with the management of Naval and other DOE spent nuclear fuel until a method for ultimate disposition can be implemented.

RESPONSE

Two NEPA documents evaluating the environmental impacts of alternatives for managing Naval spent nuclear fuel exist: one is this EIS and the other is the Navy's Environmental Assessment on the Short-Term Storage of Naval Spent Fuel. As identified by the commentor, there are some differences in the results of the analyses performed for these separate documents. This occurs because the Environmental Assessment covers the period from the end of 1993 to June 1, 1995 and this EIS covers the period beginning June 1, 1995 and extending up to 40 years into the future. As a result, substantially less Naval spent nuclear fuel is considered in the Environmental Assessment than in this EIS and the cores from newer, larger nuclear-powered warships are not included in the Environmental Assessment since they will not be removed from ships until well after June 1, 1995.

For example, as cited by the commentor, the probability that an airplane might crash into a shipping container stored at Pearl Harbor Naval Shipyard is smaller for the Environmental Assessment than for this EIS because there are fewer containers (6 by June 1, 1995, versus 42 by the year 2035). The smaller number of containers and the smaller area covered by the containers would reduce the chances that an airplane could strike a container. The dependence of the probability on the effective area of the target is described in Section F.3.2 of Attachment F to Appendix D to Volume 1 of the EIS.

Similarly, as pointed out by the commentor, the calculations of fatalities if an airplane were to strike a container produce fewer potential deaths in the Environmental Assessment than in this EIS. This is because the amounts of radioactivity involved in the hypothetical accidents in the Environmental Assessment were based on storage of smaller cores from earlier generation submarines which would be removed from ships prior to June 1, 1995. The similar calculations in this EIS are based on the largest cores which might be stored at each location during the next 40 years.

08.06 (006) Miscellaneous

COMMENT

Information on the quantities and types of Naval spent nuclear fuel stored at the Expanded Core Facility should be included in this EIS.

RESPONSE

Naval spent nuclear fuel is not stored at the Expanded Core Facility. As described in Section B.2.4, some components from the first Naval spent nuclear fuel modules, or from modules which show the most pronounced effects of use, for designs currently in the fleet are retained in the water pools at the Expanded Core Facility for assisting in diagnosis of any problem which may occur. However, as the various fuel design types are replaced in fleet service, the fuel components related to the fuel design being retired are removed from the library and transferred to ICPP. Although these components do not constitute a large amount of spent nuclear fuel, they are included in the analyses in this EIS.

08.06 (007) Miscellaneous

COMMENT

A commentor concluded that data reported in the EIS as being used in analyses were the results of the analyses.

RESPONSE

The commentor misinterpreted information provided in the EIS, concluding that data used in analyses were results of the analyses. The commentor apparently thought the number of residents per square mile

in rural, suburban, and urban localities was the number of potential fatalities which might result from an accident involving shipment of Naval spent nuclear fuel. The number of residents per square mile in rural, suburban, and urban localities was used to calculate the number of people living along transportation routes. This misinterpretation caused the commentor to conclude that the risks associated with transportation of Naval spent nuclear fuel would be much higher than they actually are.

Section A.7 provides detailed descriptions of the input values used in the analyses of the shipment of Naval spent nuclear fuel in order to allow independent individuals or groups to evaluate or even perform their own calculations. Section A.7.1.2.9 shows the number of people per square mile for urban, suburban, and rural areas along transportation routes. These are the numbers cited by the commentor.

The results of the analyses of risks for Naval spent nuclear fuel shipments show that less than one fatality would be caused by transportation accidents or routine operations under any of the alternatives considered in this EIS. These results are tabulated in Section A.8.

08.06 (008) Miscellaneous

COMMENT

The commentor thought that the Navy stated in Volume I, Appendix D, Section 4.1.1.7.3, page 4.1.1-12, of the Draft EIS that there are no radioactive airborne emissions from operations at Puget Sound Naval Shipyard and questioned the accuracy of such a statement.

RESPONSE

The commentor misinterpreted the information presented in Volume I, Appendix D, Section 4.1.1.7.3, page 4.1.1-12 concerning radioactive airborne emissions at Puget Sound Naval Shipyard. The commentor missed a key word in the first sentence in Section 4.1.1.7.3 which states that "Radiological facilities at all Naval shipyards are designed to ensure that there are no uncontrolled discharges of radioactivity in airborne exhausts." This section and Section F.1.4.1 in Attachment F present the results of analyses based the radioactive releases published in Naval Nuclear Propulsion Program Report NT-93-1, which is available to the public. The specific airborne releases used in the analyses for Puget Sound Naval Shipyard are listed in Tables F.1.4.1.1-1 and F.1.4.1.1-2 on pages F-50 and F-52 of Attachment F.

As stated in Section 4.1.1.7.3, the results of the analyses show that emissions of radionuclides from each shipyard result in an effective dose equivalent of less than 0.1 millirem per year to any member of the general public, which is 1% of the Clean Air Act standard promulgated by the Environmental Protection

Agency in 40 CFR 61, Subparts H and I. The analyses demonstrate that the risks associated with any of the alternatives for management of Naval spent nuclear fuel are very small.

08.06 (009) Miscellaneous

COMMENT

A commentor stated that impact analyses for long term storage of spent nuclear fuel at the Expanded Core Facility were not present in the EIS.

RESPONSE

Long-term storage of spent nuclear fuel at the Expanded Core Facility is not an alternative considered in this EIS. Some alternatives result in the Expanded Core Facility being shut down and others result in the Expanded Core Facility continuing spent nuclear fuel examinations. There are no alternatives which use the Expanded Core Facility as a storage facility. In all alternatives, Naval spent nuclear fuel would be shipped to either the Idaho Chemical Processing Plant at INEL or some other site after examination is completed. The sole exception is the small amount of library storage of Naval reactor components, which is covered under the impact analyses for fuel examination provided in this EIS.

Storage of spent nuclear fuel in water pools at the Expanded Core Facility would effectively preclude examination of Naval spent nuclear fuel at that facility because storage would use up the space in the water pool needed for machinery and examination equipment. This would require the construction of new facilities for the examination of Naval spent nuclear fuel or the loss of the ability to perform examinations of Naval spent nuclear fuel. The impact on the Navy's mission that would result from the loss of the ability to examine Naval spent nuclear fuel is described in Chapter 3 of this EIS.

Analyses of the impacts associated with storage of the Naval spent nuclear fuel at the DOE sites are included in the appendices to the EIS for each site. For example, Section 5 of Volume 1, Appendix B, includes the impact of storing Naval spent nuclear fuel in water pools at INEL.

Attachment F to Appendix D, Section F.1.4.1.4, does present the results of analyses of the impacts of performing spent nuclear fuel examination at the Expanded Core Facility. In addition, the impacts of spent fuel examination at all of the DOE sites and Puget Sound Naval Shipyard and the impacts of water pool storage at the Naval shipyard sites are presented. Results of analyses of the impacts for dry storage at all of the Navy sites considered in this EIS are also provided. These results are shown in Section F.1.4.1.5 of Attachment F. For INEL analysis, a site near the Expanded Core Facility at the Naval Reactors Facility was selected.

08.06 (010) Miscellaneous

COMMENT

The commentor requested clarification of information in the EIS which presents the impact of facility accidents on close-in workers.

RESPONSE

The results of an evaluation of the impact to close-in workers involved in Naval spent nuclear fuel management that might occur due to the various radiological accidents postulated in spent nuclear fuel handling and storage are presented in Section F.1.4.3 of Appendix D to Volume of this EIS. Section F.1.4.3.2.2 provides information on the effects of a hypothetical airplane crash into the dry storage area. The commentor asked whether the statements in this section are intended to apply to people involved in extinguishing the fire associated with the postulated crash.

As stated in Section F.1.4.3, the evaluation in this section includes workers at the spent nuclear fuel management site working with the fuel or working very close to the scene of postulated accidents. This is contrasted with the worker located 100 meters from the radioactive material release point, defined in Section F.1.3.2, for which exposures have been calculated and presented throughout Appendix D for normal operations and postulated facility accidents. Discussions of emergency preparedness training and exercises and the bases for calculating individual exposure times are presented in Section F.1.3.9.

08.06 (011) Miscellaneous

COMMENT

A commentor thought that the water pool at Puget Sound Naval Shipyard was identified in Volume 1 of this EIS as not in use but the commentor had heard that it was in use.

RESPONSE

Section I.1.2.4 of Volume 1 of this EIS (page 1-11 of the Draft EIS) states that an existing water pool facility, constructed to support the refueling of nuclear-powered aircraft carriers, is located within the industrial zone of the Puget Sound Naval Shipyard. This section further states that, to date, the facility has been used for refueling equipment demonstrations and testing. The facility has not been used for aircraft carrier servicing work.

08.06 (013) Miscellaneous

COMMENT

A commentor identified what appeared to be an inconsistency in the peak ground acceleration value reported for ECF. A value of 0.35g is quoted on page D-32 of Volume I, Appendix D, Part B for the Water Pit Facility and a value of 0.24g is quoted on page F-73 of Appendix D.

RESPONSE

There is no inconsistency in the peak ground acceleration data provided in Appendix D to Volume I. The 0.35g peak ground acceleration value provided on page D-32 refers to the Puget Sound Water Pit Facility at Puget Sound Naval Ship yard. The 0.24g peak ground acceleration quoted on page F-73 refers to the Expanded Core Facility at INEL.

08.06 (014) Miscellaneous

COMMENT

A commentor requested that the EIS identify whether other modes of transportation besides rail have been used to ship Naval spent nuclear fuel to INEL.

RESPONSE

The EIS presents detailed descriptions of past and future shipments of Naval spent nuclear fuel in Attachment A to Appendix D of Volume I. Section A.2 of Appendix D provides the desired information on shipment of Naval spent nuclear fuel.

The only method used to ship Naval spent nuclear fuel to INEL in the past and the only method proposed for future shipments is by rail. The only exceptions to this are that Naval spent nuclear fuel from Pearl Harbor Naval Shipyard is transported by ship from Hawaii to Puget Sound Naval Shipyard where the shipping containers are transferred to railcars for the journey to INEL and the use of heavy-lift transporters to move Naval spent nuclear fuel in shipping containers a few miles to the nearest railhead at the Kesselring and Windsor sites.

08.06 (015) Miscellaneous

COMMENT

One commentor stated the water pit facility at Puget Sound Naval Shipyard was to be doubled in size. She expressed this concern due to the proximity of the water pit facility to the city boundary.

RESPONSE

The statement that the water pit is to be doubled in size is incorrect. In Volume I, Appendix D, page D-29, the EIS states that "Expansion of the Water Pit Facility to accommodate simultaneous refueling and

examination operations is undesirable due to the proximity of other shipyard facilities." This is the reason why Puget Sound would no longer have the capability to refuel nuclear-powered aircraft carriers should the Decentralization, Limited Examination alternate be chosen.

08.06 (016) Miscellaneous

COMMENT

One commentor stated that the shipment of radioactive waste from the shipyards had not been included in the EIS.

RESPONSE

Current practices for the management of radioactive waste at each of the shipyards considered in this EIS are described in Sections 4.1.1.14, 4.1.2.14, 4.1.3.14, and 4.1.4.14 of Appendix D to Volume I. The environmental consequences of waste management associated with each alternative for management of Naval spent nuclear fuel are described for each shipyard in Sections 5.1.1.15, 5.1.2.15, 5.1.3.15, and 5.1.4.15 of Appendix D to Volume I.

08.06 (017) Miscellaneous

COMMENT

Environmental Monitoring information from the 1985 EPA survey of Pearl Harbor was misquoted. In addition, there are limitations in the EPA analysis that should make one cautious about drawing strong conclusions.

RESPONSE

The misquotation cited on page 4.1.4-14 of Appendix D to Volume I has been corrected. During editing of the Draft EIS, the word "greatly" was inadvertently substituted for "significantly".

The conclusions in Section 4.1.4.8.3 of Volume 1, Appendix D pertaining to the EPA analyses are a direct quotation from page 11 of the EPA report (with the exception of the inadvertent editing change stated above) titled "Radiological Surveys of the Pearl Harbor Naval Shipyard and Environs" (Callis 1987). The only other discussion in the EIS related to this EPA report directly precedes the statement of the EPA conclusions and states that the purpose of the monitoring performed in the vicinity of Pearl Harbor Naval Shipyard is "to confirm that the general public is not affected by operations of Pearl Harbor Naval Shipyard". This statement of purpose has been revised to directly quote the EPA's purpose statement: "The purpose of the survey was to determine if operations related to U.S. Navy nuclear warship activities resulted in releases of radionuclides which could contribute to significant population exposure or contamination of the environment". Consequently, the discussion in the EIS is consistent with the EPA report.

08.06 (018) Miscellaneous

COMMENT

The EIS incorrectly referred to the Environmental Protection Agency regulations in 40 CFR 61, titled "National Emission Standards for Hazardous Air Pollutants", as Nuclear Regulatory Commission regulations.

RESPONSE

Appendix D to Volume I of this EIS was revised to properly identify that 40 CFR 61 is an EPA regulation and more specifically refer to Subpart H of the regulation.

08.06 (019) Miscellaneous

COMMENT

The description for the Kesselring Site in Section 4.1.5 of Appendix D to Volume I states that the land surrounding the site is either wooded or is used for farming. There are also residential areas surrounding the site.

RESPONSE

Section 4.1.5.2 of Appendix D to Volume 1 states that "most of the land surrounding the Site is wooded or used for farming" and this characterization is correct. The site is not surrounded by residences, but there are many residences in the area. The characterization was not intended to imply that there were no residences in the vicinity, so Section 4.1.5.2 of Appendix D to Volume 1 has been revised to add a statement that some of the land is used for residential purposes.

08.06 (020) Miscellaneous

COMMENT

A commentor stated that she thought that the disposal of reactor compartments removed from decommissioned nuclear-powered Naval vessels at the Hanford Site violates some requirement and barge shipments to Hanford might be hazardous.

RESPONSE

The Naval Nuclear Propulsion Program conducts the shipment and disposal of the reactor compartments from decommissioned Naval nuclear-powered vessels at the Hanford Site in compliance with all applicable safety and environmental regulations. This procedure was evaluated a number of years ago in an earlier Environmental Impact Statement prior to initiation of any shipments. That Environmental Impact Statement demonstrated that the risks and impacts to human health or the environment associated with the shipment and disposal of these reactor compartments are very small.

No Naval spent nuclear fuel is shipped by barge up the Columbia River to the Hanford Site. This issue is beyond the scope of this EIS.

9. MISCELLANEOUS

09 (010) Miscellaneous

COMMENT

The commentor states that secretive practices of DOE and its predecessor agencies have resulted in improper health experimentation on human subjects, inadequate National Environmental Policy Act evaluation of DOE spent nuclear fuel, inadequate identification of Fort St. Vrain Nuclear Regulatory Commission licensed storage, and inadequate characterization of zirconium cladding problems in commercial fuel.

RESPONSE

This EIS considers interim storage of DOE spent nuclear fuel (SNF); thus, health experimentation and possible zirconium cladding problems are not discussed. This EIS does respond to the adequacy of National Environmental Policy Act review for DOE SNF management actions. Volume 1, section 1.1.2 and Volume 2, Appendix C, SNF5 describe storage at Fort St. Vrain.

09 (021) Miscellaneous

COMMENT

The commentor states that the U.S. Public Health Service Agency for Toxic Substance and Disease Registry was asked to review the EIS, but the agency declined comment.

RESPONSE

The U.S. Public Health Service Centers for Disease Control and Prevention did comment on the EIS, and DOE responds to those comments in this document.

9.1 Unrelated Comments

09.01 (003) Unrelated Comments

COMMENT

Commentors reviewed the EIS and have no comments.

RESPONSE

DOE appreciates the reviews.

09.01 (004) Unrelated Comments

COMMENT

Some commentors make statements and others express opinions that require no response from DOE.

RESPONSE

No response is required.

09.01 (007) Unrelated Comments

COMMENT

The commentor requested information on the amount of wastes going to geologic repositories at Yucca Mountain and the Waste Isolation Pilot Plant.

RESPONSE

These geologic repositories have not been opened due to siting, permitting, and policy issues. Thus, no wastes are going to Yucca Mountain or the Waste Isolation Pilot Plant.

09.01 (008) Unrelated Comments

COMMENT

The commentor states that Tennessee should create a local citizen's advisory board through the state's local oversight program.

RESPONSE

This issue is outside the scope of the EIS.

09.01 (010) Unrelated Comments

COMMENT

The reviewer had no comments based on review of the Draft EIS.

RESPONSE

DOE appreciates the review.



APPENDIX A

Responses to Comments by Individuals, Organizations, or Agencies



COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Abbott, Dinah	615	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Abraham, Naomi	370	05.11.03 (026), 08.03.01 (011), 08.05.03 (003), 08.05.06 (005)
Abraham, Naomi	404	08.01 (001)
Acuff, Brian	271	05.12.06 (002)
Adams, Fern	1226	01.01.01.02 (006), 01.01.01.02 (011), 05.12 (001)
Adrian, Jim	324	01.02.03 (002), 08.01 (002), 08.03.05 (006)
Agriculture, U. S. Dept. of	16	See Calverley, Paul H.
Aho, Margaret	559	03.04.01 (002), 03.05 (008), 05.08.01 (014), 05.12 (001), 06.05 (002)
Ahrens, Patti	734	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Ahrens, Peter L.	735	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Aiken, Carol	52	08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.05.07 (001)
Aiken, Carol	368	02.08 (001), 03.08 (007), 08.01 (001), 08.03.05 (001)
Aiken, SC; Chamber of Commerce	638	See Walker, John
Aiken, SC; Chamber of Commerce	641	See Walker, John
Akers, W. H.	1318	01.02.03 (002)
Alban, Daniel L.	467	05.05 (017)
Alban, Susan	466	01.01.01.02 (006)
Albin, Audrey	722	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Alexander, Judith L.	68	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Allen, Bruce	955	03.03 (008), 05.12 (001), 06.04.02 (001), 08.03.01 (005), 08.03.03 (003)
Allen, Donald	1048	01.01.01.01 (008), 03.05 (024), 03.08 (011), 04.05 (018), 05.09 (001), 05.18.04 (002), 06.05 (016), 06.06 (003)
Allen, Pat	1274	01.01.01.01 (004), 08.03.02 (001), 08.04 (013), 08.05.06 (005), 08.05.06 (023), 08.05.07 (004)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Allen, Raymond	1190	01.01.01.02 (011)
Alsdorf, Todd	1180	01.01.02 (007), 01.02.03 (002)
Altier, Leslie	286	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Amber, Dave	427	09.01 (004)
American Friends Service Committee	1119	See Costner, Brian
American Friends Service Committee	402	See McCoy, Nina R.
American Nuclear Society, Idaho Section	1062	See Skinner, Robert
Anderson, Anne M.	917	03.03 (002), 08.01 (001), 08.04 (014), 08.04 (018)
Anderson, Bruce S.	11	08.01 (001), 08.04 (010), 08.04 (011), 08.05.04 (007), 08.05.07 (002)
Anderson, Bruce S.	371	08.03.01 (004), 08.03.01 (012), 08.04 (010), 08.04 (011), 08.04 (012), 08.05.04 (006), 08.05.06 (005), 08.05.07 (002)
Anderson, Bruce S.	393	08.01 (001), 08.04 (010), 08.04 (011), 08.05.04 (007), 08.05.07 (002)
Anderson, Craig P.	917	03.03 (002), 08.01 (001), 08.04 (014), 08.04 (018)
Anderson, Hilary	969	01.01.01.02 (006), 05.10.02 (016)
Anderson, Kristen	598	01.01.01.02 (006), 05.08.01 (014)
Anderson, Kristen	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Andrus, Cecil D.	483	01.01.01.01 (004), 01.02.02 (001), 02.01 (030), 02.03 (004), 02.03 (014), 02.04 (007), 02.04 (014), 02.04 (060), 02.08 (002), 03.01 (002), 03.01 (003), 03.04.01 (007), 04.01 (009), 04.03 (061), 05.05.01 (017), 05.08.01 (014), 05.10.02 (002), 05.10.02 (016), 05.10.02 (017), 05.15 (002), 05.18.04 (002), 06.05 (005), 06.05 (016), 06.09 (008), 07.02.01 (001), 07.04 (004), 08.03.01 (008), 08.03.01 (017)
Andrus, Cecil D.	538	01.01.01.01 (004), 01.02.02 (001), 02.01 (030), 02.03 (005), 02.03 (014), 02.04 (007), 02.04 (014), 02.04 (060), 02.08 (002), 03.01 (002), 03.01 (003), 03.04.01 (007), 04.03 (006), 04.03 (061), 05.05.01 (017), 05.08.01 (014),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Andrus, Cecil D.	538	05.10.01 (009), 05.10.02 (002), 05.10.02 (016), 05.10.02 (017), 05.15 (002), 05.18.04 (002), 06.05 (005), 06.09 (008), 07.02.01 (001), 08.03.01 (017)
Anonymous	4	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Anonymous	294	01.01.01.02 (003), 02.06 (003), 02.06 (016), 05.09 (018), 05.12 (001), 05.12.03 (002), 05.12.06 (002), 05.13 (001), 05.13.04 (001), 06.02 (011)
Anonymous	319	02.07 (001)
Anonymous	454	01.02.03 (002)
Anonymous	484	08.01 (001)
Anonymous	502	08.01 (001)
Anonymous	503	08.04 (010)
Anonymous	568	02.08 (002)
Anonymous	660	01.01.01.02 (011)
Anonymous	865	08.01 (004), 08.01 (005), 08.01 (008), 08.03.03 (005), 08.03.05 (006), 08.04 (005)
Anonymous	920	01.01.01.02 (011)
Anonymous	1352	03.08 (013)
Anthony, George	951	01.01.01.02 (025), 02.04 (005), 03.07 (004), 05.09 (002), 06.06 (003), 08.01 (002)
Antilla, Everett	260	02.06 (001), 03.05 (008), 04.03 (001), 05.12 (001)
Apperson, Jerry	1140	05.12 (001)
Arkoosh, Karen	1133	01.01.01.02 (006), 05.08.01 (014), 05.10.02 (016)
Armstrong, Ted	1156	02.08 (009), 05.08.01 (014), 05.08.01 (041)
Ashley, Reed	628	09.01 (004)
Austrom, Dawn	35	08.04 (010), 08.04 (014)
Austrom, Dawn	128	08.04 (010), 08.04 (014)
Axelrod, Daniel M.	184	03.01 (009), 06.09 (016)
Aylward, John J.	60	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
BNFL Inc.	235	See Meigs, Marilyn F.

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
BNFL Inc.	291	See Meigs, Marilyn F.
BNFL Inc.	300	See Meigs, Marilyn F.
BNFL Inc.	431	See Meigs, Marilyn F.
Babbitt, Maryellen	353	08.01 (001), 08.01 (004), 08.04 (010), 08.04 (013), 08.05.06 (031)
Bachaud, J. D.	327	01.02.01.02 (006)
Baggett, Chrys	1007	01.01.01.01 (004), 01.01.01.01 (022), 01.01.01.01 (029), 01.01.01.02 (008), 01.02 (001), 02.04 (042), 02.08 (039), 04.03 (036), 05.10.02 (002), 05.12 (015), 05.12.06 (002), 05.13.02 (006), 06.05 (002)
Bahl, Susan	1340	08.04 (010)
Bailey, Dana	522	01.01.01.01 (005)
Bailey, William M.	3	04.05 (001), 08.01 (001)
Bainbridge, Winnifred	122	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Bainbridge Communities, Association of	279	See Davison, David I.
Baldocchi, Dennis	1154	01.01.01.01 (010), 01.01.01.02 (011)
Baldwin, Jane	537	01.01.01.02 (006), 05.10.02 (016), 05.11.03 (026), 05.15 (014)
Baldwin, June	1291	01.01.01.02 (006)
Baldwin, Paul	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Baldwin, Paul	298	02.07 (012), 02.08 (045), 03.03 (008)
Ball, Lynn W.	1029	05.06 (013)
Ball, Patricia	993	05.11.03 (014)
Ballard, Carolyn	1367	01.01.01.01 (022), 05.12 (001), 05.18.04 (002)
Banks, Virginia	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Barber, Brad T.	1076	09.01 (010)
Barber, Mary C.	57	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Barney, Jody	1276	01.01.01.02 (011)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Barringer, John	476	01.01.01.02 (006), 01.02.03 (002)
Barrows, Bill	956	01.01.01.01 (008), 01.02.03 (002), 03.03 (008), 03.04 (010), 03.05 (009), 03.08 (011), 05.05.01 (016), 07.04 (001), 08.03.01 (005)
Barrows, William F.	992	06.03 (002)
Barrows, William F.	996	01.01.01.02 (006), 01.02.01.02 (012), 01.02.03 (002), 03.04 (010), 03.05 (009), 03.08 (010), 03.08 (011), 05.05.01 (016), 06.09 (030)
Bartschi, Earl	364	01.01.01.02 (006), 02.04 (060), 05.10.02 (016)
Bartschi, Glenna	364	01.01.01.02 (006), 02.04 (060), 05.10.02 (016)
Baslee, Oradell	1158	01.01.01.02 (006)
Bateman, James	1366	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
Bates, Albert	1069	04.03 (004), 04.03 (012)
Bates, Dorothy	1146	01.01.01.01 (022), 05.12.08 (001)
Batey, Gary	1207	01.01.01.02 (011)
Baumgarener, Charlotte	1251	01.01.01.02 (006), 03.08 (024), 07 (001)
Bazin, Nancy	1309	03.05 (008), 08.01 (001)
Bean, Lawrence	829	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Beardsley, Robert	142	08.03.01 (002), 08.03.01 (005), 08.04 (010), 08.05.05 (002)
Beasley, Alton	1246	02.01 (026), 02.04 (005), 06.05 (011), 09.01 (007)
Bechtel, Dennis	219	01.01.01.01 (015), 05.12 (001), 05.15 (007)
Bechtel, Dennis	906	01.01.01.02 (004), 01.02 (001), 02.06 (031), 04.03 (016), 04.03 (020), 05.12 (011)
Beem, Stacy	1162	01.01.01.02 (006)
Beeman, Janel	627	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Beeman, Janel	944	01.02.03 (002), 05.09 (002), 05.12 (001)
Begley, Roger	676	01.01.01.02 (011), 02.08 (002)
Beitel, George A.	1027	01.02.03 (002)
Beitel, George A.	1028	01.02.03 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Bell, Willard	1223	01.01.01.02 (011)
Bellman Cruz, Laurie J.	359	08.03.05 (004), 08.04 (010), 08.04 (013), 08.04 (020), 08.04 (021), 08.05.04 (002)
Bellman-Cruz, Laurie J.	276	08.04 (009), 08.04 (010), 08.04 (020), 08.04 (021), 08.05.04 (002)
Belsey, Dick	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Belsey, Richard	251	02.01 (026), 02.03 (014), 02.03 (015), 02.08 (020), 03.08 (023), 04.04 (017), 05.09 (001), 06.01 (006), 06.01.01 (001), 08.03.01 (013)
Belsey, Richard	269	01.01.01.01 (004), 02.03 (005), 02.03 (024), 04.04 (008), 05.10 (029), 05.10.01 (004), 05.10.02 (002), 05.10.02 (016), 05.10.02 (017), 05.12 (005), 05.12.07.01 (001), 05.12.07.01 (002), 05.12.08 (001), 06.05 (001), 06.07 (001), 08.03.01 (013), 08.04 (001)
Belzer, Fred	1184	01.01.01.01 (005), 01.01.01.01 (013), 01.02.03 (002), 02.04 (001), 03.05 (008), 04.01 (001), 04.03 (001), 04.03 (021), 06.07 (001), 06.09 (042)
Benjamin, Dick	628	09.01 (004)
Benjamin, Marvel	1301	01.01.01.02 (006), 05.08.01 (014)
Benjamin, Richard W.	902	02.01 (026), 02.02 (003), 04.03 (001), 04.04 (001), 06.04 (001), 06.05 (023), 08.03.01 (002)
Bennett, Jackie	505	09.01 (004)
Benson, Betty	604	01.01.01.02 (006)
Benson, Betty	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Benson, Margaret	1153	01.01.01.02 (006)
Benz, J. A.	47	08.04 (010), 08.05.06 (005)
Berenson, Janet	717	01.01.01.02 (006)
Berentz, Bob	963	03.05 (008), 03.07 (003), 05.08.01 (006), 06.04 (001)
Berger, Bonnie	565	08.01 (001)
Best, Karen	330	08.01 (001), 08.04 (010), 08.04 (014), 08.04 (021), 08.05.03 (003)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Bhide, Manohar	428	02.06 (028), 03.05.05 (007), 04.01 (005), 05.19 (001), 06.03.02 (003)
Bhide, Manohar	430	02.06 (028), 03.05.05 (007), 05.19 (001), 06.03.02 (003), 06.09 (022)
Bick, Susan	1185	01.01.01.02 (006)
Biggerstaff CMT, Tere	713	01.01.01.01 (005), 01.01.01.01 (022), 01.01.01.02 (006), 03.04 (010), 03.05 (009), 03.08 (011), 05.01 (003)
Biggs, Alan	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Billings, Josh	329	02.07 (012), 04.04 (008), 08.03.01 (001), 08.04 (001)
Billingsley, Adron	1208	01.01.01.02 (011)
Bjornsen, Fritz	474	01.01.01.01 (015), 01.01.01.02 (006), 04.01 (005), 04.03 (001), 06.06 (001), 06.09 (024)
Bjornsen, Fritz	551	09.01 (004)
Black, Betty	1380	01.01.01.01 (022), 01.01.01.02 (006), 07.04 (001)
Black Concerned Citizens of Portsmouth	164	See Zaidi, Rafiq
Blades, Jonnie	952	01.01.01.02 (006), 05.12 (001), 05.19 (011)
Blaine County, 1D; Bd. of Commissioners	751	See Blanchard, Tom
Blair, Joy	1300	01.01.01.02 (011)
Blake, Gary	1423	02.07 (001), 02.08 (002), 03.05 (018)
Blanchard, Florence K.	681	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Blanchard, Tom	751	01.01.01.01 (008), 01.01.01.01 (022)
Blanchard, Tom	981	01.01.01.02 (006), 02.04 (060), 03.03 (002), 03.08 (017), 05.08.01 (014), 05.12 (001), 06.05 (016)
Blood, Tina	1287	01.01.02 (005)
Blurton, Eleanor	1299	01.01.01.02 (006), 01.02.03 (002)
Bodansky, David	838	05.02 (003), 05.10 (049), 05.15 (018), 06.05 (013)
Boehm, Mark A.	285	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Bogen, Doug	179	08.01 (001), 08.03.01 (004), 08.03.01 (014), 08.03.01 (018), 08.04 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Bogen, Douglas	172	08.01 (001), 08.03.01 (004), 08.03.01 (005), 08.04 (001)
Bogen, Douglas	175	05.10 (029), 08.01 (001), 08.03.01 (004)
Bogen, Douglas	182	05.10 (021)
Borquist, Robert E.	1005	08.03.05 (006), 08.04 (010), 08.05.06 (005)
Boswell, JoAnn	873	01.01.01.02 (006)
Boucher, Tracy	546	02.01 (002), 02.08 (034), 06.07 (001)
Boucher, Tracy	550	02.01 (002), 02.08 (034), 06.07 (001)
Bourner, Darrell	1144	05.08.01 (014)
Bowen, Randy L.	1297	01.01.01.01 (015), 05.12 (001)
Bowers, Katharina	131	02.07 (012), 03.08 (010), 08.04 (010), 08.05.03 (001), 08.05.06 (004), 08.05.06 (005)
Bowlden, Scott	747	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Bowman, Bill	1165	05.08.01 (014)
Bowman, Tom	556	05.08.01 (014), 05.09 (001), 06.05 (002)
Boyle, Terry	1182	08.04 (010), 08.04 (013), 08.04 (021)
Boyles, Jean	1401	01.01.01.01 (022), 05.09 (001)
Bradford, Rand	649	01.01.01.02 (011), 03.05 (007)
Bradley, Edith	1098	03.05 (007), 05.16 (007)
Bradshaw, Ken	941	03.03 (008), 05.08.01 (014), 07.02.06 (005)
Bradshaw, Lois	779	01.02.03 (002), 03.05 (007), 05.05 (017)
Brady, Marcia W.	547	03.08 (013), 05.08.01 (014), 06.09 (038)
Bragg, William A.	1187	01.01.01.01 (008)
Brailsford, Beatrice	907	01.02.01.02 (002), 01.02.03 (002), 02 (001), 02.01 (030), 02.03 (006), 02.04 (004), 02.04 (007), 02.06 (005), 03.07 (003), 03.07 (004), 04.01 (001), 04.03 (005), 04.03.01 (002), 04.03.01 (012), 04.03.01 (019), 05.10.02 (016), 06.01 (002), 06.01 (013), 06.05 (002), 06.06 (005), 07.01.05 (002), 08.03.03 (004), 09.01 (004)
Brailsford, Beatrice	1035	01.01.01.02 (006), 01.02.01.02 (002), 01.02.03 (002), 02.07 (008), 02.08 (002), 02.08 (008), 02.08 (020), 03.07 (003), 03.07 (004), 04.01 (001), 04.03 (005),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Brailsford, Beatrice	1035	04.03.01 (001), 04.03.01 (012), 04.03.01 (019), 04.04.01 (007), 06.04.01 (001), 06.05 (016), 07.01.05 (002), 09.01 (004)
Branter, Keith	1114	01.02.03 (002)
Bray, Kris	886	08.01 (001), 08.05.06 (005)
Breedlove, Debbie	1177	01.01.01.02 (006)
Brelsford, C. K.	458	01.01.01.02 (008), 01.02.03 (002), 05.10 (006), 06.03 (013), 06.09 (013)
Bremerton, WA; Mayor of	842	See Horton, Lynn B.
Briggs, Geoff	26	01.01.01.01 (008), 02.06 (027), 03.01 (001), 03.05 (008), 03.05.05 (001), 04.03 (001), 05.12 (001), 05.18.04 (002)
Briggs, Harrison	1364	01.01.01.02 (011)
Briggs, Mary Jane	1364	01.01.01.02 (011)
Brimas, Patricia	516	05.10 (030)
Brimas, Patricia A.	517	03.07 (004), 03.08 (010), 05.08.02 (005), 05.10.02 (007), 06.09 (024)
Brinton, Cora	563	01.01.01 (002), 05.10.02 (006), 08.01 (001), 08.06 (020)
Brinton, Cora	1387	05.09 (001), 06.09 (013), 08.01 (001), 08.03.01 (008)
Brodie, Hal	206	03.08 (016)
Brodie, Hal	216	03.08 (016)
Brooks, James	1196	01.01.01.02 (011), 03.08 (010), 06.06 (003)
Broscious, Chuck	595	02.02 (003), 02.03 (025), 02.04 (032), 02.05 (001), 02.06 (021), 02.06 (024), 03.04 (011), 03.04 (018), 03.04.01 (001), 04.01 (001), 04.03 (001), 04.03.01 (014), 05.08.01 (021), 05.09 (008), 05.10.01 (009), 05.11.03 (001), 05.11.03 (013), 05.16 (003), 05.18.01 (008), 05.18.01 (009), 06.03.02 (001), 06.09 (002), 07.04 (004), 07.04 (006), 08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.03.05 (003), 08.05.01 (003), 08.05.01 (007), 08.05.09 (004), 08.05.09 (005)
Broscious, Chuck	608	09.01 (004)
Broscious, Chuck	610	01.01.01.01 (029), 01.02.02 (005), 01.02.02 (006),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Broscious, Chuck	610	01.02.03 (002), 01.03 (003), 02.01 (015), 02.01 (016), 02.03 (004), 02.03 (007), 02.03 (025), 02.04 (003), 02.04 (026), 02.04 (027), 02.04 (032), 02.04 (036), 02.04 (060), 02.05 (001), 02.07 (001), 02.08 (012), 02.08 (040), 03.01 (005), 03.04 (019), 04.05 (022), 05.02 (054), 05.05.01 (001), 05.05.01 (016), 05.05.01 (019), 05.05.01 (034), 05.05.01 (040), 05.08 (008), 05.08.01 (021), 05.08.01 (041), 05.08.01 (053), 05.08.03 (009), 05.09 (008), 05.09 (011), 05.10 (064), 05.10.01 (009), 05.11.03 (013), 05.16 (003), 05.18.01 (008), 06.02 (002), 06.02 (015), 06.02 (019), 06.02 (021), 06.03 (008), 06.03 (009), 06.03 (014), 06.05 (001), 06.05 (026), 06.05 (031), 06.08 (006), 06.09 (017), 06.09 (021), 07 (003), 07.01 (006), 07.01.03 (003), 07.01.03 (004), 07.01.03 (005), 07.01.05 (001), 07.02 (001), 07.02.03 (001), 07.02.04 (001), 07.02.04 (002), 07.04 (006), 07.04 (007), 08.02 (002), 08.02 (003), 08.03.05 (002), 08.03.05 (003), 08.04 (014), 08.05.01 (002), 08.05.05 (006), 08.05.05 (011), 08.05.06 (021), 08.05.06 (029), 08.05.09 (001), 08.05.09 (002), 08.05.09 (003), 08.05.09 (004), 08.05.09 (005), 08.06 (002)
Broscious, Chuck	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Brown, Charles R.	39	08.01 (004)
Brown, Chris	225	01.01.01.01 (022), 02.01 (007), 02.04 (005), 04.01 (003), 05.10.02 (018), 05.11.03 (003), 05.12.04 (003), 06.07 (001), 08.03.01 (005), 09.01 (004)
Brown, Chris	226	09.01 (004)
Brown, Norman C.	1238	02.07 (012)
Brown, Reatha O.	39	08.01 (004)
Brown, Robert G.	121	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Brown, Robert G.	121	08.04 (009), 08.04 (014)
Bruce, Lera G.	837	01.02.03 (002), 05.08.01 (014)
Bryan, Mary	244	01.01.01.01 (015), 02.04 (028), 02.04 (060), 02.07 (007), 02.08 (052), 03.08 (012), 04.01 (001), 05.10 (058), 05.11.01 (008), 06.05 (002), 06.09 (019)
Bryan, Mary	453	02.03.01 (001), 02.03.01 (004), 02.04 (022), 04.01 (001), 04.03.01 (003), 05.10.01 (028), 05.12.08 (001), 05.16 (001), 06.05 (002), 06.05 (015)
Bryant, Chris	320	03.08 (013)
Bryant, Ronald	197	08.01 (002)
Bubb, Adella M	508	08.01 (001)
Buchanan, James	1336	01.01.01.02 (011), 05.12 (001)
Buel, Austin	883	06.09 (019), 08.03.01 (007)
Buffalo, University of	904	See Wagner, Robert J.
Burgess, Dave	752	01.01.01.01 (022), 03.03 (008), 04.03 (001), 05.08.01 (014), 05.10 (006)
Burgess, Ila G.	872	01.01.01.02 (006), 02.08 (020), 03.04.01 (004), 05.08.01 (014), 05.12 (001), 06.07 (001)
Burgess, Kathy	752	01.01.01.01 (022), 03.03 (008), 04.03 (001), 05.08.01 (014), 05.10 (006)
Burris, Betty	1342	01.01.01.02 (006), 01.01.01.02 (011)
Burris, Mary S.	1330	01.01.01.02 (011), 05.18.04 (002)
Bush, Janet	1351	05.09 (001), 08.01 (001)
Butler, Claudia	1348	01.01.01.02 (006)
Butler, Diane W.	54	08.04 (010), 08.05.07 (001)
Butler, Diane	89	08.01 (001), 08.06 (002)
Butler, Julie	936	03.08 (009), 04.03.01 (001), 04.04 (008), 04.05 (009), 05.05.01 (015), 05.09 (008), 09.01 (004)
Buys, Barbara	1135	08.05.05 (002)
Bybee, R. V.	434	01.01.01.02 (006), 04.03 (001), 05.08.01 (014), 05.12 (001)
Bybee, R. V.	1016	01.01.01.02 (006), 04.03 (001), 05.08.01 (014), 05.12 (001)
Caccia, John	957	02.03 (019), 03.05 (007), 03.05 (008), 05.12 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Cain, Edith J.	1365	01.01.01.02 (006)
Cain, Vanessa	1366	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
Caldwell, Lindsey	1041	05.10.01 (008)
Caldwell, Lola K.	32	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Calverley, Paul H.	2	09.01 (003)
Calverley, Paul H.	16	02.03 (001)
Camero, Jane	1408	05.09 (001), 05.12 (001), 07 (001)
Camp, George	703	08.01 (001)
Campbell, Barbara	1241	02.07 (012)
Campbell, Carroll A.	900	02.02 (002), 04.03 (001), 06.05 (016), 06.06 (003)
Campbell, Darrel	582	06.01 (002), 08.01 (001), 08.04 (001), 08.04 (008)
Can We	597	See Hanson, Gertie
Canan, Craig	774	01.01.01.02 (011), 03.08 (011), 04.03 (001)
Canfield, Kerry	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Canfield, Kerry	314	03.08 (012), 04.03 (027), 05.12.03 (002), 05.13 (001), 06.09 (013)
Canham, Susan	422	05.10 (006), 05.12.06 (002)
Cantrill, Dante	731	01.01.01.02 (006), 02.08 (002), 03.07 (004), 05.18.04 (002)
Cantrill, Judie	731	01.01.01.02 (006), 02.08 (002), 03.07 (004), 05.18.04 (002)
Capalbo, Joseph	1175	01.01.01.02 (006), 07 (001)
Carman, Barbara	1382	01.01.01.02 (006)
Carolina, State of	900	See Campbell, Carroll A.
Carpenter, Michelle L.	867	08.01 (001), 08.04 (010), 08.04 (021), 08.05.05 (002)
Carr, Luther J.	644	02.08 (042)
Carricato, Mike	426	09.01 (004)
Carroll, Stevi	222	01.01.01.02 (006), 03.03 (008), 05.12 (001)
Carter, Christine	1405	08.01 (001)
Casebeau, Max	1155	03.05 (007), 03.05 (008), 04.01 (001), 04.01 (005), 05.08.01 (014), 05.11.03 (001), 05.12 (001)
Cassidy, Deirdre	719	02.04 (010), 03.08 (007), 04.01 (001), 04.01 (005),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Cassidy, Deirdre	719	06.01 (002), 06.05 (002)
Cavanaugh, Arlene	1372	01.02.01.02 (006), 05.12 (001), 06.09 (013)
Cavanaugh, Fred	628	09.01 (004)
Champagne, Sherry	583	08.01 (001)
Chandler, Asa	1003	01.01.01.02 (006), 04.01 (001), 05.05.01 (016), 05.08.01 (014), 06.01 (002)
Chaney, Charlotte	801	01.01.01.02 (006)
Chapman, Frank R.	858	02.07 (005), 04.03 (001), 04.04.01 (005), 04.05 (012), 05.05.01 (005), 05.08.02 (003), 05.10.02 (016), 05.12 (001), 05.19 (011), 06.04 (001), 06.05 (001), 06.05 (011), 06.06 (003), 06.09 (013)
Chenango North Energy Awareness Group	1422	See Griffin, Susan B.
Chisholm, Bill	978	01.01.01.01 (022), 01.01.01.01 (026), 01.01.01.02 (006), 01.02 (001), 01.02.01.01 (003), 02.04 (060), 02.08 (002), 03.03 (008), 03.05 (025), 03.07 (004), 04.03 (021), 04.04.01 (002), 04.05 (018), 05.04 (023), 05.05.01 (016), 05.12 (001), 05.18.01 (012), 06.05 (016), 06.07 (013), 07.01.03 (006), 07.04 (004)
Chisholm, William K.	980	01.01.01.01 (022), 01.01.01.01 (026), 01.01.01.02 (006), 01.02 (001), 01.02.01.01 (003), 02.04 (060), 02.08 (002), 03.03 (008), 03.05 (025), 03.07 (004), 04.03 (021), 04.04.01 (002), 04.05 (018), 05.04 (023), 05.05.01 (016), 05.12 (001), 05.18.01 (012), 06.05 (016), 06.07 (013), 07.01.03 (006), 07.04 (004)
Chretien, Rollin	687	06.04 (001)
Christ, Margaret	910	05.12 (001)
Christiansen, Niel	714	01.01.01.01 (002), 01.01.02 (001)
Chutter, R. J.	701	08.01 (002), 08.04 (010), 08.04 (013)
Cincinnati Fire Division	1128	See McDonald, Tim
Cincinnati, City of	899	See McDonald, Timothy
Citizen Alert	1119	See Costner, Brian
Citizens for Alt. to Radioactive Dumping	1119	See Costner, Brian

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Citizens for Environmental Justice	1119	See Costner, Brian
Citizens of Environmental Coalition	187	See Ellis, Thomas
Clark, G. Wayne	450	03.08 (011), 06.07 (012), 06.09 (001)
Clark, Patricia	1439	01.01.01.01 (022), 01.01.01.02 (006), 04.03 (001), 05.12 (001)
Clark County Dept. of Comp. Plan.	906	See Bechtel, Dennis
Clean Water Action	179	See Bogen, Doug
Clean Water Action	172	See Bogen, Douglas
Clean Water Action	175	See Bogen, Douglas
Clemens, Johnny	169	08.04 (010), 08.04 (015), 08.05.08 (001)
Clements, Linda	1171	05.08.01 (014)
Clubbe, Brett	602	01.01.01.02 (006), 02.01 (030), 02.08 (002), 02.08 (005), 03.03 (008), 03.08 (020), 04.03.01 (017), 04.05 (014), 05.04 (020), 05.04 (021), 05.08.02 (007), 05.09 (013), 05.10 (012), 05.11.01 (001), 05.18.04 (002), 05.19 (015), 06.01 (009), 06.02 (012)
Coalition for Health Concerns	1119	See Costner, Brian
Coalition for Petition Rights	254	See Farrell, Russ
Coates, Hazel	1389	06.09 (013), 08.01 (001)
Cogan, Lindy	618	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Cogan, Lindy	1081	01.02.03 (002)
Cole, Christine N.	366	01.01.01.02 (006), 04.03 (001), 05.18.01 (002)
Cole, Christine N.	1002	01.01.01.02 (006), 04.03 (001), 05.18.01 (002)
Cole, Roger P.	177	06.01 (002), 08.03.01 (004), 08.03.01 (005), 08.03.01 (006), 08.03.01 (014), 08.05.03 (002)
Cole, Roger P.	182	05.10 (021)
Coleman, Marsha	226	09.01 (004)
Coleman, Peter F.	137	01.01.01.02 (006), 04.03.01 (019), 05.10.02 (006), 05.10.02 (016), 05.12 (001), 06.05 (016)
Collins, Arthur L.	846	01.02.03 (002)
Collins, Arthur L.	932	01.02.03 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Collum, Jeff C.	84	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Colorado, Public Service Co. of	939	See Crawford, A. C.
Commander, John C.	772	01.01.01.01 (038)
Committee for Safe Energy Future	170	See Linnell, William S.
Condit, Clay	855	05.11.01 (007)
Condit, Clay	897	05.11.01 (007)
Conger, Bill	1269	01.01.01.02 (011)
Congress of the U.S. / House of Rep.	211	See Solomon, Gerald B.
Congress of the U.S. / House of Rep.	840	See Dicks, Norm
Congress of the U.S. / House of Rep.	17	See Mink, Patsy T.
Congressman Solomon	205	See Purner, Jeff
Connelly, Joan	1093	05.12.06 (002), 08.01 (001), 08.03.01 (005)
Conner, Robert	1337	01.01.01.02 (011), 03.08 (010)
Conway, John T.	845	02.01 (027), 02.04 (042), 02.08 (058), 04.03.02.01 (002)
Cook, Reena	529	08.04 (010), 08.04 (013), 08.04 (014), 08.05.06 (004)
Cooke, Ian M.	40	08.01 (001), 08.04 (010), 08.05.06 (022), 08.05.06 (023), 08.05.06 (028)
Cooke, Kerry	921	06.05 (016)
Coop, Linda	1209	01.01.01.02 (011)
Cooper, Ida Mae	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Cooper, Ida May	350	01.02.03 (002), 08.01 (001)
Cooper, Kathleen B.	141	08.01 (002)
Copeland, William E.	171	08.03.01 (005), 08.03.01 (007), 08.05.06 (034)
Copley, Ralph	581	08.03.05 (001), 08.05.06 (030)
Corr, Cecilia	144	06.09 (007), 06.09 (013), 06.09 (014)
Costner, Brian	631	02.04 (042), 02.08 (016), 04.01 (001), 04.03 (001), 04.03.01 (023), 04.05 (001)
Costner, Brian	1119	01.01.01.01 (015), 02.01 (028), 02.04 (002), 02.04 (007), 02.04 (009), 02.04 (042), 03.04 (004), 04.01 (001), 04.01 (004), 04.03 (001), 06.09 (044)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Cowles, Betty	699	08.01 (001)
Cox, Chris	757	03.07 (003), 06.09 (013)
Cox, Chris	1280	03.07 (003), 06.09 (013)
Coyle, Gaylord	1263	01.01.01.02 (006)
Craig, Senator Larry E.	1046	01.02.01.02 (013), 06.04 (008), 06.09 (030)
Craig, Senator Larry E.	1047	See Schrade, Jeff
Crandall, Kathryn	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Crandall, Kathryn	302	02.03 (024), 02.07 (012), 04.03 (055), 05.10 (022), 05.10.02 (017), 06.09 (013), 08.03.01 (003), 08.03.01 (008), 08.03.01 (014), 08.03.05 (001)
Crandall, Kathryn	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Crandall, Kathryn	355	04.03 (005), 04.04 (008), 06.01 (002), 06.09 (024), 08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.04 (010)
Crane, Andrew	56	01.01.01.02 (006), 05.08.01 (014), 07 (001)
Crawford, A. C.	939	02.08 (032), 03.08 (002), 05.12 (013), 05.19 (005), 05.19 (013), 06.02 (023), 06.03 (010), 06.08 (002), 06.08 (008), 06.09 (026), 06.09 (027), 06.09 (050)
Crawford, Gordon	123	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Critchley, Mel	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Crocker, Nan	154	01.01.01.02 (006), 05.12 (001), 07.01.02 (001)
Cropper, Tom	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Cropper, Tom	255	05.18.04 (002)
Crosslin, Leslie	1320	01.01.01.01 (029), 03.07 (003), 06.05 (002)
Csorgo, Alex	1215	01.01.01.02 (011), 05.12 (001)
Cunningham, Don	992	06.03 (002)
Curtis, Carol	1358	01.01.01.02 (006), 03.07 (003), 06.06 (003)
D'Alessio, David	71	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Daly, Amelia	689	08.01 (001)
Daly, Katherine R.	1060	01.01.01.02 (006), 08.03.01 (001)
Daly, Katherine R.	1065	01.01.01.02 (006), 08.03.01 (001)
Davenport, Les	236	09.01 (004)
Davidson, Cora E.	72	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Davidson, Fonny	1386	01.01.02 (005)
Davidson, Nancy	1273	01.01.01.02 (011)
Davidson, Ray C.	727	08.01 (004)
Davidson, Velda	727	08.01 (004)
Davis, Bruce	750	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Davis, Elizabeth A.	715	04.03.01 (021), 06.05 (017)
Davis, Julie	512	03.05 (008), 05.12 (001), 08.01 (001)
Davison, Dave	1344	03.08 (011), 06.06 (003), 07.04 (001), 08.01 (001), 08.03.05 (002), 08.04 (010), 08.04 (014), 08.04 (020)
Davison, David I.	279	08.04 (010), 08.04 (014), 08.04 (018), 08.04 (021), 08.05.05 (002), 08.05.06 (005), 08.05.06 (006), 08.05.06 (027), 08.05.06 (032)
Day, Heather	1313	05.11.02 (006), 06.09 (013)
Day, Jon	914	08.05.06 (005)
Day, Raymond	1160	05.08.01 (014), 05.11.03 (020)
De Spain, J.	728	02.03 (002), 03.08 (011), 05.12 (001)
DeMarco, Anita	138	08.03.01 (005), 08.03.01 (007), 08.03.01 (009), 08.04 (010)
Dee, Keith	594	08.01 (001)
Deegan, Robert	167	01.02.01.02 (006), 02.08 (006), 03.04 (007), 04.03 (027), 05.12.03 (002), 06.03 (001), 08.03.01 (008), 08.03.04 (001), 08.04 (002), 08.04 (016), 08.05.06 (025), 08.05.06 (030)
Deegan, Robert F.	905	01.02.01.02 (006), 02.08 (006), 03.04 (007), 04.03 (027), 06.03 (001), 08.03.04 (001), 08.04 (010)
Deegan, Robert F.	1006	01.02.01.02 (006), 02.08 (006), 03.04 (007), 04.03 (027), 06.03 (001), 08.03.04 (001), 08.04 (010)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Defense Nuclear Facilities Safety Board	845	See Conway, John T.
Delusignan, Dorian	692	01.01.01.01 (022), 08.01 (001)
Dement, Geraldine B.	1349	01.01.01.02 (011)
Dement, Joe J.	1363	01.01.01.02 (011)
Dempster, Michael	1325	02.07 (012)
Denton, Marcia	1217	01.01.01.02 (011)
Detmer, Tami	592	08.04 (013)
Devereaux, Eugene E.	99	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Devine, John C.	237	06.01 (008), 06.02 (010)
Devine, Shirley	1435	01.01.01.02 (011)
Devlin, Sally	898	05.12.07.01 (002), 05.15 (023)
Dickinson, Irene P	654	01.01.01.02 (011), 03.05 (007), 05.10.02 (016), 05.12 (001)
Dicks, Norm	840	06.05 (021), 06.07 (001), 08.03.01 (020), 08.04 (010), 08.04 (024)
Diehl, Don	326	02.08 (001), 03.01 (001)
Diepenbrock, Kathleen	986	03.05 (008), 04.03 (001), 05.12 (001), 06.05 (002)
Dight, Ruth	85	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Dilley, Les	866	01.01.01.02 (006)
Dixon, Betty	1384	01.01.01.02 (011)
Dixon, Marjorie	1191	01.01.01.02 (006)
Doersam, Eugene	1198	01.01.01.02 (011)
Dold, Ann	1068	05.11.03 (014)
Don't Waste Oregon	258	See Sims, Lynn
Donaldson, Jeanne	1212	01.02.03 (002)
Donnelly, Tom	316	02.04 (010), 03.03 (008), 05.16 (005), 08.03.01 (012), 09 (010)
Donnelly, Tom	351	01.02.01.02 (006), 02.04 (002), 02.04 (010), 02.06 (007), 08.03.01 (008), 08.05.06 (032)
Donnelly, Tom	764	03.03 (008), 03.08 (011), 05.09 (002), 08.03.01 (005), 08.03.01 (006), 08.03.01 (012), 08.04 (010), 08.05.01 (009),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Donnelly, Tom	764	08.05.06 (005), 08.05.06 (032), 09 (010)
Donnelly, Tom	1344	03.08 (011), 06.06 (003), 07.04 (001), 08.01 (001), 08.03.05 (002), 08.04 (010), 08.04 (014), 08.04 (020)
Donohue, Brian P.	24	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Dougherty, Al	1312	01.01.01.02 (006)
Dougherty, Jenive	1312	01.01.01.02 (006)
Doughty, Jane	553	02.08 (002), 04.03 (001), 05.10.02 (011), 06.09 (019), 08.04 (014), 08.04 (021), 08.05.04 (002), 08.05.06 (023)
Dove, Debby	585	08.01 (001), 08.01 (004), 08.05.06 (005)
Dowd, Joyce	1210	01.01.01.02 (011)
Dowd, Kathy	1362	01.01.01.02 (011)
Downey, Patricia	280	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Doyle, Patrick	1433	01.01.01.02 (001), 01.01.01.02 (011), 05.08.01 (047), 05.12 (015), 05.18.04 (002)
Draper, Marge	1219	01.01.01.02 (006)
Drewes, Kenneth N.	680	01.01.01.01 (002), 06.05 (016)
Drewes, Kenneth N.	1042	07.01.01 (001), 08.03.05 (006)
Driscoll, Cristine	488	08.01 (001)
Drown, Lynn R.	833	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Du Val, Elizabeth H.	733	01.01.01.01 (005), 01.02.03 (002), 04.01 (005), 04.03 (021), 04.05 (020)
Duke, Beth M	685	05.11.03 (020), 08.04 (013)
Duke, Judith C.	850	08.04 (010), 08.04 (013), 08.04 (014), 08.04 (020), 08.05.06 (005), 08.05.06 (032)
Duke, Robert A.	861	08.04 (010), 08.04 (013), 08.04 (014), 08.04 (020), 08.05.06 (005), 08.05.06 (032)
Dunning, Dirk	259	05.10.02 (002), 05.10.02 (022), 06.01 (011), 06.01 (016), 06.03 (008), 06.09 (009), 08.05.01 (003), 08.06 (006)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Duplessis, Lee	778	02.08 (011), 05.10.02 (021)
Duplessis, Lee	1033	02.08 (002), 03.08 (011), 04.03 (001), 05.10 (029), 05.10.02 (002), 05.10.02 (007), 05.13.01 (001)
Duplessis, Lee	1034	02.08 (002), 03.08 (011), 04.03 (001), 05.10 (029), 05.10.02 (002), 05.10.02 (007), 05.13.01 (001)
Duplessis, Lee	1050	02.04 (011), 03.04.01 (002), 03.08 (011), 04.01 (001), 05.10.02 (002), 05.11.03 (001), 06.09 (008), 09.01 (004)
Duplessis, Lee	1371	03.08 (022), 05.10 (031)
Duvall, Jami	1270	05.12 (001), 08.01 (001)
Dworkin, Mona	20	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Dyson, Jessica	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Dyson, Jessica	311	02.07 (012), 02.08 (002), 03.02 (003), 08.04 (010), 08.04 (014), 08.04 (016)
Dyson, Jessica	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Dyson, Jessica	354	01.02.01.02 (006), 01.02.03 (002), 04.03 (005), 08.01 (001)
Dyson, Jessica	587	02.07 (012)
Eaves, Debbie	1424	05.12 (001)
Economists Allied for Arms Reductions	1119	See Costner, Brian
Eddy, David C	277	05.10.01 (004), 08.03.01 (009), 08.03.01 (011), 08.04 (010), 08.04 (020)
Edelstein, Jan M.	737	01.01.01.02 (006), 04.01 (001), 04.03.01 (012), 05.10 (008), 05.18.01 (011), 06.05 (002), 06.05 (008)
Edwards, Carol	1181	01.01.01.02 (006), 05.02 (001), 05.08.01 (014)
Egan, Joseph	159	08.03.01 (008)
Egan, Joseph R.	870	02.03 (024), 02.04 (033), 03.04 (008), 03.04 (013), 04.03.02.01 (004), 05.12.03 (002), 05.19 (001), 05.19 (002)
Egan, Joseph R.	933	03.04 (013), 05.10 (002), 05.10.02 (002), 05.19 (001), 05.19 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Egan, Joseph R.	938	02.01 (010), 05.10 (002), 05.10.02 (002), 05.12 (012), 05.13.02 (002), 05.19 (001), 05.19 (002)
Eichler, Robert F.	730	01.01.01.02 (005), 04.05 (004), 05.09 (007), 05.15 (005), 06.05 (007), 08.03.01 (005), 08.05.03 (005), 08.05.04 (005)
Eiden, Max	745	02.04 (006), 04.01 (005), 05.05.01 (001), 05.08.01 (014), 06.07 (001), 08.03.01 (009)
Eigabroadt, Earl E.	771	01.02.01.02 (020), 08.01 (002), 08.01 (004)
Ekman, John	190	04.03 (001)
Elle, Jean	1051	01.01.01.01 (022), 03.08 (007), 03.08 (023), 07.04 (008)
Elle, Jean	1052	01.01.01.02 (006), 03.08 (007), 03.08 (023), 07.04 (008)
Ellis, Cathy	740	02.03 (002), 03.08 (011), 05.12 (001)
Ellis, Thomas	187	08.01 (006), 08.03.01 (005), 08.03.01 (010), 08.03.01 (021), 08.05.07 (003)
Emery, Susan	180	08.03.01 (004), 08.04 (010), 08.04 (013), 08.04 (014), 08.05.04 (002)
Emery, Susan	181	08.03.01 (004), 08.04 (013), 08.04 (014), 08.05.04 (002)
Emery, Susan	182	05.10 (021)
Emery, Susan	1412	01.02.01.02 (006), 03.05 (007), 06.04.01 (004), 08.04 (010), 08.04 (013), 08.05.04 (002)
Energy Authority	206	See Brodie, Hal
Energy Authority	216	See Brodie, Hal
Energy Research Foundation	631	See Costner, Brian
Energy Research Foundation	1119	See Costner, Brian
Energy Research Foundation	1119	See Costner, Brian
Enquist, Robert W.	156	08.01 (002)
Env. Mgmt. Site-Specific Advisory Board	1012	See Myers, Joy
Environmental Defense Institute	1119	See Costner, Brian
Environmental Defense Institute	595	See Broschious, Chuck
Environmental Defense Institute	610	See Broschious, Chuck
Environmental Protection Agency, U.S.	1120	See Sanderson, Richard E.
Erickson, Randee	1183	05.12 (001), 05.13.04 (001), 05.16 (005), 08.01 (001)
Erman, Laird	436	01.01.01.02 (006), 03.08 (010), 05.05 (017)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Ernst, Carol	1441	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
Esbeck, Edward S.	59	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Esparza, Micah	890	08.04 (014)
Essin, Christine	775	08.01 (001)
Everette, Amanda	519	02.01 (026), 02.07 (001), 03.08 (012), 04.01 (001), 04.01 (005), 04.03 (001), 04.03 (040), 06.01 (002), 06.02 (021), 06.05 (002), 06.07 (001), 06.09 (019), 07.01.02 (001)
Everson, Rickie	1369	01.01.01.02 (011)
Ewald, Linda	1232	01.01.01.02 (011), 05.12 (001)
Ewing, Mary Jane	1370	05.12 (001)
Ewing, Robert	1370	05.12 (001)
FOCUS on Peace and Justice	531	See Hondo, Carolyn
Falkner, Mark	1361	01.01.01.02 (006), 05.08.01 (014)
Farber, Ruth	5	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Farmer, Jack	438	03.03 (002), 03.08 (011), 05.18.04 (002)
Farrell, Russ	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Farrell, Russ	254	02.07 (001), 03.08 (010), 06.09 (013), 08.03.01 (001), 08.03.01 (004)
Fauci, Joanie	497	01.01.01.01 (015), 01.01.01.01 (022), 01.01.01.02 (006), 02.01 (026), 04.01 (005), 04.03 (001), 04.03 (048), 05.10.01 (009), 06.07 (001), 07.04 (001)
Fay, William M.	133	05.02 (004), 05.08.01 (054)
Federal Managers Association, Ch. 19	378	See Priolo, John
Fennema, Diane	1228	01.01.01.02 (006)
Ferguson, Ken	261	01.01.01.02 (006), 01.02.03 (002), 02.08 (047), 03.05.05 (002), 03.06 (001)
Fernald Res. for Env. Safety & Health	1119	See Costner, Brian
Ferrara, Russ	635	03.05 (008), 03.08 (003), 05.15 (017)
Fessenden, Lorette	352	08.03.05 (001), 08.04 (021), 08.05.06 (025), 08.05.08 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Feulner, Anne	725	08.04 (010), 08.04 (014), 08.05.06 (005)
Feulner, Herb	725	08.04 (010), 08.04 (014), 08.05.06 (005)
Fields, Charles E.	8	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Fincher, Angie	672	01.01.01.02 (011)
Finn, Ellen	1097	08.04 (010)
Fisk, Edison S.	557	08.04 (010)
Fisse, Ron	1134	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014)
Fist of Fury	321	See Mohtiak, Dan
Flanders, Allen	1415	03.08 (011), 08.03.01 (005), 08.04 (010), 08.04 (021), 08.05.06 (005), 08.05.07 (009)
Fleming, Grace M.	496	08.01 (001), 08.04 (010)
Flinn, Alicia	469	01.01.01.02 (006), 01.02.03 (002), 02.08 (020), 04.03 (001), 05.08.01 (014), 05.10 (014), 05.12 (015), 06.05 (002), 06.07 (001), 06.09 (024)
Flinn, James	1319	09.01 (004)
Flint, William	1100	01.01.01.02 (006)
Flory, Brenda	426	09.01 (004)
Flory, Lynn	693	08.01 (001)
Flynn, Carol L.	789	01.01.01.02 (006), 05.08.01 (014), 06.07 (001)
Fong, Thelma V.	103	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Forck, Jim	82	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Fordyce, Philip A.	79	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Forrey, Gloria	1391	01.01.01.02 (006)
Fortunoff, Saul	18	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Foster, Betty	1438	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014)
Foster, Nicki L.	288	01.01.01.01 (022), 01.01.01.02 (006), 05.12.08 (002)
Fowler, Corinne	1250	01.01.01.01 (015), 05.12 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Fowler, Halle	1163	01.01.01.01 (022)
Fowler, Happy	1178	01.01.01.02 (011)
Franden, Janet	1222	01.02.03 (002)
Fraser, Bill	804	01.01.01.02 (006), 01.02.01.01 (002), 05.05.01 (016), 05.08.01 (014)
Frazier, Kathleen	1262	01.01.01.02 (006)
Frazier, M.	929	01.01.01.02 (006), 02.08 (009), 03.03 (008), 03.04 (014), 04.03.01 (017)
Frazier, Marilyn	786	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Fredenborg, Ed	835	05.10.01 (030)
Fredericks, Sally	511	05.05 (015), 05.08.01 (014), 08.01 (001), 08.03.01 (005), 08.04 (003)
Fredricks, Randall C.	811	01.01.01.02 (006), 01.01.01.02 (024), 05.05 (017), 05.05.01 (016), 05.08.01 (014)
Friends of ORNL	454	See Anonymous
Fritzler, Loretta	964	01.02.03 (001), 03.05 (007), 03.08 (010), 05.08.01 (014), 05.11.03 (020), 07.01.01 (002)
Frogner, David	37	08.05.06 (005), 08.05.11 (006)
Fruing, John	268	09.01 (004)
Fuller, Margaret	819	01.02.03 (002), 05.05.01 (016), 05.08.01 (014)
Fuller, Robert	1237	01.01.01.02 (011)
Future Free Transportation	613	See Ward, Sonne
Gaddy, Claude N.	1429	01.01.01.02 (011), 05.12 (001)
Gallo, Cathleen	41	08.03.01 (009)
Gancio, Ann M.	491	08.01 (001)
Gannes, Brenda	1353	01.01.01.02 (011)
Gannes, Randall	1354	01.01.01.02 (011)
Ganus, Zada K.	841	08.01 (001)
Gardner, Edwena	1427	01.01.01.01 (002), 01.01.01.02 (011)
Gardner, Jeanne	328	02.06 (001), 06.04 (005)
Gardner, Jenne	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Gardner, Jenne	346	08.05.01 (009)
Gardunia, Brian	471	01.02 (001), 04.03 (042)
Gates, Marilyn	385	05.10 (010), 05.10 (021), 08.01 (001), 08.03.01 (001), 08.03.01 (004), 08.03.01 (005), 08.03.01 (007), 08.03.05 (002), 08.04 (010), 08.04 (029), 08.05.01 (008), 08.05.06 (005), 08.05.06 (022), 08.05.06 (031), 08.05.07 (001)
Gatton, Leslie	1304	03.08 (009), 03.08 (010)
Gauer, Madelon	1122	05.08.01 (030), 06.05 (016)
Gauer, Paul	1122	05.08.01 (030), 06.05 (016)
Geddes, Rick L.	629	02.08 (019), 06.08 (001), 08.04 (003)
Geddes, Rick L.	632	02.01 (026), 04.01 (005), 04.03 (001), 06.09 (040)
Geer, J.	723	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Gegner, Bert	345	08.03.01 (016)
Gelsey, Rudolph	201	08.03.01 (001), 08.03.01 (003), 08.03.01 (004), 08.05.08 (001)
Gelsey, Rudolph	218	03.01 (001), 05.10.02 (023), 08.01 (002), 08.03.01 (003), 08.03.01 (004)
George, Coleen	86	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
George, Roxane	916	01.01.02 (006), 01.02 (001), 01.02.03 (002), 03.08 (010), 04.03 (001), 04.03.01 (017), 04.05 (018), 05.12 (001), 05.13.01 (002), 08.01 (002)
Gibbs, Dominic	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Gibson, Bryce	1399	01.01.01.02 (006)
Giggey, Mary	83	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Gilden, Stacy	947	01.01.01.02 (006), 03.05.05 (010), 03.08 (010), 04.03 (026), 05.08.01 (014), 05.12 (001), 06.09 (023), 06.09 (040), 06.09 (041), 08.03.01 (001), 08.03.03 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Gilmore, Ginnie	101	08.04 (010), 08.04 (014)
Gilmore, Leigh	111	08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.04 (010), 08.04 (013), 08.04 (014), 08.05.05 (002)
Gimel, Marlin	66	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Glaccum, Ellen	960	01.01.01.01 (022), 01.01.01.02 (006), 02.03 (014), 02.08 (052), 05.05.01 (016), 05.12 (001), 06.05 (011)
Glaccum, Ellen	994	01.01.01.01 (022), 02.03 (014), 02.08 (052), 05.05.01 (016), 05.12 (001), 06.01 (005), 06.05 (011)
Glasseir, Rox	1108	08.01 (004), 08.04 (013), 08.05.06 (030)
Gleaves, Richard	1200	01.01.01.01 (015), 01.01.01.02 (011)
Gleysteen, Mary	348	02.01 (032), 02.07 (012), 04.01 (005), 08.03.01 (005), 08.03.01 (009), 08.03.01 (011)
Gleysteen, Mary	864	08.03.01 (005), 08.03.05 (001), 08.04 (008), 08.05.01 (009), 08.05.05 (001), 08.05.06 (025), 08.05.06 (030)
Gleysteen, Rod	312	02.07 (012), 03.03 (002), 03.07 (003), 06.06 (003)
Golay, Judith	1385	01.01.02 (005), 05.19 (011)
Gonzales, David	705	08.01 (001)
Gora, Francine H.	386	08.04 (010), 08.04 (020)
Gordon, Bart	682	01.01.01.01 (022), 04.01 (005), 04.03 (010), 04.03.01 (002), 06.09 (013)
Gordon, Carol	25	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Gordon, Kathleen C.	795	04.03 (001), 05.12.08 (001)
Gordon, Margaret	1205	01.01.01.02 (011)
Gorenflo, Louise	1245	03.03 (008), 05.12 (001), 05.18.04 (002)
Gorham, Sara	959	05.08.01 (014), 05.11.03 (020), 05.12 (001)
Gouley, Richard	984	01.01.01.02 (006), 05.04 (014), 05.08.01 (014), 05.18 (002), 05.18.04 (002)
Gouley, Richard	993	05.11.03 (014)
Graber, Dorothy	341	08.01 (001), 08.01 (002), 08.01 (005), 08.04 (010), 08.04 (013), 08.05.04 (005), 08.05.06 (005)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Graber, Henry	340	01.02.03 (002)
Grainger, Jamie	236	09.01 (004)
Grainger, Jamie	238	02.01 (006), 03.07 (007), 04.03 (027)
Granlund, Win	839	08.04 (010), 08.05.06 (005)
Granlund, Win	923	08.04 (010), 08.05.06 (005)
Grant, Jane F.	114	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Graves, Dallas J.	357	05.19 (001), 08.03.01 (009), 08.04 (016), 09.01 (004)
Green, Glenn	628	09.01 (004)
Green, Jody	1099	08.01 (004), 08.04 (018), 08.05.06 (005)
Green, Thomas	636	01.01.01.02 (008), 03.03 (008), 06.05 (016), 06.06 (003)
Greer, Beth	256	01.02.01 (005), 02.08 (046), 08.03.01 (005)
Gregory, James N.	65	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Griffin, James	160	08.01 (004), 08.03.01 (005), 08.05.06 (005)
Griffin, Susan B.	1422	01.01.01.01 (022)
Grizzle, Rodney P.	22	09.01 (004)
Grizzle, Rodney P.	614	09.01 (004)
Groll, Mary F.	1311	01.01.01.02 (006)
Grover, Jean	901	03.05 (002), 08.01 (001), 08.03.05 (001)
Gruhl, Wade	1239	01.01.01.02 (006), 03.05 (008), 03.08 (013), 05.12 (001)
Gumenberg, Kathleen	30	08.01 (001), 08.02 (001), 08.05.06 (005)
Gump, Grace	527	03.08 (013), 08.01 (001)
Gyorke, Joseph	1116	01.01.01.02 (011)
HI American Friends Service Committee	414	See McCoy, Nina R.
HI Council of Navy League of U.S.	379	See Lloyd, Alan
HI Fed. Employee Metal Trades Council	399	See Toyama, Ben
HI Fed. Employee Metal Trades Council	382	See Uyehara, Richard F.
HI, State of; Department of Health	11	See Anderson, Bruce S.
HI, State of; Dept. of Health	371	See Anderson, Bruce S.
HI, State of; House of Representatives	12	See Pepper, Lennard J.
HI, State of; House of Representatives	13	See Suzuki, Nathan

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
HI, State of; Office of State Planning	21	See Masumoto, Harold S.
HI, Univsty of; Center for HI. Studies	377	See Osorio, Jonathan K.
Haaz, Nan	1189	01.01.01.02 (011)
Haduke, Forest	1406	04.03.01 (017)
Hagerman	1379	01.01.01.02 (011), 01.02.03 (002), 03.05 (009)
Haight, Douglas	1359	01.01.01.01 (022), 05.08.01 (014), 05.11.03 (024)
Hailey City Council	948	See Mix, Mary A.
Halfhill, Tom	572	08.01 (001)
Hall, Dale O.	472	08.05.06 (025)
Hall, Dale O.	1377	01.01.01.02 (006)
Hall, David	927	01.01.01.01 (005), 02.04 (017), 04.03 (001), 05.12 (001), 06.05 (012)
Hall, Jennifer	523	01.01.01.01 (005), 05.11.01 (005)
Hall, Pamela	149	08.01 (004), 08.04 (010)
Hall, Patricia	544	01.01.01.02 (006), 03.03 (008), 03.07 (003), 03.08 (010)
Hall, Patricia	548	01.01.01.02 (006), 03.03 (008), 03.07 (003), 03.08 (010)
Hall, Theodore R.	168	08.03.01 (005), 08.05.06 (032)
Hamilton, Bill	176	02.07 (012), 08.01 (001), 08.02 (001), 08.03.01 (003), 08.03.01 (006)
Hamilton, Bill	182	05.10 (021)
Hamilton, Sally	1375	01.01.02 (005)
Hammons, Dorothea	668	01.01.01.02 (011)
Hampton Roads, Planning District Comm.	846	See Collins, Arthur L.
Haney, Mary	336	08.04 (010), 08.05.06 (005)
Haney, Richard	334	08.04 (010)
Hanford Education Action League	1119	See Costner, Brian
Hanford Watch	247	See Knight, Paige
Hanford Watch	253	See Knight, Paige
Hangca, Luis	405	08.05.06 (025), 08.05.07 (005)
Hanggi, Dennis M.	860	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Hanggi, Patricia	882	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Hansen, Adeline	1265	01.01.01.02 (006)
Hansen, Brent	820	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Hanson, Annette	1400	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014), 06.06 (003)
Hanson, Gertie	597	01.01.01.01 (022), 01.01.01.02 (006), 04.03.01 (017), 05.05.01 (016), 05.09 (001), 05.09 (008), 05.10 (012), 05.10 (021), 05.10.02 (016), 06.09 (037)
Hanson, Wes	600	03.05 (022), 03.08 (011), 05.05 (026), 05.09 (002), 05.09 (009), 05.18 (001), 06.09 (035), 08.01 (002)
Harding, Hilary	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Harding, Hilary	308	02.07 (012)
Hardinge, Jeep	803	01.01.01.01 (005), 01.02 (001), 03.04 (010), 03.05 (009), 03.08 (011)
Hardwick, Doris	657	05.10.02 (016)
Harling, Leonard	751	01.01.01.01 (008), 01.01.01.01 (022)
Harper, John	1419	08.01 (001), 08.05.06 (031)
Harrin, Claudia	436	01.01.01.02 (006), 03.08 (010), 05.05 (017)
Harrington, Philip S.	420	04.03 (001), 08.04 (010), 08.04 (013), 08.05.01 (009)
Harris, Betty	1426	01.01.01.02 (011)
Harris, Lisa	1086	01.01.01 (002), 08.01 (001)
Harrison, John T.	1445	02.01 (033), 08.03.01 (013), 08.03.01 (018), 08.03.01 (022), 08.03.03 (001), 08.04 (002), 08.04 (010), 08.04 (012), 08.05.02 (001), 08.05.02 (003), 08.05.02 (004), 08.05.03 (001), 08.05.04 (002), 08.05.06 (005), 08.05.06 (012), 08.05.06 (028)
Harsley, Raleigh G.	162	08.04 (010)
Hart, Andrew	1410	08.04 (010)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Hart, Ann	1437	01.01.01.02 (011), 05.12 (001)
Hart, Marcia	998	01.01.01.01 (022), 01.01.01.02 (006), 05.11.03 (026), 05.12 (001), 05.19 (004)
Hart	831	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Hartman, Diania	769	02.03 (002), 03.08 (011), 05.12 (001)
Harvey, Ian	1095	01.01.01.02 (006), 05.01 (003)
Harvey, William D.	423	01.02.01.02 (006), 03.02 (001)
Harvey-Marose, Kevin	607	01.01.01.02 (006), 02.04 (002), 03.05 (007), 04.03 (001), 05.04 (002), 05.08.01 (014), 07.04 (001)
Haskew, Mark	1328	01.02.03 (002)
Hassell, Jack N.	580	08.04 (010)
Hassell, Mike	666	01.01.01.02 (011), 06.09 (013)
Hastings, Virginia	1159	01.01.01.02 (006)
Haugen, Monna E.	358	02.07 (012), 04.01 (005), 06.02 (006), 06.05 (016), 08.03.01 (009), 08.05.06 (004), 08.05.06 (005), 08.05.06 (006)
Hausrath, Anne	470	01.02 (001), 03.03 (008), 05.10 (016)
Hausrath, Libby	480	01.01.01.01 (022)
Hayball, Brett	1044	01.01.01.02 (006), 01.01.01.02 (026), 02.03 (009), 02.04 (007), 02.04 (031), 02.04 (038), 02.04 (055), 02.08 (013), 02.08 (026), 03.07 (001), 03.07 (008), 04.03 (015), 04.03 (037), 04.03 (052), 05.02 (039), 05.02 (044), 05.03 (002), 05.03 (006), 05.03 (007), 05.05.01 (036), 05.08.01 (014), 05.09 (001), 05.10.02 (017), 05.11.02 (008), 05.12.06 (004), 05.15 (009), 05.18.04 (002), 05.19 (012), 06.05 (016), 06.07 (001), 07 (001), 08.03.01 (015), 08.03.03 (002), 08.03.03 (003), 08.04 (006)
Hayball, Brett	1045	01.01.01.02 (006), 01.01.01.02 (026), 02.03 (009), 02.04 (007), 02.04 (031), 02.04 (038), 02.04 (055), 02.08 (013), 02.08 (026), 03.07 (001), 03.07 (008),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Hayball, Brett	1045	04.03 (015), 04.03 (037), 04.03 (052), 05.02 (039), 05.02 (044), 05.03 (002), 05.03 (006), 05.03 (007), 05.05.01 (036), 05.08.01 (014), 05.09 (001), 05.10.02 (017), 05.11.02 (008), 05.12.06 (004), 05.15 (009), 05.18.04 (002), 05.19 (012), 06.05 (016), 06.07 (001), 07 (001), 08.03.01 (015), 08.03.03 (002), 08.03.03 (003), 08.04 (006)
Heart of America Northwest	1119	See Costner, Brian
Heart of America Northwest	301	See Pollet, Gerald
Heart of America Northwest	349	See Pollet, Gerald
Heart of America Northwest	4	See Anonymous
Heart of America Northwest	294	See Anonymous
Heckler, Hilde	1015	05.08.01 (014), 05.12 (001), 08.01 (005)
Hedgepeth, Dave	232	01.01.01.01 (022), 01.01.01.02 (011), 03.08 (011), 03.08 (012), 04.03 (001), 05.11.01 (008)
Hedgepeth, Dave	444	09.01 (004)
Hedgepeth, David	449	01.01.01.01 (022), 01.01.01.02 (011), 03.08 (011), 03.08 (012), 04.03 (001), 05.11.01 (008)
Heft, Philip	1089	03.07 (003)
Heilman, Paul E.	282	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Heindsmann, Sandra	1201	01.01.01.01 (022), 02.04 (029), 03.05 (008), 05.04 (024)
Helland, Karen K.	463	01.02.01.02 (016), 03.07 (004), 03.08 (010), 05.10.02 (016), 06.05 (016), 08.01 (001)
Henderson, Clay P.	716	08.04 (010)
Henderson, Judy	716	08.04 (010)
Heng, Neda	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Hensel, David	1058	01.01.01.01 (022), 03.05 (007), 03.05 (027), 03.07 (004), 04.01 (001), 04.03 (006), 05.16 (001), 06.03 (013), 06.05 (001), 06.05 (002), 06.07 (001), 08.03.03 (002)
Hensel, David	1059	01.01.01.01 (022), 02.04 (028), 03.05 (007), 03.05 (027),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Hensel, David	1059	03.07 (004), 04.01 (001), 04.03 (058), 05.16 (001), 06.03 (013), 06.05 (001), 06.05 (002), 06.07 (001), 08.03.03 (002), 08.03.03 (003)
Hensley, Charlie	775	08.01 (001)
Henton, Thomas E.	90	08.04 (010), 08.04 (013)
Herbert, Patricia A.	230	01.01.02 (002), 01.02.03 (002), 02.06 (027), 03.01 (001), 04.01 (005), 05.08.01 (025), 06.09 (013), 07.01.01 (003)
Herring, J. Stephen	626	01.02.03 (002), 04.01 (005), 05.10 (002), 06.04.01 (002), 06.05 (003), 06.09 (006), 08.03.03 (005)
Hershinow, David	408	04.03 (001), 05.10.02 (016), 08.01 (001), 08.03.01 (011), 08.04 (008), 08.05.06 (023)
Hershinow, David	417	04.03 (001), 05.10.02 (016), 08.01 (001), 08.03.01 (011), 08.04 (008), 08.05.06 (023)
Herudon, Janet	852	01.01.01.02 (006), 08.04 (018)
Hescheid, Joseph W.	28	05.10 (013), 05.11.01 (006), 05.11.03 (003), 05.11.03 (015)
Heykamp, Elaine	1167	08.01 (001)
Hieb, Mary	814	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Higginbotham, Jan	624	03.03 (008), 04.03 (001), 06.09 (051)
Hilbert, H.	462	01.01.01.02 (006)
Hill, Crag	242	02.01 (030), 04.03 (001)
Hill, Debbie W.	876	01.01.01.02 (011), 01.02.03 (002), 03.08 (011)
Hill, Joy	1141	05.18.04 (002), 08.01 (001)
Hill, Rhonda	656	01.01.01.02 (011)
Hill, Wayne	573	08.01 (001)
Hilmas, Duane	227	09.01 (003)
Hilton Head, SC; Town of	858	See Chapman, Frank R.
Hinzelman, John E.	826	08.01 (002)
Hobbs, Jack	589	03.04.01 (002), 03.05 (008), 03.05.03 (003), 04.03 (005), 04.03 (031), 06.06 (003), 08.01 (001), 08.04 (011), 08.04 (013), 08.05.06 (005)
Hodge, Mary	1139	01.01.01.02 (006)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Hoffman, Marcus	343	06.05 (011), 08.01 (001), 08.01 (004), 08.03.01 (012), 08.04 (010), 08.04 (013)
Hogan, Terry	1292	01.01.01.02 (011)
Holce, Leah	1102	01.01.01.02 (006), 03.05 (002), 05.11.03 (012), 05.12 (001)
Holt, Jane	1392	01.02.03 (002)
Holt, Kenneth W.	744	02.01 (018), 02.03 (017), 02.08 (054), 02.08 (056), 04.04 (010), 05.02 (007), 05.02 (008), 05.02 (016), 05.02 (043), 05.10 (035), 05.10 (038), 05.10 (041), 05.10 (063), 05.10.02 (002), 05.10.02 (003), 05.10.02 (012)
Holtz, Libby	1284	02.08 (002), 04.03 (001), 05.08.01 (014), 08.01 (001)
Hondo, Carolyn	531	01.01.01.02 (006), 03.01 (004), 07 (001)
Honicker, Jeannine	444	09.01 (004)
Honicker, Jeannine	448	03.07 (004), 04.03 (021), 06.07 (001), 08.04 (001)
Honicker, Jeannine	1231	04.03 (005), 04.03.01 (001)
Hoover, Elizabeth	1203	01.01.01.02 (011)
Horan, John R.	1043	01.01.01.01 (029), 01.02.03 (001), 01.02.03 (002), 06.07 (001)
Horton, Lynn B.	842	08.04 (014)
Horton, Lynn B.	1123	08.04 (014)
Horton, Patricia	555	08.04 (010)
Horton, Peter	555	08.04 (010)
House, Rupert	751	01.01.01.01 (008), 01.01.01.01 (022)
House of Representatives	682	See Gordon, Bart
Howard, Steven	1295	01.01.01.02 (011)
Howell, James	704	08.01 (001)
Howes, Deborah	252	03.05 (024), 04.03 (031), 05.08.03 (003), 05.12 (001), 05.12.03 (002)
Hubbard, Lela	403	08.01 (001), 08.01 (004), 08.03.01 (004), 08.03.01 (005), 08.03.01 (011), 08.03.05 (001), 08.05.11 (001)
Huber, Arlene	798	01.01.01.02 (006)
Hudson, Jackie	356	08.01 (001), 08.03.01 (005)
Hudson, John	1315	01.01.01.02 (011)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Hughel, Dan	1326	01.01.01.02 (014)
Hughes, William F.	834	05.05.01 (016)
Hulett, Chris	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Hulett, Chris	916	01.01.02 (006), 01.02 (001), 01.02.03 (002), 03.08 (010), 04.03 (001), 04.03.01 (017), 04.05 (018), 05.12 (001), 05.13.01 (002), 08.01 (002)
Hulette, Christin	1161	01.02.03 (002), 03.03 (008), 03.08 (013), 04.03 (001), 05.12 (001), 05.13.01 (002), 06.04 (004), 07.04 (001), 08.01 (002)
Hultsch, Roland A.	802	01.01.01.01 (004), 01.02.01.01 (005)
Hungerford, Clark	619	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Hungerford, Clark	1115	01.02.03 (002)
Hunt, Sandra	670	08.01 (001), 08.04 (010)
ID, State of	924	02.01 (024), 02.01 (030), 02.02 (002), 02.03 (012), 02.04 (020), 02.04 (030), 02.04 (040), 02.04 (043), 02.04 (044), 02.04 (045), 02.04 (046), 02.04 (047), 02.04 (048), 02.04 (049), 02.04 (050), 02.04 (051), 02.04 (052), 02.04 (053), 02.04 (054), 02.04 (061), 02.08 (037), 03.04 (003), 03.04.01 (007), 04.01 (001), 04.02 (001), 04.03 (021), 04.03 (039), 04.03 (054), 04.03 (061), 04.03.01 (007), 04.03.01 (014), 04.03.01 (028), 04.03.01 (031), 04.03.01 (032), 04.03.01 (033), 05.02 (006), 05.02 (010), 05.02 (011), 05.02 (012), 05.02 (013), 05.02 (014), 05.02 (015), 05.02 (018), 05.02 (019), 05.02 (020), 05.02 (021), 05.02 (022), 05.02 (023), 05.02 (024), 05.02 (025), 05.02 (026), 05.02 (027), 05.02 (028), 05.02 (029), 05.02 (030), 05.02 (031), 05.02 (032), 05.02 (033), 05.02 (034), 05.02 (035), 05.02 (036), 05.02 (037), 05.02 (038), 05.02 (041), 05.02 (047), 05.02 (048), 05.02 (049),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
----- ID, State of	----- 924	----- 05.02 (050), 05.02 (052), 05.02 (055), 05.02 (056), 05.03 (001), 05.04 (008), 05.04 (011), 05.04 (013), 05.04 (022), 05.04 (026), 05.05 (017), 05.05.01 (001), 05.05.01 (002), 05.05.01 (003), 05.05.01 (004), 05.05.01 (006), 05.05.01 (007), 05.05.01 (008), 05.05.01 (009), 05.05.01 (010), 05.05.01 (011), 05.05.01 (012), 05.05.01 (013), 05.05.01 (014), 05.05.01 (016), 05.05.01 (022), 05.05.01 (023), 05.05.01 (024), 05.05.01 (025), 05.05.01 (037), 05.05.01 (041), 05.06 (004), 05.06 (005), 05.06 (007), 05.06 (008), 05.06 (012), 05.07 (001), 05.07 (002), 05.07 (003), 05.07 (006), 05.07 (007), 05.08 (001), 05.08 (002), 05.08 (008), 05.08.01 (001), 05.08.01 (002), 05.08.01 (010), 05.08.01 (019), 05.08.01 (020), 05.08.01 (027), 05.08.01 (029), 05.08.01 (031), 05.08.01 (032), 05.08.01 (040), 05.08.01 (042), 05.08.01 (048), 05.08.01 (051), 05.08.01 (052), 05.08.01 (055), 05.08.02 (002), 05.08.02 (004), 05.08.02 (006), 05.08.03 (001), 05.08.03 (013), 05.08.03 (014), 05.09 (001), 05.09 (008), 05.09 (016), 05.09 (017), 05.09 (019), 05.10 (001), 05.10 (003), 05.10 (017), 05.10 (025), 05.10 (026), 05.10 (039), 05.10 (040), 05.10 (043), 05.10 (045), 05.10 (047), 05.10 (050), 05.10 (051), 05.10 (052), 05.10 (063), 05.10.01 (001), 05.10.01 (002), 05.10.02 (001), 05.10.02 (002), 05.10.02 (004), 05.10.02 (009), 05.10.02 (013), 05.10.02 (017), 05.10.02 (024), 05.10.02 (025), 05.10.02 (027), 05.11.01 (004), 05.11.03 (005), 05.11.03 (006), 05.11.03 (010), 05.11.03 (016), 05.11.03 (019), 05.11.03 (021), 05.11.03 (023), 05.11.03 (027), 05.11.03 (028), 05.11.03 (030), 05.11.03 (032), 05.11.03 (033),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
ID, State of	924	05.11.03.03 (001), 05.12 (006), 05.12 (014), 05.12 (016), 05.12.02 (001), 05.12.05 (002), 05.12.06 (001), 05.13.01 (004), 05.15 (011), 05.15 (013), 05.17 (001), 05.17 (002), 05.18.01 (009), 05.19 (005), 05.19 (009), 05.19 (017), 06.01 (014), 06.02 (009), 06.02 (022), 06.02 (028), 06.02 (030), 06.02 (031), 06.03 (004), 06.03 (005), 06.03 (006), 06.03.01 (002), 06.04 (011), 06.06 (007), 06.06 (009), 06.08 (001), 06.09 (047), 07.01 (002), 07.01 (003), 07.01 (007), 07.01.02 (001), 07.01.02 (005), 07.01.02 (006), 07.01.03 (002), 07.01.04 (001), 07.02 (001), 07.02.01 (002), 07.02.01 (004), 07.02.01 (005), 07.02.02 (001), 07.02.02 (002), 07.02.04 (003), 07.02.04 (004), 07.04 (003), 07.04 (006), 07.04 (007), 08.05.05 (002), 08.05.05 (003), 08.05.05 (004), 08.05.05 (007), 08.05.05 (008), 08.05.05 (009), 08.05.05 (010), 08.05.06 (013), 08.05.09 (004), 08.05.10 (004), 08.05.10 (009), 08.05.10 (011), 08.05.11 (008), 08.06 (009), 08.06 (013)
Ibele, Margaret R.	112	06.05 (011), 08.01 (001)
Idaho State Historical Society	857	See Yohe, Robert M.
Idaho, Office of Attorney General	924	
Idaho, State of	483	See Andrus, Cecil D.
Idaho, State of	538	See Andrus, Cecil D.
Iezza, Cora	373	08.03.01 (018), 08.03.02 (001), 08.05.02 (003), 08.05.04 (001), 08.05.04 (002)
Inabinett, Nathan	894	03.05 (007), 08.01 (001)
Indeterminate, Andrew A.	323	08.03.01 (005), 08.04 (010), 08.05.03 (003), 08.05.06 (027)
Indeterminate, Clint A.	775	08.01 (001)
Indeterminate, Illegible	625	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Indeterminate, Illegible	816	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Indeterminate, Indeterminate,illegible	775	08.01 (001)
Indeterminate, Kathleen	775	08.01 (001)
Indeterminate, Michail	775	08.01 (001)
Indeterminate, Mrs. Richard	760	01.02.03 (002), 03.08 (011)
Indeterminate	775	08.01 (001)
Indeterminate, Pat	821	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Indeterminate, Patricia L.	323	08.03.01 (005), 08.04 (010), 08.05.03 (003), 08.05.06 (027)
Indeterminate, Richard L.	760	01.02.03 (002), 03.08 (011)
Indeterminate, Teresa	775	08.01 (001)
Indeterminate,illegible, Indeterminate,illegible	775	08.01 (001)
Ingalls, Martha	781	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Institute for Energy & Env. Research	1119	See Costner, Brian
Integrity Research	296	See Ulbright, Edgar P.
Inzer, Jo	478	02.01 (003), 03.02 (002), 05.05 (017), 05.10 (022), 05.11.03 (037), 06.07 (009)
Inzer, Jo	543	03.02 (002), 05.05 (017), 05.10 (022), 05.10 (029), 05.10.02 (017), 05.11.03 (037), 06.01.01 (001), 06.07 (009)
Irwin, Donald	494	01.01.01.01 (022)
Iwanski, Myron	868	01.01.01.01 (040), 02.01 (026), 05.10.02 (020), 05.12 (015)
Janes, Pauline	655	01.01.01.02 (011)
Jaquet, Wendy	990	01.01.01.02 (006), 05.05 (015), 05.08.01 (014), 05.11.03 (024)
Jay, Elisabeth	473	02.01 (003), 03.03 (008), 05.10 (006), 06.01 (002), 06.01.01 (001)
Jay, Elisabeth	539	02.01 (003), 03.03 (008), 05.10 (006), 06.01 (002), 06.01.01 (001)
Jay, Richard	1378	01.01.01.02 (006)
Jayne, Gerald A.	1023	05.06 (003), 05.06 (012), 05.19 (003)
Jayne, Jerry	1022	03.08 (007), 05.06 (003), 05.06 (012), 05.19 (003)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Jentry, Boyd	1220	01.01.01.01 (022)
Jessen, Neal	1390	01.01.01.02 (006)
Jobe, Lowell A.	874	01.02.03 (002), 02.07 (001), 03.05.05 (006), 06.05 (001), 06.05 (026), 06.07 (001)
Johnson, Barry L.	287	09 (021)
Johnson, Elaine	1248	01.02.03 (002)
Johnson, Heather	342	08.01 (001), 08.04 (010), 08.04 (013), 08.04 (014), 08.04 (019)
Johnson, Heather	524	05.16 (002)
Johnson, Helen G.	684	05.10.02 (007), 05.18.01 (002), 08.01 (001), 08.01 (005)
Johnson, Leroy	500	08.01 (002)
Johnson, Leroy	664	08.01 (002), 08.03.05 (006)
Johnson, Norma	1402	06.09 (013), 08.04 (010), 08.05.05 (002)
Johnson, Sally	1249	01.01.01.01 (022)
Johnston, Anne	310	03.05 (018), 03.08 (011), 04.03 (001), 05.10.02 (016), 06.09 (013)
Jolley, Robert B.	440	01.01.01.01 (019), 01.01.01.02 (011), 01.02.03 (002), 05.10 (034)
Jolley, Robert B.	443	01.01.01.01 (019), 01.01.01.02 (011), 01.02.03 (002), 05.10 (034)
Jones, Eleanor	1092	08.04 (010), 08.04 (015)
Jones, Jewel	1227	01.01.01.02 (011)
Jones, Michael	411	03.03 (008), 08.03.01 (022), 08.03.03 (001), 08.03.05 (002), 08.04 (001), 08.05.04 (002), 08.05.06 (007), 08.05.06 (027), 08.05.06 (028), 08.06 (005)
Jones, Michael	415	03.03 (008), 08.03.01 (022), 08.04 (001), 08.04 (020), 08.05.06 (007), 08.05.06 (028), 08.06 (005)
Jones, Michael	849	02.01 (002), 02.01 (013), 05.10 (063), 05.11.03 (031), 05.19 (019), 08.03.01 (005), 08.03.01 (018), 08.03.01 (022), 08.03.03 (001), 08.03.03 (002), 08.03.05 (002), 08.04 (001), 08.04 (004), 08.04 (008), 08.04 (023), 08.05.01 (004), 08.05.04 (002), 08.05.04 (007),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Jones, Michael	849	08.05.06 (007), 08.05.06 (010), 08.05.06 (015), 08.05.06 (016), 08.05.06 (017), 08.05.06 (018), 08.05.06 (019), 08.05.06 (020), 08.05.06 (023), 08.05.06 (024), 08.05.10 (001), 08.05.10 (005), 08.05.10 (007), 08.06 (005), 08.06 (010), 08.06 (011), 08.06 (017)
Jordan, Evonne	662	02.07 (012)
Jordan, Thomas	887	08.01 (001), 08.04 (010)
Jull, Paula	869	01.01.01.01 (022), 01.01.01.02 (006), 04.01 (005)
Ka Lahui Hawaii	1345	See Shaver, Lale
Ka Lahui Hawaii	369	See Lucas, Pam
Ka Lahui Hawaii, Oahu Island Caucus	372	See Nahoopii, Kawika
Ka Lahui Hawaii, Oahu Island Caucus	410	See Nahoopii, Kawika
Kadak, Andrew C.	848	02.03 (015), 06.08 (000), 06.08 (007)
Kaeser, Norma D.	7	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Kahunahana Castro Howell, Anna Marie	398	08.01 (001)
Kain, Helene	318	08.04 (010)
Kaiser, Justine	616	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kakalia, Clara	380	08.01 (001), 08.01 (002), 08.03.01 (011), 08.03.04 (001), 08.03.05 (001), 08.05.02 (003), 08.05.06 (005)
Kalbus, Richard	1436	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014)
Kanouff, J. M.	812	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kaufmann, Theresa M.	1036	01.02.03 (002), 04.01 (001), 04.03 (001), 06.01 (005), 06.05 (002), 06.05 (016), 06.07 (001), 06.09 (042)
Kaufmann, Theresa M.	1037	01.02.03 (002), 04.01 (001), 04.03 (001), 06.01 (005), 06.05 (002), 06.05 (016), 06.07 (001), 06.09 (042)
Kay, Jerome	593	08.01 (002)
Keeney, Harold S.	96	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Keisel, Allison	966	01.01.01.01 (022), 03.05 (004), 05.05.01 (016)
Kellam, Janet K.	213	01.01.01.02 (006), 04.03 (001), 05.08.01 (014), 06.05 (010)
Kellam, Janet K.	853	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kelly, Elizabeth	679	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kelly, Elizabeth	871	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kelly, Mary T.	915	02.06 (034), 02.07 (006), 02.08 (057), 03.08 (010), 04.01 (008), 06.02 (003)
Kelly-Lind, Ellen	194	02.07 (012), 02.08 (002), 06.05 (011), 08.01 (001), 08.03.01 (001), 08.03.01 (003), 08.03.01 (004), 08.03.01 (005)
Kelly-Lind, Ellen	212	01.02.03 (002), 02.08 (002), 06.05 (011), 07.04 (001), 08.03.01 (003)
Kempthorne, Dirk	1053	03.01 (014), 06.06 (003), 07 (001)
Kempthorne, Dirk	1054	03.01 (014), 06.06 (003), 07 (001)
Kennedy, Alexandra	785	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kennedy, Nancy	6	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Kenney, Dick	1026	01.02.03 (002), 02.07 (001), 03.05.05 (011), 06.05 (016)
Kepano, Virginia A.	409	08.01 (001), 08.03.02 (001), 08.05.06 (005), 08.06 (001)
Kepano, Virginia A.	418	05.11.03 (026), 08.01 (001), 08.03.05 (002), 08.04 (010)
Kerrigan, Laurie	1105	01.01.01.02 (006), 04.03 (001)
Kessler, Marc A.	464	01.01.01.01 (008), 01.02.03 (002), 04.03 (001)
Kessler, Peter	1244	02.07 (012)
Kimball, Matthew	1420	08.01 (004)
Kimmich, Scott	1004	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Kinard, Deborah	1243	09.01 (004)
Kincheloe, Karen	1266	01.01.01.02 (006)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
King, David	1333	01.01.01.02 (011), 05.18.04 (002)
King, Joan O.	148	02.07 (013), 03.08 (010)
King, Marilee	1148	01.01.01.02 (006)
King, Neil	437	01.02.03 (002), 02.08 (002), 03.08 (010), 05.05 (017), 05.05.01 (016)
King, Neil	993	05.11.03 (014)
Kipping, David	965	01.01.01.01 (022), 06.06 (003), 08.03.03 (002)
Kirk, Amy	925	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Kirkpatrick, B. J.	935	02.07 (002), 03.08 (011), 06.09 (013), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Kitsap County, WA; Bd. of Commissioners	839	See Granlund, Win
Kitsap County, WA; Dept. of Emerg. Mgmt.	765	See Mann, Phylliss A.
Klein, Richard F.	761	08.04 (018)
Klein, Robin	264	02.04 (010), 03.07 (003), 05.09 (001), 05.10 (023), 05.11.02 (001), 05.12.08 (001), 05.18.04 (002), 06.02 (028), 06.05 (016), 06.09 (013)
Kleinklof, Karl	1149	05.05.01 (016)
Knapp, Malcolm R.	1125	09.01 (010)
Knapp, Wynne	922	04.03 (017)
Knecht, Dieter	1302	02.08 (015), 08.01 (005)
Knight, Carol	683	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Knight, Carol	1091	01.01.01.01 (008), 03.04 (010), 03.07 (004)
Knight, Glendel	1355	01.01.01.02 (006)
Knight, Joseph	1347	01.01.01.02 (011)
Knight, Paige	247	01.01.01.01 (022), 04.03 (001), 06.01.01 (001), 06.09 (043), 08.03.01 (013)
Knight, Paige	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Knight, Paige	253	01.01.01.01 (022), 01.01.01.01 (041), 04.03 (001), 06.09 (043), 08.03.01 (013)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Knight, Paige	268	09.01 (004)
Knight, Paige	270	01.01.01.01 (022), 02.01 (023), 02.06 (001), 02.08 (002), 03.01 (001), 03.01 (008), 03.08 (012), 04.03 (001), 05.09 (002), 05.10 (021), 05.10 (055), 05.11.03 (003), 05.15 (024), 05.16 (001), 05.19 (004), 06.05 (011), 06.05 (016), 06.05 (030)
Knolls Action Project	1119	See Costner, Brian
Knolls Action Project	188	See Mackay, Daniel
Knolls Action Project	202	See Mackay, Daniel
Knolls Action Project	194	See Kelly-Lind, Ellen
Knolls Action Project	212	See Kelly-Lind, Ellen
Knotts, Ronald E.	640	01.02.01.02 (014), 03.05 (008), 04.01 (005)
Knox, Harry W.	913	05.05.01 (016)
Koben, Marcia	1082	01.01.01.02 (006)
Kocher, Ann	824	03.07 (003), 05.08.02 (009)
Kocher, Warren	442	09.01 (004)
Kocher, Warren	824	03.07 (003), 05.08.02 (009)
Koeberl, Dwight D.	210	03.03 (013), 08.01 (001)
Kogut, William	115	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Kolb, Catherine	884	08.01 (001), 08.04 (010), 08.04 (014)
Koslowsky, George	919	04.03 (001), 08.01 (007), 08.03.01 (003), 08.03.01 (005)
Kotowicz Lloyd, Ann	653	01.01.01.02 (011)
Kramer, Angela	881	05.10 (006), 05.10.02 (010), 05.19 (006), 05.19 (011), 08.04 (014)
Kresge, Michele	482	01.02.03 (002), 05.10 (014), 06.01.01 (001), 06.02 (015), 06.05 (002)
Kuhlman, Henry	530	02.07 (001), 08.01 (001), 08.04 (014)
Lachey, Jeanette	775	08.01 (001)
Lafargue, Genevieve	485	08.01 (001)
Lagenaur, Mary Beth	1256	01.01.01.01 (022), 01.01.01.02 (006), 04.03 (001), 05.08.01 (014)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Lagergren, Ginna	233	05.08.01 (014), 05.09 (004), 06.05 (002)
Lagergren, Ken	233	05.08.01 (014), 05.09 (004), 06.05 (002)
Lambert, James	191	05.10.02 (017), 05.10.02 (019), 08.03.01 (005), 08.03.05 (001), 08.05.06 (001)
Lambert, James	199	05.10.02 (017), 06.09 (014), 08.05.05 (003)
Lambert, James R.	214	05.10.02 (017), 05.10.02 (019), 08.03.01 (005), 08.03.05 (001), 08.05.06 (001)
Lambert Holenstein, Kathryn (Cherie)	245	02.06 (001), 02.08 (033), 03.05 (008), 04.03 (001), 04.03 (021), 06.07 (001)
Lambert Holenstein, Kathryn (Cherie)	266	02.06 (001), 04.03 (001), 06.07 (001)
Lambolot, James	200	08.01 (002)
Lamotte, Christian	1009	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Lancaster, Colleen	928	01.02.03 (002), 03.05 (006), 06.02 (006), 06.05 (016), 06.06 (003), 07 (001)
Lane, Lois	1147	08.01 (001)
Lang, Lance	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Lang, Lance	305	02.06 (037), 03.03 (008), 04.03 (001), 06.09 (013)
Langworthy, Helen	1288	01.02.03 (002)
Lanigan, Karen	1164	01.01.01.01 (022), 01.02.01.02 (017)
Lanigan, Steve	1275	03.05 (007), 05.12 (001)
Larson, Jim	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Larson, Jim	304	02.07 (012), 05.08.02 (010)
Larson, Lester	665	01.01.01.02 (011), 03.03 (005)
Laverty, Denise	985	01.01.01.01 (022), 05.09 (001), 05.15 (014)
Laverty, Denise	997	01.01.01.01 (022), 05.09 (001), 05.15 (014)
Law, Joe M.	818	01.02.03 (002), 08.03.05 (006)
Lawrence, Linda	490	08.04 (010), 08.04 (013)
Lawson, Loretta	1260	01.01.01.02 (006)
Lay, Amanda	775	08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Lee, James	295	02.07 (001), 02.07 (012)
Lee, Janet	698	08.01 (004)
Lee, John G.	851	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Lefcoski, Jack	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Lefcoski, Jack	347	01.02.03 (002), 06.05 (020), 09.01 (004)
Lehrad, Klaus	815	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Lehto, Kevin	1186	05.12 (001)
Leichtman, Kal	558	08.01 (005)
Lein, Ray H.	132	08.05.04 (004)
Leistiko, Ron	246	03.08 (001), 05.11.02 (001), 05.11.02 (006), 05.12.03 (001), 05.12.06 (002), 05.13 (001)
Leistiko, Ron	262	02.04 (001), 03.08 (001), 03.08 (011), 04.03 (001), 05.10.02 (016), 05.11.02 (001), 05.11.03 (025), 05.12.03 (001), 05.12.06 (002), 05.13 (001)
Leming, Earl C.	515	01.01.01.01 (005), 01.02 (001), 02.01 (004), 02.01 (005), 02.01 (011), 02.02 (001), 02.03 (024), 02.08 (027), 03.06 (001), 04.03.01 (005), 04.03.01 (007), 05.04 (015), 05.04 (018), 05.05 (011), 05.05 (013), 05.05 (024), 05.05 (028), 05.06 (001), 05.06 (002), 05.08 (006), 05.08.01 (003), 05.08.01 (004), 05.08.01 (005), 05.08.01 (008), 05.08.01 (009), 05.08.01 (012), 05.08.01 (035), 05.08.01 (037), 05.08.01 (056), 05.11.02 (005), 05.12.05 (001), 05.12.07.01 (001), 05.19 (014), 06.01.01 (001), 06.02 (013), 06.02 (014), 06.03 (001), 06.03 (003), 06.03 (011), 06.03 (013), 06.07 (001), 08.04 (025)
Lenker, John	977	03.05.05 (012)
Lenkner, Charles	970	02 (001), 03.07 (004), 03.08 (013), 04.03.01 (017)
Leslie, Bret	425	02.04 (060), 04.01 (002), 04.03 (001), 04.03 (047),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Leslie, Bret	425	05.10.01 (009), 06.05 (001), 06.05 (002), 08.01 (001), 08.03.03 (002), 08.04 (019)
Leslie, Bret	426	09.01 (004)
Leusch, Peter	800	01.01.01.02 (006), 05.12 (001), 07.04 (004)
Lewallen, Debra J.	673	01.01.01.02 (011), 05.10 (061)
Lewnow, Richard	221	01.01.01.02 (004)
Liborio, Kevin	400	08.01 (003)
Lieberman, Bernard	1327	01.02.03 (002)
Lindquist, Jeff	775	08.01 (001)
Lingworthy, Mariel	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Linnell, William S.	170	05.10.02 (017), 05.19 (016)
Little, Ben	822	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Little, Glen	1112	06.05 (001)
Lloyd, Alan	379	08.04 (010), 08.04 (018)
Lockwood, Frank	992	06.03 (002)
Loeb, Bernard S.	129	09.01 (003)
Logan, John A.	1008	04.03 (047), 05.08.01 (015), 05.18.01 (008), 05.18.01 (015), 07.01 (008), 07.01.02 (007), 07.01.03 (006)
Long, Everett	790	01.01.01.01 (022), 03.08 (011)
Longley, Bee	741	02.06 (001), 02.08 (001)
Loo, Henry	773	01.01.03 (001), 06.09 (003)
Loosier, Carla	516	05.10 (030)
Loosier, Carla	518	05.04 (019), 05.12.08 (001), 06.04.01 (002)
Loosier, Carla S.	903	02.04 (010), 02.06 (033), 03.05 (007), 04.03 (049), 05.10.02 (007), 05.18 (002), 05.18.01 (002), 05.19 (004)
Lorella, Kathy C.	100	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Lotts, A. L.	186	01.01.01.01 (029), 04.03 (032), 05.12.06 (002), 06.03 (011), 06.09 (005)
Lotts, A. L.	452	04.03.02 (006), 04.05 (019), 05.12 (007), 06.07 (001),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Lotts, A. L.	452	06.09 (005)
Lotts, A. L.	455	01.01.01.01 (029), 04.03 (032), 05.12.06 (002), 06.03 (011), 06.09 (005)
Louch, Charles D.	134	02.06 (025), 08.04 (010), 08.05.06 (012)
Lousen, Patti	556	05.08.01 (014), 05.09 (001), 06.05 (002)
Lowe, Frances E.	1317	01.01.01.02 (011)
Lucas, Pam	369	08.01 (001), 08.03.02 (001), 08.03.05 (001), 08.05.02 (003), 08.05.03 (003), 08.05.05 (001), 08.05.06 (005), 08.05.06 (023)
Lucas, Pamela L.	392	02.08 (001), 08.01 (001), 08.03.05 (001), 08.05.06 (005), 08.05.06 (023)
Ludders, Beverly	1281	01.01.01.02 (006), 07.02.01 (003)
Lundstedt, Tom	73	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Luthy, Louise	78	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Luxem, David A	241	01.01.01 (002), 05.12 (001), 08.01 (001)
Lynch, Janet	663	02.07 (012)
MClemore, Janis	1278	01.01.01.02 (020), 06.09 (013), 08.04 (010)
Mackay, Daniel	188	04.03 (019), 04.04 (008), 04.04.01 (002)
Mackay, Daniel	202	02.03.01 (003), 03.03 (008), 06.01 (002), 06.01.01 (001), 06.02 (021), 06.05 (001)
Maestas, Herman	794	01.02.03 (002)
Magee, Joan	117	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Mager, Talmon R.	62	02.06 (032), 06.09 (007)
Maginnis, Paul	509	08.01 (001)
Maikmus, Mary	532	01.01.01.01 (008), 01.01.01.02 (006), 01.02.01.02 (017), 05.05.01 (016), 05.12 (001)
Malama, Kaonohi	375	08.01 (004), 08.04 (010), 08.05.06 (006)
Malan, Linda	110	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Mallant, Lisa J.	10	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Malone, Mrs. Paul	1176	01.01.01.02 (006)
Malone, Paul	1176	01.01.01.02 (006)
Malone, Terence W.	777	04.01 (005), 08.01 (002), 08.01 (004), 08.04 (010), 08.04 (014), 08.04 (027), 08.05.07 (003)
Manheimer, Elaine	147	03.03 (008), 04.01 (005), 07 (001), 08.03.01 (005), 08.03.01 (008), 08.03.03 (001), 08.03.03 (002), 08.03.05 (001), 08.04 (026), 08.05.01 (001), 08.05.01 (009), 08.05.03 (001), 08.05.05 (002), 08.05.06 (026), 08.05.06 (028), 08.06 (003), 08.06 (011)
Manheimer, Elaine	344	02.04 (010), 03.05 (005), 03.08 (011), 04.01 (005), 06.05 (014), 06.05 (016), 08.01 (001), 08.03.01 (005), 08.03.01 (012), 08.03.01 (022), 08.04 (008), 08.04 (010), 08.04 (014), 08.04 (022), 08.04 (026), 08.05.01 (001), 08.05.01 (009), 08.05.03 (001), 08.05.05 (002), 08.05.06 (026), 08.05.06 (027), 08.05.10 (002), 08.05.10 (003), 08.05.10 (008), 08.06 (003), 08.06 (007), 08.06 (008), 08.06 (011), 08.06 (015), 08.06 (016)
Manheimer, Elaine	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Manheimer, Elaine	1344	03.08 (011), 06.06 (003), 07.04 (001), 08.01 (001), 08.03.05 (002), 08.04 (010), 08.04 (013), 08.04 (014)
Mann, Phylliss A.	765	01.02.01.02 (011), 08.01 (001), 08.04 (003), 08.04 (010), 08.05.05 (002), 08.05.06 (005), 08.05.07 (003), 08.05.07 (006), 08.05.07 (007), 08.05.07 (008)
Manning, Lillian	1357	01.01.01.01 (022), 06.09 (019)
Manning, Lillian	1432	01.01.01.01 (022), 05.09 (001)
Manning, Mary	1252	08.04 (010), 08.04 (013)
Marcus, Joyce	787	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Marnes, Rondel	775	08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Martensen, Charles	1403	01.01.01.02 (006)
Martensen, Margaret	1403	01.01.01.02 (006)
Martin, Clarence	339	08.01 (001), 08.01 (002), 08.05.05 (005)
Martin, Marilyn	945	01.02.03 (002), 05.12 (001)
Martin, Pauline	1211	01.01.01.02 (011)
Martin, Terry	566	05.12 (001)
Mary E. Theler Community Center	136	See Wentlandt, Carol
Masumoto, Harold S.	21	08.01 (001), 08.03.02 (001), 08.03.02 (002)
Mathews, James C.	492	08.01 (001)
Matsu-Pissot, Yuki	1234	09.01 (004)
Matthews, R. S.	153	02.08 (023), 04.03 (057), 05.10 (027), 08.05.11 (002), 08.05.11 (003)
Matthews, R. S.	643	02.08 (023), 04.03 (057), 05.10 (027), 08.05.11 (002), 08.05.11 (003)
Mattulat, Judy	1152	01.01.01.02 (006)
Matz, Joey	889	08.01 (001), 08.04 (014)
Mazon, Mike	220	03.08 (019), 06.05 (004)
Mazon, Mike	226	09.01 (004)
McAuley, Mike	1305	01.01.01.02 (006)
McCabe, Amy	444	09.01 (004)
McCabe, Amy	447	01.01.01.02 (011), 02.03 (007), 02.04 (021), 02.04 (041), 02.07 (007), 03.04 (008), 04.03 (041), 04.03.01 (001), 04.03.01 (002), 04.03.01 (006), 05.04 (027), 05.05 (024), 06.07 (015)
McCabe, Amy	1011	01.01.01.02 (011), 02.03 (007), 02.04 (021), 02.04 (041), 02.07 (007), 03.04 (008), 04.03 (041), 04.03.01 (001), 04.03.01 (002), 04.03.01 (006), 05.04 (027), 05.05 (024), 06.07 (015)
McCann, Anita	1261	01.01.02 (005)
McCollen, Lyn	542	03.08 (010), 05.09 (001), 05.10 (031), 05.10.02 (003), 05.12 (001), 05.13.04 (001)
McCombs, Patricia A.	678	08.04 (010)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
McConnell, M. R.	878	08.04 (010)
McCoy, Mildred	1440	08.01 (001)
McCoy, Nina R.	401	03.01 (001), 08.01 (001), 08.01 (005), 08.03.01 (004), 08.04 (010), 08.04 (011), 08.04 (013), 08.04 (014), 08.04 (015), 08.05.02 (004)
McCoy, Nina R.	402	03.08 (010)
McCoy, Nina R.	414	08.01 (004), 08.03.01 (001), 08.04 (010), 08.04 (011), 08.04 (013), 08.04 (014), 08.05.02 (004), 08.05.04 (003)
McCulloch, Betty	810	08.04 (013), 08.04 (014)
McDaniels, Trimelda	1034	02.08 (002), 03.08 (011), 04.03 (001), 05.10 (029), 05.10.02 (002), 05.10.02 (007), 05.13.01 (001)
McDaniels, Trimelda C.	1049	02.04 (011), 03.04.01 (002), 03.08 (011), 04.01 (001), 05.10.02 (002), 05.11.03 (001), 06.09 (008), 09.01 (004)
McDaniels, Trimelda C.	1050	02.04 (011), 03.04.01 (002), 03.08 (011), 04.01 (001), 05.10.02 (002), 05.11.03 (001), 06.09 (008), 09.01 (004)
McDaniels, Trimelda C.	1070	09.01 (004)
McDaniels, Trimelda	1277	01.01.01.02 (006), 02.04 (019), 03.05 (008)
McDermott, Vincent	567	08.04 (013)
McDonald, Tim	1128	08.03.01 (013), 08.04 (010)
McDonald, Timothy	899	05.12.06 (002), 05.12.07.01 (002), 05.13.02 (006), 08.03.01 (013)
McDonald, Timothy	1077	05.12.06 (002), 05.12.07.01 (002), 05.13.02 (006), 08.03.01 (013)
McElhinney, Gwynne	477	04.03 (001), 05.05 (014), 05.05 (015), 05.05.01 (034), 05.08.01 (014), 06.05 (002)
McElhinney, Gwynne	541	04.03 (001), 05.05 (014), 05.05 (015), 05.05.01 (034), 05.08.01 (014), 06.05 (002)
McEnaney, Robert	545	02.04 (001), 04.01 (005), 04.03 (001), 05.18.04 (001), 06.01 (005), 06.01.01 (001), 06.02 (007), 06.02 (032), 06.06 (006), 07.01 (004)
McEnaney, Robert	549	06.01.01 (001), 06.02 (007), 06.06 (002)
McFarlane, Harold F.	278	01.01.01.01 (002), 01.01.02 (007), 06.05 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
McFaull, David R.	88	08.04 (010)
McGehee, Connie	1206	01.01.01.02 (011), 03.03 (008)
McGhee, Charles	1383	01.01.01.02 (011)
McGinnis, Anna	163	08.04 (010)
McGrath, James	1013	01.01.01.01 (001), 02.08 (009)
McGrath, Patty	1395	01.01.01.02 (006), 05.08.01 (014), 07.02.01 (003)
McKnight, Virginia	1397	01.01.01.02 (011)
McLaughlin, Dennis	1314	01.01.01.01 (022), 01.01.01.02 (013), 03.05 (008)
McLaughlin, Pam	1168	03.04 (014)
McLaughlin, Pam	1289	01.01.01.01 (008), 01.02.03 (002), 02.04 (060), 04.03 (001), 05.12 (001)
McNabb, Harry O.	1322	01.01.01.02 (011)
McReynolds, Susan	1224	01.01.01.02 (011)
McReynolds, Tom	1393	01.01.01.02 (006), 01.01.02 (005)
McWhorter, Don	628	09.01 (004)
McWhorter, Donald L.	823	02.01 (014), 02.03 (018), 04.03 (001), 04.03 (005), 04.04 (001), 05.10.02 (002), 05.15 (002), 08.04 (001), 08.05.11 (003), 08.05.11 (005)
Meacham, Brian E.	797	01.01.01.01 (004), 01.02.01.02 (004), 01.02.03 (002), 03.05 (008), 04.03 (001), 05.13.04 (001), 05.19 (011), 06.01 (002), 06.02 (035), 06.04 (001), 07.04 (001)
Mead, David	992	06.03 (002)
Medin, M.	74	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Medwell, Nancy	118	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Megrue, Maxey	19	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Megrue, Maxey	53	03.08 (010)
Meigs, Marilyn F.	235	06.02 (010), 06.04 (010)
Meigs, Marilyn F.	291	02.04 (004), 04.03 (027), 06.02 (010)
Meigs, Marilyn F.	300	04.03 (027)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Meigs, Marilyn F.	424	02.04 (004), 04.03 (027), 06.04 (010)
Meigs, Marilyn F.	431	02.04 (004), 06.02 (010), 06.04 (010)
Mellen, Roz	584	08.04 (010)
Meltzer, Frank L.	736	03.08 (007)
Melville, Chi	718	01.01.01.02 (006), 02.04 (025), 04.03 (001), 05.08.01 (014), 06.05 (002), 08.03.01 (004), 08.03.03 (002)
Melville, Loretta	780	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Mendoza, Mary	1254	02 07 (012)
Meyer, Richard	989	01.01.01.01 (022), 02.08 (002), 03.03 (008), 04.03 (001)
Meyers	708	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Meza, Patrece	755	01.01.02 (005)
Michael, Frank	1104	01.01.01.01 (022), 01.01.01.02 (011)
Millagan, Heston	667	01.01.01.02 (011), 06.09 (013)
Miller, Dana	1338	02.07 (001), 03.08 (010), 05.15 (005), 05.18.04 (002), 09.01 (008)
Miller, Joseph	80	04.03 (005)
Miller, Winifred E.	95	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Mills, John D.	954	01.01.01.01 (022), 05.05.01 (016), 05.08.01 (014)
Minear, Karen	691	08.01 (001)
Minear, Valara	694	08.04 (010)
Mink, Patsy T.	17	08.01 (001), 08.01 (002), 08.05.02 (001), 08.05.06 (023), 08.05.07 (002), 08.06 (004)
Missin, Meta	799	01.01.01.01 (022), 05.12 (001)
Missouri Clearinghouse	15	See Pohl, Lois
Missouri, University of; Columbia	802	See Hultsch, Roland A.
Mitchell, Don	1235	01.01.01.02 (011)
Mitchell, Kelly	888	08.04 (010)
Mitchell, Thomas	576	08.04 (010)
Mix, Mary A.	948	05.08.01 (014), 05.09 (005), 05.12 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Moeller, John	42	08.04 (001)
Moeller, Mary	1151	01.01.01.02 (006)
Moffett, Ed	807	01.01.01.02 (006), 02.04 (019), 05.09 (001)
Moffett, Jennifer	808	01.01.01.02 (006), 02.04 (019), 05.09 (001)
Mohtiak, Dan	321	03.08 (013)
Moore, Emma E.	124	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Moore, James F.	243	02.08 (001), 05.08.01 (014)
Moore, Marie	891	08.04 (014)
Moredock, Elizabeth	1088	01.01.01.02 (011), 05.10.02 (008)
Morgan, Elizabeth	217	08.01 (004)
Morgan, LaRene	1132	01.01.01.02 (006), 01.01.02 (005)
Morley, Mary Kay	1197	08.04 (010)
Morris, Evelyn	397	08.01 (001), 08.04 (010), 08.05.04 (002), 08.05.06 (007), 08.05.07 (002)
Morris, Heloise	81	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Morris, Mary	1331	03.07 (003), 05.10.02 (016), 05.18.04 (002)
Morrison, Anita	909	01.01.01.02 (006)
Morse, Macy	173	02.08 (007), 04.03 (001), 08.05.03 (004), 08.05.10 (010)
Morse, Macy	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Morse, Macy	265	01.01.01.02 (006), 03.05 (008), 04.03 (001), 05.09 (003), 05.10 (021), 05.12.06 (003), 06.06 (003), 07.04 (001), 08.03.01 (005), 08.03.01 (008), 08.05.08 (001)
Mowry, Authur	630	02.06 (023), 03.02 (002), 03.05 (008), 03.05.03 (003), 06.04 (001), 06.05 (003), 06.09 (017), 08.03.01 (004)
Murphy, David	506	08.01 (002)
Murphy, Jane	669	06.05 (016), 08.01 (001), 08.04 (014)
Murray, Alexander P.	832	02.01 (017), 02.04 (034), 02.08 (009), 04.03 (027), 04.03 (053), 04.03 (056), 04.03 (057), 05.10 (056), 05.18.02 (001), 06.02 (005), 06.04 (001), 06.05 (016), 06.06 (011), 06.07 (006)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Myers, Brian	1368	01.01.01.02 (011), 05.09 (001)
Myers, Joy	762	01.01.01.01 (008), 01.01.02 (001), 04.05 (016), 06.06 (003), 06.07 (001), 08.03.03 (002)
Myers, Joy	1012	01.01.01.01 (002), 01.01.01.02 (012), 01.01.02 (001), 01.02 (001), 01.02.03 (003), 02.01 (021), 02.04 (055), 03.04.01 (007), 03.07 (004), 04.03 (008), 04.04 (011), 05.03 (002), 05.09 (001), 05.09 (008), 05.10.02 (017), 05.12.06 (004), 05.12.08 (001), 06.05 (001), 06.06 (003), 06.07 (001), 06.07 (014), 07 (001), 08.03.01 (008), 08.03.03 (002), 08.05.06 (027)
NH, State of; Dept. of Environ. Service	127	See Varney, Robert W.
NY State of; Dept. of Economic Developmt	763	See Page, Paul
Nahoopii, Kawika	372	08.01 (001)
Nahoopii, Kawika	410	08.01 (001), 08.03.02 (001), 08.05.02 (002), 08.05.02 (003), 08.05.06 (005)
Nakaoka, Charles	700	08.04 (013), 08.05.06 (005)
Nashville Peace Action	232	See Hedgepeth, Dave
Nasrah, Sister	525	02.08 (002)
National Assoc. of Retired Federal Emp.	155	See Nickerson, Russell
National Center for Environmental Health	744	See Holt, Kenneth W.
National Transportation Safety Board	129	See Loeb, Bernard S.
Natural Rights Center, The	1069	See Bates, Albert
Navarro, Pat	1324	01.01.01.02 (011)
Nelns, Barbara	702	01.01.01.01 (022)
Nelson, Bruce	754	03.08 (010), 08.04 (010), 08.04 (013)
Nelson, Georgia	754	03.08 (010), 08.04 (010), 08.04 (013)
Neumann, David	562	06.04 (001)
Neumann, David	588	06.05 (020)
Neumann, David	1257	02.06 (036), 05.19 (001), 09.01 (004)
Neumann, David	1425	05.19 (001)
Nevada State Clearinghouse DOA/SPOC	936	See Butler, Julie
Nevadans Opposing Nuclear Extinction	228	See Skinner, Lawrence

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Newick, Richard C.	513	03.03 (008), 03.08 (020), 04.03.01 (017), 08.01 (001), 08.03.01 (001), 08.03.01 (005), 08.04 (013), 08.05.06 (004), 08.05.06 (031)
Nichols, Mary H.	439	01.01.01.02 (011), 03.03 (008), 05.08.02 (001), 05.18.04 (002)
Nichols, Mary H	442	09.01 (004)
Nickerson, Jack E.	776	05.12 (001), 06.04 (001), 06.06 (003)
Nickerson, Jack	1025	05.05.01 (016), 05.11.03 (007), 05.11.03 (008), 08.01 (001)
Nickerson, Jack	1070	09.01 (004)
Nickerson, Russell	155	08.02 (001), 08.04 (010)
Noland, Jane	299	01.01.01 (002), 01.01.01.02 (006), 02.07 (001), 03.04 (014), 05.09 (001), 05.10.01 (005), 05.11.02 (006), 05.12 (001), 05.12.06 (002), 05.12.07.01 (002), 05.13.04 (001), 06.09 (013)
Noland, Jane	926	02.04 (056), 05.04 (006), 05.11.02 (006), 05.12 (001), 05.12.03 (002), 05.13.02 (005)
Norfolk Naval Shipyard-Portsmouth Assoc.	818	See Law, Joe M.
North Carolina State Clearinghouse	1007	See Baggett, Chrys
Nuclear Free Port Coalition	246	See Leistiko, Ron
Nuclear Free Port Coalition	262	See Leistiko, Ron
Nuclear Safety Campaign	1119	See Costner, Brian
Nuick, Dick	182	05.10 (021)
Nunnelley, Pamela J.	775	08.01 (001)
O'Brien, Frank	628	09.01 (004)
O'Brien, Frank D.	633	02.02 (003), 02.04 (034), 06.07 (001)
O'Connell, Rosemary	31	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
O'Connor, John	560	01.01.01.02 (006), 01.02.02 (004), 03.07 (004), 05.04 (004), 05.08.01 (014), 05.08.01 (030), 05.11.03 (004)
O'Connor, Kacee	560	01.01.01.02 (006), 01.02.02 (004), 03.07 (004), 05.04 (004), 05.08.01 (014), 05.08.01 (030), 05.11.03 (004)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
O'Neal, James	441	02.07 (001)
O'Neal, James	442	09.01 (004)
OH, State of; OB&M, State Clearinghouse	514	See Weaver, Larry W.
Oak Ridge Environmental Peace Alliance	1119	See Costner, Brian
Oak Ridge Environmental Peace Alliance	244	See Bryan, Mary
Oak Ridge Environmental Peace Alliance	453	See Bryan, Mary
Oak Ridge Res., Oversight Comm.	447	See McCabe, Amy
Oak Ridge, City of Environ. Qual. Advis	868	See Iwanski, Myron
Oakland, Port of	1013	See McGrath, James
Oesterhaus, Carole L.	293	08.01 (005), 08.03.05 (001), 08.04 (021)
Olson, Lynn	275	06.09 (007)
Ormsby, Bill	696	08.01 (002)
Osborne, Dan	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Osorio, Jonathan K.	377	08.01 (001), 08.03.01 (005), 08.03.05 (001), 08.04 (003), 08.05.02 (001), 08.05.02 (003)
Overman, Robert	1103	04.01 (005), 06.04 (001), 06.05 (001), 06.06 (008), 06.07 (007), 07 (001)
Owen, Elizabeth	620	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011), 05.12.08 (001), 06.05 (002)
Owen, Robert E.	621	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Page, Paul	763	01.01.01.01 (004), 01.01.01.01 (005), 01.01.01.01 (033), 08.01 (002), 08.01 (004), 08.05.06 (005), 08.05.11 (001)
Pahlka, Sharon	9	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Palmer, Doug	1110	08.04 (010), 08.04 (014)
Pannell, Deborah	1298	01.01.01.02 (011)
Pannell, George	1170	01.01.01.02 (011)
Pardy, Pauline	1360	01.01.01.02 (011)
Parker, Genevieve M.	767	08.04 (010), 08.04 (014), 08.05.06 (005)
Parker, Ron A.	1374	01.01.02 (005)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Parker, Sharon	361	01.01.01.02 (006), 04.03 (001)
Parks, Steve	1268	01.01.01.02 (006), 03.07 (003)
Paroni, Genevieve M.	739	01.01.01.01 (004), 01.01.01.01 (005), 01.01.01.01 (029), 01.01.02 (001), 05.19 (003), 08.01 (002), 08.03.01 (006), 08.04 (007)
Parrette, Joe	1193	01.02.03 (002)
Parypa, Andrew	338	08.01 (002), 08.01 (003)
Patheal, Colen	942	05.12 (001)
Patheal, Helen	962	01.01.01.02 (006)
Patrick, Lewis W.	157	04.03.01 (001)
Paulsen, William S.	332	08.04 (010), 08.04 (014)
Paulson, Steve	706	02.01 (030), 05.08.01 (014), 05.10.02 (007), 05.16 (001), 06.05 (026)
Pave the Wilderness	603	See Thompson, Blake
Peace Action Education Fund	1119	See Costner, Brian
Pearl City Neighborhood Board No. 21	381	See Souza, Jerry
Pearl City Neighborhood Board No. 21	390	See Souza, Jerry G.
Pearson, Ernest	1282	01.01.01.02 (006)
Pearson, Esther	1259	01.01.01.02 (006)
Peck, Geraldine	257	01.02.03 (002), 02.08 (002), 05.10.02 (016)
Peelle, Robert	825	01.01.01.01 (002), 01.01.01.01 (004), 01.01.01.01 (022), 01.01.01.02 (033), 01.02 (001), 01.02.01.01 (001), 01.02.03 (002), 02.01 (020), 02.03 (019), 03.04 (012), 03.05 (003), 03.07 (002), 05.08.01 (049), 05.08.03 (006), 05.09 (015), 05.10 (033), 05.10.01 (029), 05.10.02 (014), 05.10.02 (020), 05.12 (002), 05.12.08 (001), 05.15 (001), 05.15 (006), 05.18.01 (006), 05.19 (013), 06.02 (014), 06.03 (011), 06.05 (001), 06.07 (009), 06.09 (049)
Penfield, Janet	273	08.03.01 (008)
Pense, Margaret	749	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Pepper, Lennard J.	12	08.01 (001), 08.04 (010), 08.05.04 (002), 08.05.07 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Person, Dora M.	49	01.01.02 (005), 03.04 (008), 03.04 (009), 05.08.01 (014)
Peters, Gail	875	01.01.03 (001), 08.01 (001), 08.05.06 (031)
Peterson, Samara	1131	03.07 (004), 05.08.01 (030)
Petty, Guy	178	02.03 (010), 08.04 (018), 08.04 (019), 08.05.04 (004), 08.05.06 (028), 08.05.06 (033)
Petty, Guy	182	05.10 (021)
Petty, Guy	183	08.05.02 (002), 08.05.04 (002), 08.05.05 (001), 08.05.06 (002), 08.05.06 (027), 08.05.06 (033)
Pfeiffer, Arden	697	08.04 (010), 08.04 (013), 08.04 (018)
Pfeiffer, Pat	695	08.04 (010), 08.05.04 (002), 08.05.06 (023), 08.05.06 (030)
Phelps, Jim	1332	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
Phillips, Keith E.	877	01.01.01.01 (042), 02.01 (024), 02.01 (025), 02.08 (010), 03.04 (001), 03.04 (008), 05.08.02 (012), 05.10 (018), 06.01 (011), 06.01 (017), 06.02 (029), 06.05 (005), 06.07 (001), 06.09 (028), 08.01 (001), 08.01 (004)
Physicians for Social Responsibility	1119	See Costner, Brian
Physicians for Social Responsibility	269	See Belsey, Richard
Picquet, Cheryn	1240	05.18.04 (002)
Pineus, Kari E.	775	08.01 (001)
Pinkerton, Brad	856	03.03 (008), 03.05 (024), 05.08.01 (014), 08.03.01 (005)
Piquet, Margaret	1335	01.01.01.02 (011)
Pittman, Rosemary	109	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Poche, Anthony F.	1334	01.01.01.02 (011), 03.07 (003), 03.08 (010), 04.01 (005)
Pocuis, D. Leo	139	08.04 (010)
Pocuis, D. Leo	333	08.04 (010)
Podraza, Florence	362	08.05.06 (005)
Poe, W. Lee	628	09.01 (004)
Pohl, Lois	15	09.01 (003)
Polestar Applied Technology	237	See Devine, John C.
Pollet, Gerald	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Pollet, Gerald	301	01.01.01.01 (015), 03.04 (014), 04.03 (005), 04.03 (064), 05.10.02 (003), 05.11.02 (006), 05.11.02 (007), 05.12 (001), 05.12.03 (002), 06.09 (014), 08.03.01 (008), 08.04 (016), 08.05.06 (008)
Pollet, Gerald	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Pollet, Gerald	349	02.07 (012), 04.03 (005), 05.09 (001), 05.10.01 (005), 05.10.02 (003), 05.12.06 (002), 08.03.01 (007), 08.05.06 (008)
Pollock, Marilyn	374	05.15 (003), 08.04 (010), 08.04 (013), 08.05.06 (023), 08.05.06 (031)
Pollock, Marilyn	391	08.03.01 (012), 08.04 (010), 08.04 (013), 08.05.06 (023), 08.05.06 (031)
Pomeroy, Betsy	1172	01.01.01.02 (006)
Pomeroy, Nelson	1172	01.01.01.02 (006)
Porter, Lynn	268	09.01 (004)
Porter, Lynn	283	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Portsmouth Res. for Env. Safety & Sec.	1119	See Costner, Brian
Pottenger, Bob	911	01.01.01.02 (006)
Pottenger, Gerri	911	01.01.01.02 (006)
Potter, Martha	967	01.02.03 (002)
Potter, Roderick	972	02.07 (004), 03.03 (008), 03.07 (003), 03.08 (010), 04.01 (005), 04.03 (058), 05.08.01 (014), 06.07 (001)
Potts, Roxanne M.	775	08.01 (001)
Powell, Marbeth	1388	08.04 (010)
Powell, Walbridge J.	14	08.05.05 (001)
Powers, Julian	1107	02.06 (001), 06.09 (013)
Prater, George	536	05.05 (026), 08.04 (014)
Pressan, Doris	51	08.04 (010), 08.05.06 (030)
Pressan, Ray	51	08.04 (010), 08.05.06 (030)
Price, Jo	768	01.01.01.02 (006), 01.02.03 (002), 05.05 (017),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Price, Jo	768	05.05.01 (016), 06.02 (033)
Price, Mariann	645	01.01.01.02 (011)
Price, Schunn	1376	05.09 (001), 05.18.04 (002)
Priolo, John	378	08.05.04 (001)
Priolo, John	384	02.06 (001), 08.01 (002), 08.05.04 (001)
Priolo, John	395	02.06 (001), 08.01 (002), 08.05.04 (001)
Priolo, John	412	08.05.04 (001)
Pritchett, Jane	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Pritchett, Jane R.	930	01.01.01.02 (006), 02.01 (019), 02.08 (009), 03.04 (002), 03.07 (003), 05.05 (017), 05.05.01 (016), 05.12 (001), 05.12 (005), 05.12 (010), 05.12.06 (002), 05.12.07.01 (002), 06.05 (017), 06.05 (029), 07.01.04 (002)
Proksa, Dennis J.	561	05.09 (001), 05.12 (001), 06.05 (002), 06.07 (010), 07.04 (004)
Proksa, Margo	1055	01.01.01.01 (005), 01.01.01.02 (006), 01.03 (001), 02.07 (001), 02.08 (002), 02.08 (020), 03.02 (002), 03.04 (017), 03.07 (003), 03.08 (011), 03.08 (017), 04.03 (001), 05.08.01 (014), 05.09 (001), 05.10 (008), 05.12 (003), 05.16 (001), 06.07 (001), 06.09 (010), 06.09 (024), 08.03.01 (004)
Proksa, Margo	1056	01.01.01.01 (005), 01.01.01.02 (006), 01.03 (001), 02.07 (001), 02.08 (002), 02.08 (020), 03.02 (002), 03.04 (017), 03.07 (003), 03.08 (011), 03.08 (017), 04.03 (001), 05.08.01 (014), 05.09 (001), 05.10 (008), 05.12 (003), 05.16 (001), 06.07 (001), 06.09 (010), 06.09 (024), 07 (001), 08.03.01 (004)
Proksa, Margo	1070	09.01 (004)
Pumphrey, Laurel	481	03.03 (008)
Pumphrey, Laurel	540	03.03 (008), 03.04 (018), 06.02 (015)
Turner, Jeff	205	08.01 (002)
Qualman, Ronald	590	01.01.01.02 (006), 08.04 (010), 08.04 (013)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Quapp, W. J.	817	01.02.03 (002), 06.04 (001)
Questions and Answers, Arlington, VA Afternoon	426	09.01 (004)
Questions and Answers, Arlington, VA Evening	427	09.01 (004)
Questions and Answers, Ballston Spa, NY After.	229	09.01 (004)
Questions and Answers, Ballston Spa, NY Evening	208	02.07 (001), 03.04 (010), 08.01 (001), 08.03.01 (010), 08.05.06 (001)
Questions and Answers, Boise, ID	551	09.01 (004)
Questions and Answers, Bremerton, WA Evening	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Questions and Answers, Idaho Falls, ID Afternoon	1068	05.11.03 (014)
Questions and Answers, Idaho Falls, ID. Evening	1070	09.01 (004)
Questions and Answers, Kingston, TN Evening	442	09.01 (004)
Questions and Answers, Kittery, ME Evening	182	05.10 (021)
Questions and Answers, Las Vegas, NV Afternoon	226	09.01 (004)
Questions and Answers, Moscow, ID Afternoon	608	09.01 (004)
Questions and Answers, Moscow, ID. Evening	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Questions and Answers, N. Augusta, SC Afternoon	629	02.08 (019), 06.08 (001), 08.04 (003)
Questions and Answers, N. Augusta, SC Evening	628	09.01 (004)
Questions and Answers, Oak Ridge, TN Afternoon	444	09.01 (004)
Questions and Answers, Pasco, WA Evening	236	09.01 (004)
Questions and Answers, Pearl City, HI Afternoon	367	08.03.02 (001)
Questions and Answers, Portland, OR Afternoon	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Questions and Answers, Portland, OR Evening	268	09.01 (004)
Questions and Answers, Savannah, GA Afternoon	516	05.10 (030)
Questions and Answers, Savannah, GA Evening	521	09.01 (004)
Questions and Answers, Seattle, WA Afternoon	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Questions and Answers, Twin Falls, ID Afternoon	992	06.03 (002)
Questions and Answers, Twin Falls, ID Evening	993	05.11.03 (014)
Quiakana, Marcus	315	01.02.01 (005), 02.06 (004), 03.03 (008), 05.10.02 (007), 07.04 (004)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Quiggle, Nancy	759	01.01.01.02 (011), 03.08 (011)
Quinley, Vickie	1129	05.08.01 (014)
Quinn, Tim	1166	08.01 (001)
Rabin, Stanford	58	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Radiation Research Society	227	See Hilmas, Duane
Ramey, Rochelle	94	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Randolph, Sperry	1188	01.01.01.02 (011)
Read, Heidi	475	03.03 (008)
Read, Heidi	611	03.03 (008)
Reaves, Whitfield	806	01.01.01.02 (006), 01.02.03 (002), 02.04 (001), 05.09 (001)
Record, Terry	748	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Record, Terry	1085	01.01.01.01 (008), 01.01.01.01 (022)
Reed, David	1316	01.01.01.02 (011), 04.03.01 (001), 05.08.02 (001)
Reed, Kristi	651	01.01.01.02 (014)
Reed, Ron	1339	02.08 (036), 06.07 (001)
Reimers, Diane	742	01.02 (001), 03.05 (008), 04.03 (001), 05.12 (001)
Reitnour, Michael	263	01.02.03 (002), 02.01 (026), 04.03 (001), 04.03.01 (019), 05.12 (001), 05.12.07.01 (002)
Reppun, J. I. Frederick	1	06.06 (003), 08.05.01 (007), 08.06 (001)
Reppun, J. I. Frederick	125	08.04 (003), 08.04 (010), 08.05.03 (006), 08.05.06 (003)
Reppun, J. I. Frederick	552	06.09 (004), 08.01 (002), 08.05.01 (005), 08.05.01 (006), 08.05.01 (007), 08.05.03 (006), 08.05.06 (005)
Rice, Charles M.	1039	01.01.01.01 (002), 01.01.02 (001)
Rice, Chuck	1038	01.01.01.01 (002), 01.01.02 (001)
Rice, JoAnn	1225	08.04 (013), 08.04 (014)
Rice, Kevin	659	01.01.01.02 (011)
Rickards, Peter	979	02.08 (001), 02.08 (002), 03.03 (002), 03.08 (006), 05.09 (001), 05.10 (009), 05.10 (057), 05.10.02 (008), 05.11.03 (014), 06.07 (001), 07.02.01 (003), 07.02.03 (001),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Rickards, Peter	979	08.03.03 (001), 08.05.06 (005)
Rickards, Peter	993	05.11.03 (014)
Rickards, Peter	1031	01.01.01.01 (015), 01.01.01.01 (022), 01.02 (001), 02.01 (009), 03.08 (014), 03.08 (017), 05.08.01 (016), 05.11.03 (009), 05.11.03 (014), 05.11.03 (035), 06.03 (014), 06.05 (001), 06.07 (001)
Rickards, Peter	1032	02.03.01 (002), 05.08.01 (014), 05.08.01 (016), 05.10 (044), 05.10 (046), 05.10.02 (008), 05.11.03 (009), 05.11.03 (011), 05.11.03 (020), 05.15 (015), 07.02.01 (003), 07.04 (004), 08.05.06 (005)
Rickards, Peter	1068	05.11.03 (014)
Rickards, Peter	1070	09 01 (004)
Ricketts, W.	1195	01.01.01.02 (011)
Ricketts, W.	1346	09.01 (004)
Rinehart, Mark A.	479	05.08.01 (014)
Risser, Peter	104	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Ristow, Steven C.	721	02.03 (028), 02.04 (060), 02.08 (035), 04.03 (001)
Roberts, Elizabeth A.	809	03.07 (004), 04.03 (001)
Roberts, Jean C.	61	03.01 (001), 08.01 (001), 08.03.01 (004), 08.04 (014), 08.04 (015), 08.05.06 (023), 08.05.06 (025)
Roberts, Lucy	1428	01.01.01.02 (011)
Roberts, Randy	1090	01.01.01.02 (011), 02.06 (001), 06.09 (013)
Robinowitz, Mark	427	09.01 (004)
Robinowitz, Mark	432	02.01 (031), 02.06 (009), 02.06 (035), 03.03 (002), 03.08 (011), 04.03 (001), 05.10 (021), 05.10.01 (006), 07.01.03 (001)
Robinowitz, Mark	433	02.06 (009), 02.06 (035), 05.10 (021), 05.10 (048), 09 01 (004)
Robinson, Enders A.	429	05.10.01 (003), 06.09 (024)
Rodgers, Patricia M.	93	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Rogers, Albert W.	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Rogers, Kris	958	01.01.01.01 (022), 01.01.01.02 (006), 01.01.01.02 (028), 03.05 (007), 03.05 (008), 03.07 (004), 05.10.02 (016), 05.11.03 (020)
Rogers, Mary Grace	1323	01.01.01.02 (011), 05.10.02 (016), 06.09 (013)
Roland, Russ	690	01.01.01.01 (022), 08.01 (001), 08.01 (002)
Romane, Richard R.	185	08.05.06 (032)
Romane, Richard	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Romane, Richard R.	766	08.05.06 (031)
Ronic, Bill	629	02.08 (019), 06.08 (001), 08.04 (003)
Roth, Char	995	01.01.01.01 (022), 05.08.01 (014), 05.12 (001), 08.01 (002), 08.03.01 (001)
Rouirere, Carol	709	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Rowe, Jennifer	1083	01.01.01.01 (022)
Runstein, Helen	1204	08.05.06 (005), 08.05.06 (006)
Ruppe, Maryann	1421	08.04 (021)
Russell, Donald	1174	01.01.01.02 (011), 05.12.08 (001)
Russell, Rosemary	50	08.04 (010), 08.04 (014)
SC, State of; League of Women Voters	915	See Kelly, Mary T.
SC, State of; Office of the Governor	22	See Grizzle, Rodney P.
SC, State of; Office of the Governor	614	See Grizzle, Rodney P.
STAND of Amarillo, Inc.	1119	See Costner, Brian
Saccoman, Bill	1111	01.01.01.02 (006)
Saccoman, Joe	1106	01.01.01.02 (006), 05.08.01 (014), 05.10 (006)
Saccoman, Patty	1111	01.01.01.02 (006)
Salaegs, Peggy	1173	01.01.01.02 (006)
Salazar, Hallette R.	863	06.09 (019), 08.01 (004), 08.04 (010)
Sanders, James E.	209	01.02.03 (002), 04.03 (001)
Sanders, Pat	1356	01.01.01.01 (008), 02.08 (009)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Sanderson, Richard E.	1080	01.02.01.01 (007), 02.01 (022), 03.04 (005), 03.04 (006), 03.04 (022), 03.05 (028), 03.07 (006), 03.07 (007), 03.08 (018), 04.03 (043), 04.03 (063), 04.03.02.01 (003), 04.04.01 (006), 04.05 (015), 04.05 (023), 05.02 (005), 05.02 (053), 05.03 (004), 05.04 (009), 05.04 (010), 05.04 (017), 05.06 (009), 05.08 (003), 05.08 (007), 05.08 (008), 05.08.01 (020), 05.08.01 (022), 05.08.01 (033), 05.08.01 (050), 05.08.03 (004), 05.09 (012), 05.10 (011), 05.10 (015), 05.10 (016), 05.10 (019), 05.10 (020), 05.10 (029), 05.10 (032), 05.10 (036), 05.10 (037), 05.10 (042), 05.10 (053), 05.10 (065), 05.10.01 (007), 05.10.02 (005), 05.10.02 (015), 05.11.01 (009), 05.11.01 (010), 05.11.01 (011), 05.11.01 (012), 05.11.03 (014), 05.11.03 (022), 05.11.03 (029), 05.11.03 (034), 05.11.03 (036), 05.12 (001), 05.12 (015), 05.12.07.01 (001), 05.16 (001), 05.17 (003), 05.17 (004), 05.18.01 (003), 05.18.01 (004), 05.18.01 (007), 05.18.01 (013), 05.18.01 (014), 05.18.05 (001), 05.19 (005), 05.19 (018), 06.02 (025), 06.02 (036), 06.02 (037), 06.04 (012), 06.04 (013), 06.07 (001), 06.07 (008), 06.09 (052), 06.09 (053), 07.01.04 (003), 07.03 (001), 07.03 (002), 08.06 (014), 08.06 (018), 08.06 (019)
Sanderson, Richard E.	1120	01.02.01.01 (007), 02.01 (022), 03.04 (005), 03.04 (006), 03.04 (022), 03.05 (028), 03.07 (006), 03.07 (007), 03.08 (018), 04.03 (043), 04.03 (063), 04.03.02.01 (003), 04.04.01 (006), 04.05 (015), 04.05 (023), 05.02 (005), 05.02 (053), 05.03 (004), 05.04 (009), 05.04 (010), 05.04 (017), 05.06 (009), 05.08 (003), 05.08 (007), 05.08 (008), 05.08.01 (020), 05.08.01 (022), 05.08.01 (033), 05.08.01 (050), 05.08.03 (004), 05.09 (012), 05.10 (011), 05.10 (015), 05.10 (016), 05.10 (019), 05.10 (020),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Sanderson, Richard E.	1120	05.10 (029), 05.10 (032), 05.10 (036), 05.10 (037), 05.10 (042), 05.10 (053), 05.10 (065), 05.10.01 (007), 05.10.02 (005), 05.10.02 (015), 05.11.01 (009), 05.11.01 (010), 05.11.01 (011), 05.11.01 (012), 05.11.03 (014), 05.11.03 (022), 05.11.03 (029), 05.11.03 (034), 05.11.03 (036), 05.12 (001), 05.12 (015), 05.12.07.01 (001), 05.16 (001), 05.17 (003), 05.17 (004), 05.18.01 (003), 05.18.01 (004), 05.18.01 (007), 05.18.01 (013), 05.18.01 (014), 05.18.05 (001), 05.19 (005), 05.19 (018), 06.02 (025), 06.02 (036), 06.02 (037), 06.04 (012), 06.04 (013), 06.07 (001), 06.07 (008), 06.09 (052), 06.09 (053), 07.01.04 (003), 07.03 (001), 07.03 (002), 08.06 (014), 08.06 (018), 08.06 (019)
Sanderson, Richard E.	1126	01.02.01.01 (007), 02.01 (022), 03.04 (005), 03.04 (006), 03.04 (022), 03.05 (028), 03.07 (006), 03.07 (007), 03.08 (018), 04.03 (043), 04.03 (063), 04.03.02.01 (003), 04.04.01 (006), 04.05 (015), 04.05 (023), 05.02 (005), 05.02 (053), 05.03 (004), 05.04 (009), 05.04 (010), 05.04 (017), 05.06 (009), 05.08 (003), 05.08 (007), 05.08 (008), 05.08.01 (020), 05.08.01 (022), 05.08.01 (033), 05.08.01 (050), 05.08.03 (004), 05.09 (012), 05.10 (011), 05.10 (015), 05.10 (016), 05.10 (019), 05.10 (020), 05.10 (029), 05.10 (032), 05.10 (036), 05.10 (037), 05.10 (042), 05.10 (053), 05.10 (065), 05.10.01 (007), 05.10.02 (005), 05.10.02 (015), 05.11.01 (009), 05.11.01 (010), 05.11.01 (011), 05.11.01 (012), 05.11.03 (014), 05.11.03 (022), 05.11.03 (029), 05.11.03 (034), 05.11.03 (036), 05.12 (001), 05.12 (015), 05.12.07.01 (001), 05.16 (001), 05.17 (003), 05.17 (004), 05.18.01 (003), 05.18.01 (004), 05.18.01 (007), 05.18.01 (013), 05.18.01 (014), 05.18.05 (001),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Sanderson, Richard E.	1126	05.19 (005), 05.19 (018), 06.02 (025), 06.02 (036), 06.02 (037), 06.04 (012), 06.04 (013), 06.07 (001), 06.07 (008), 06.09 (052), 06.09 (053), 07.01.04 (003), 07.03 (001), 07.03 (002), 08.06 (014), 08.06 (018), 08.06 (019)
Sattgast, Leah W.	1294	03.03 (008), 03.07 (004), 05.08.01 (014)
Saunders, Mary	805	01.01.01.02 (006), 02.04 (019), 05.09 (001)
Scannella, Joe	1308	01.01.01.02 (011)
Scarborough, Leslie	982	01.01.01.02 (006), 05.08.01 (014)
Schalck, D. Kate	599	05.05 (012), 05.05.01 (018), 05.05.01 (035), 05.05.01 (039), 05.11.03 (018), 05.19 (008), 06.02 (019), 08.03.01 (005)
Schalck, D. Kate	609	05.05.01 (016), 05.05.01 (018), 05.05.01 (035), 05.05.01 (039), 05.08.01 (014), 06.02 (019), 07.04 (001), 08.03.01 (005)
Schedin, Todd	106	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Schierloh, Brooke	240	04.03.01 (019), 06.09 (013), 08.04 (010)
Schimdt, Helena	1307	01.01.01.02 (011), 05.08.01 (014)
Schmalz, Bruce L.	44	02.01 (002), 02.03 (011), 03.08 (015), 06.05 (016), 08.03.03 (002)
Schmatjen, Jeff	892	08.01 (001), 08.04 (011)
Schmidt, Gail	564	08.01 (004), 08.04 (010), 08.05.07 (001)
Schmidt, Peter W.	844	02.01 (008), 04.04 (008), 05.09 (001), 06.07 (001), 08.04 (010), 08.04 (028)
Schmidt, Peter W.	931	02.01 (008), 04.04 (008), 05.09 (001), 06.07 (001), 08.04 (010), 08.04 (028)
Schneider, Laurie	242	02.01 (030), 04.03 (001)
Schrade, Jeff	1047	02.02 (005), 06.04 (008), 06.09 (030)
Schrader, Kathi	461	01.01.01.02 (006)
Schryrer, Laurie	436	01.01.01.02 (006), 03.08 (010), 05.05 (017)
Schwarz, Ted M.	98	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Schwarz, Ted M.	98	08.04 (009), 08.04 (014)
Scott, Frank	487	05.15 (002)
Scudder, Gary	1236	01.01.01.02 (006)
Seaman, Thomas	606	04.03 (001), 04.03.01 (017)
Seaman, Thomas	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Seattle City Council	926	See Noland, Jane
Seels, Phyllis	758	01.01.01.02 (011), 03.08 (011)
Senate, U.S.	1046	See Craig, Senator Larry E.
Senate, U.S.	642	See Thurmond, Senator Strom
Seperich, Yvonne	1310	01.01.01.02 (011)
Shane, Chris	648	01.01.01.02 (011), 05.19 (011)
Shannon, Beth L.	387	08.01 (001)
Shannon, John	193	02.08 (041), 03.04.01 (005), 05.11.01 (002), 08.03.01 (012)
Shannon, John	195	02.08 (041), 05.11.01 (002), 05.18.04 (002)
Sharpe, Roberta R.	746	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Sharpe, Roberta R.	1087	01.01.01.01 (008), 01.02.03 (002), 03.04 (010), 03.05 (009)
Shaver, Lale	1345	08.04 (020)
Shea, Donald R.	70	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Shelton	650	01.01.01.02 (011), 05.10.02 (007)
Shepard, Kathy	579	01.01.01.02 (006), 08.04 (010)
Sherrerd, Bill	988	03.05 (007), 04.05 (018), 05.08.01 (014), 05.08.01 (030), 06.08 (003)
Shim, Julie	498	08.05.06 (005)
Shipley, Diana	1019	01.01.01.01 (022), 01.01.01.02 (006), 03.07 (004), 03.08 (004), 03.08 (010), 06.05 (019), 07.04 (001)
Shipley, Diana Y.	1020	01.01.01.01 (022), 01.01.01.02 (006), 03.07 (004), 03.08 (004), 03.08 (010), 06.05 (019), 07.04 (001)
Shootman, Charles	658	01.01.01.02 (011), 05.10.02 (007), 05.18.04 (002)
Shortt, Timothy	1233	05.10 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Shoshone-Bannock Tribal Dept. of Energy	1044	See Hayball, Brett
Shoshone-Bannock Tribes, The	847	See Tinno, Keith
Shotwell, Cornelia	1137	01.01.01.02 (006)
Shotwell, Evelyn	1113	01.01.01.02 (006)
Shroy, Edna E.	753	08.04 (010)
Sickles, Linda	107	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Siegel, Taggart	946	01.01.01.02 (006), 05.08.01 (014), 05.09 (002), 05.12 (001)
Sieger, Karyn	1267	01.01.01.02 (006), 05.12 (001)
Sierra Club	167	See Deegan, Robert
Sierra Club, Hawaii Chapter	385	See Gates, Marilyn
Sierra Club, Sawtooth Group	1286	See Stoke, Jonathan
Sierra Club, Virginia Chapter	905	See Deegan, Robert F.
Sifnas, Martha	1413	08.04 (010), 08.04 (013), 08.05.04 (002)
Silverman, Larry	1242	02.07 (012)
Sims, Lynn	146	01.02.01.02 (008), 03.08 (011), 04.01 (005), 05.10.01(031), 05.18.04 (002), 06.05 (001), 06.09 (013), 07.04 (004), 08.01 (002), 08.03.01 (003)
Sims, Lynn	258	01.02.03 (002), 03.05 (008), 03.08 (011), 05.10.02 (016), 05.12.08 (001), 06.09 (013), 07 (001), 08.01 (001)
Sipp, Pete	634	03.05 (007), 04.05 (011)
Sirhall, Emma L.	1285	05.08.01 (014)
Sixth Sense Sound Peace	351	See Donnelly, Tom
Skinner, Lawrence	224	05.16 (006)
Skinner, Lawrence	226	09.01 (004)
Skinner, Lawrence	228	05.16 (006)
Skinner, Robert	1062	01.01.01.02 (006), 01.02.03 (002), 05.11.03 (038), 06.07 (001)
Skinner, Robert L.	1063	01.01.01.02 (006), 01.02.03 (002), 05.11.03 (038), 06.07 (001)
Slansky, Cyril M.	729	01.02.01.02 (006), 03.05.05 (003), 06.02 (034), 06.08 (003), 08.03.05 (006)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Slatin, Alfred	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Slifer, B.	130	01.01.01.02 (006), 05.08.01 (014)
Slifer, Betty	1001	01.01.01.02 (006), 03.03 (008)
Smiley, Jane	1145	04.03 (001), 05.10.02 (016)
Smith, Arthur P.	535	08.04 (010)
Smith, Ben L.	158	02.02 (002), 02.08 (025), 04.01 (005), 04.03 (001), 04.03 (003), 04.03.01 (005), 04.03.02.01 (001), 06.05 (026), 06.05 (028), 06.07 (001)
Smith, Ben L.	446	01.01.01.01 (029), 01.01.01.01 (045), 02.02 (002), 02.04 (037), 02.06 (025), 02.08 (025), 04.01 (005), 04.03 (001), 04.03 (003), 04.03.01 (005), 04.03.02.01 (001), 05.08.01 (004), 06.05 (028), 06.07 (001)
Smith, Clyde	647	06.09 (014)
Smith, Deanna	468	01.02.03 (002), 02.08 (008), 03.07 (003), 04.01 (001), 04.03 (005), 06.01 (013), 06.05 (016), 06.09 (033)
Smith, Desmond F.	281	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Smith, Eric	1296	03.08 (009), 05.11.03 (039), 06.05 (016)
Smith, Gus	445	01.02.03 (002)
Smith, Matt	510	02.08 (002), 03.03 (008), 03.07 (004), 05.05.01 (016), 05.08.01 (014), 05.08.01 (023), 07 (001)
Smith, Matt	949	02.08 (002), 03.03 (008), 03.03 (012), 05.05.01 (016), 05.08.01 (014), 05.08.01 (023)
Smith, Ruth A.	535	08.04 (010)
Smith, Susan	710	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Smith, Tony	289	03.08 (010)
Smith, Vicki	880	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Smithhart, Lorne R.	591	08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Snake River Alliance	907	See Brailsford, Beatrice
Snake River Alliance	1035	See Brailsford, Beatrice
Snake River Alliance	1119	See Costner, Brian
Snake River Alliance	468	See Smith, Deanna
Snake River Alliance	976	See Stewart, Margaret M.
Snell, Jim	1373	01.02.03 (002), 05.19 (001), 06.03.01 (001), 06.04 (002)
Snow, Dickey	1199	01.01.01.02 (011)
Snow, Renee	1350	01.01.01.02 (011)
Soderquist, Linda	1404	01.02.03 (002)
Solomon, Gerald B.	211	08.01 (002)
Somers-Gulsvig, Julie A.	284	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Sonnenberg, Mark	937	06.04 (001)
Sorosua, Adrian	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Southland, Robert E.	325	05.19 (011)
Southwest Research & Information Center	1119	See Costner, Brian
Souza, Jerry	381	08.01 (001), 08.03.01 (001), 08.04 (010)
Souza, Jerry G.	390	08.04 (010)
Sowdon, Doug	1303	06.01 (011), 06.09 (013), 08.04 (010), 08.04 (014)
Sower, Bob W.	1130	01.01.01.02 (006)
Spark M. Matsunaga Instit. for Peace	413	See Viglielmo, Frances
Species, Scott	309	02.04 (002), 03.08 (010), 06.07 (011)
Spencer, Harvey G.	830	01.01.01.01 (004), 02.08 (022)
Sperry, Carolyn W.	67	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Spiers, Christopher	775	08.01 (001)
Spies, Robert D.	43	01.02.03 (002), 05.12.08.01 (001), 06.07 (005)
Spies, Robert D.	92	02.08 (024)
Spitalny, Paul	97	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Spitzer, Debra A.	720	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Spitzer, Debra A.	720	03.05 (009), 03.08 (011)
Spore, Suzanne	1396	01.01.01.02 (011)
Springer, Elizabeth	292	03.04 (021), 05.04 (020), 05.10 (066), 05.10.02 (016), 05.11 (001), 05.12.03 (003), 08.01 (001), 08.03.01 (005), 08.04 (010), 08.05.06 (008)
Stark, Jenny	895	08.01 (001), 08.04 (010)
Stauffer, Carrie L.	782	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Steele, Jen	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Steele, Selma A.	239	04.03 (018), 05.10.02 (016), 08.04 (010), 08.04 (013)
Steele, William K.	108	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Steffens, Veronica	961	01.01.01.02 (006)
Stein, Karen	738	02.07 (014), 02.08 (001), 03.05 (008), 05.04 (016), 06.02 (008)
Stennet, Clint	1014	01.01.01.01 (022), 01.02 (001), 03.03 (008), 03.07 (003), 05.05.01 (016), 05.08.01 (014), 05.18.04 (002), 08.01 (009)
Stevens, Alexander R.	140	05.11.02 (006), 08.04 (010)
Stevens, Ed	1417	08.04 (010), 08.04 (018)
Stevenson, Elizabeth	677	01.01.01.02 (006), 05.08.01 (014)
Stewart, Brenda	569	08.01 (001)
Stewart, Margaret M.	465	01.02.03 (002), 02.01 (023), 02.04 (001), 02.07 (004), 03.07 (004), 05.12 (008), 06.01 (002), 08.01 (001), 08.03.01 (005), 08.05.10 (006)
Stewart, Margaret M.	971	01.02.03 (002), 02.01 (023), 02.04 (023), 02.07 (004), 03.03 (008), 03.07 (003), 03.07 (004), 06.01 (002), 06.03 (002), 08.05.10 (006)
Stewart, Margaret M.	976	01.01.01.01 (022), 02.08 (020), 04.01 (001), 04.03 (005), 06.01 (002), 06.04.01 (001), 06.07 (001), 07.01.05 (002), 08.03.01 (003), 08.03.01 (005)
Stewart, Margaret M.	992	06.03 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Stewart, Margaret M.	993	05.11.03 (014)
Stewart, Mark	968	03.03 (008), 08.04 (001)
Stewart, Mark	992	06.03 (002)
Stibal, Shirley	836	01.01.01.02 (006), 03.05 (007), 03.07 (004), 05.08.01 (014), 05.09 (003), 08.04 (016)
Stireman, James	1084	05.19 (011)
Stockard, Joe L.	456	02.04 (019), 02.04 (062), 02.07 (001), 05.08.02 (005), 06.02 (020)
Stockdale, Jeri	145	08.04 (010), 08.04 (013), 08.04 (014), 08.05.04 (004)
Stohr, Joe	303	01.01.01.01 (042), 02.08 (052), 03.07 (003), 05.09 (014), 06.02 (005), 08.01 (002), 08.01 (004), 08.01 (005), 08.03.01 (015)
Stoke, Jonathan	1286	03.08 (011), 04.04 (008), 05.12.06 (002), 06.09 (013)
Stokes, Don R.	126	03.05 (023), 03.05.03 (003), 06.05 (009), 06.09 (046)
Stoknes, Kjell	1218	01.02.02 (002), 07.04 (004)
Stoknes, Marilyn	1218	01.02.02 (002), 07.04 (004)
Stone, Bettie J.	36	01.01.01.02 (006), 01.02.01.02 (001), 01.02.03 (002), 04.01 (005), 04.03 (033), 08.05.03 (001)
Stone, Bettie J.	331	04.01 (005), 05.10.02 (017)
Stone, Gary	1101	05.08.01 (014), 05.19 (011)
Stori, Mary	577	01.01.01.02 (006)
Story, Marty	775	08.01 (001)
Stout, Dean	1216	01.01.01.02 (011)
Stranahan, Lori	250	01.01.01.02 (020), 06.09 (017), 09.01 (004)
Strandell, Amy J.	120	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Stratten, Betty	770	05.05.01 (016), 05.08.01 (014), 05.12 (001)
Strausbaugh, Cindy	991	01.01.01.02 (006), 01.02.01.02 (006), 03.08 (010), 04.03 (001), 05.18.04 (002)
Straw, Owen	317	03.08 (013)
Strawser, Mary	1192	01.01.01.02 (006)
Streeter, Jack	726	01.02.03 (002), 02.08 (042), 03.05 (007), 03.05.04 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Strong, T. R.	843	08.01 (001), 08.01 (002), 08.01 (004)
Strong, Tye	1143	01.01.01.02 (006), 04.03 (001), 04.05 (003)
Stuart, Ivan F.	520	05.12.04 (002)
Stuart, Ivan	526	05.12.04 (002)
Students for Environmental Action	471	See Gardunia, Brian
Stume, Betty Ann	1271	01.02.01.02 (005)
Suhr, Debbie	1138	01.01.01.02 (006)
Sujka, Mike	629	02.08 (019), 06.08 (001), 08.04 (003)
Sujka, Mike F.	639	01.02.03 (002)
Surielo, Carrie	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Sutton, Barry	274	03.05.05 (003)
Sutton, Richard	376	01.02.03 (002), 08.01 (001), 08.04 (010), 08.04 (013), 08.05.06 (025)
Sutton, Shelley	77	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Sutton, Thomas B.	267	02.08 (020)
Suzuki, Nathan	13	08.01 (001), 08.03.02 (001), 08.04 (010), 08.04 (013), 08.04 (014), 08.04 (015), 08.05.07 (001), 08.05.07 (003), 08.05.11 (001), 08.05.11 (004)
Swan, Kerrigan A.	601	01.01.01.01 (005), 01.01.01.02 (006), 02.01 (030), 02.07 (001), 05.09 (001)
Swanson, John R.	854	05.19 (011)
Swanson, Mary	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Swanson, Mary	586	06.09 (013), 08.04 (011)
Swartzman, Margaret	1293	01.01.01.02 (020), 05.08.03 (005), 08.04 (008), 08.06 (004)
Sweet, Sallie	116	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Swenson, Pamela	912	05.05.01 (016), 05.08.01 (014), 05.12 (001)
Switzer, Susan	1341	01.01.01.01 (015), 03.05 (017), 03.05 (018), 04.01 (005)
Swords, Marcella	567	08.04 (013)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
TN, State of; Dept. of Envir. & Conserv.	515	See Leming, Earl C.
Takahashi, Dana	1258	08.01 (001)
Takaro, Tim	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Talkington, John	406	08.03.01 (001), 08.03.01 (007), 08.03.05 (001)
Talkington, John	419	08.03.01 (007), 08.03.05 (001), 08.04 (014), 08.05.06 (005)
Tanner, John B.	1040	02.06 (039)
Tate, Deborah	1064	01.01.01.01 (022), 01.01.01.02 (028), 02.01 (026), 02.07 (012), 03.07 (003), 07.04 (001)
Tauscher, Carol	459	08.04 (010), 08.04 (013), 08.04 (021)
Taylor, Larry L.	859	03.05 (007), 06.04.01 (003), 06.04.01 (004), 06.05 (001), 06.09 (006), 08.03.01 (019), 08.04 (001)
Taylor, Steve T.	87	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Teasley, Marlese	950	01.01.01.02 (006), 03.07 (004), 05.19 (011), 06.05 (011)
Teitge, Thomas	943	01.01.01.02 (006), 03.05 (007)
Tennessee State Planning Office	158	See Smith, Ben L.
Tennessee, State of	446	See Smith, Ben L.
Tenpenny, Peggy Sue	1431	01.01.01.02 (011), 01.02.03 (002)
Tenpenny, Ray	1430	01.01.01.02 (011)
Teuksbury, Ross	268	09.01 (004)
Teusher, Meryle	1150	01.01.01.02 (006)
Tewell, Joanna C.	792	01.02.01.02 (006), 01.02.03 (002), 04.05 (013), 05.10 (002), 05.13.01 (003)
Tewksbury, Ross	272	01.02 (001), 05.11.02 (001), 05.12.06 (002), 06.03.01 (001)
Theriot, Pierre	335	05.12 (001), 08.01 (004), 08.01 (005), 08.04 (001)
Thomas, Tim	987	01.01.01.02 (006), 05.05.01 (016), 05.10.02 (016), 05.15 (008)
Thompsen, Angle	712	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Thompson, Blake	603	02.08 (042), 03.05.05 (003), 05.04 (005), 05.08.01 (002), 05.10 (054), 05.10 (059), 05.19 (001), 08.03.05 (006),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Thompson, Blake	603	08.05.06 (014)
Thompson, Blake	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Thurmond, Senator Strom	642	01.01.01.02 (008), 05.13.04 (002), 06.05 (016), 06.06 (003)
Tillett, Jackie	501	08.01 (001)
Tillett, Jackie	571	08.04 (010), 08.05.06 (005), 08.05.06 (022)
Tinno, Keith	847	01.01.01.01 (022), 01.01.01.01 (043), 01.01.01.02 (026), 01.01.02 (003), 01.02.03 (003), 02.03 (004), 02.04 (001), 02.04 (007), 02.04 (026), 02.04 (031), 02.04 (037), 02.04 (038), 02.04 (057), 02.06 (034), 02.06 (040), 02.08 (013), 02.08 (021), 02.08 (029), 02.08 (030), 03.07 (001), 03.07 (005), 03.07 (008), 03.08 (002), 03.08 (017), 04.03 (002), 04.03 (005), 04.03 (009), 04.03 (015), 04.03 (021), 04.03 (045), 04.03.01 (007), 04.03.01 (009), 04.03.01 (010), 04.03.01 (014), 04.03.01 (020), 04.03.01 (025), 04.03.02 (003), 04.03.02 (004), 04.03.02 (007), 04.05 (002), 04.05 (010), 05.01 (001), 05.01 (002), 05.02 (009), 05.02 (039), 05.02 (040), 05.02 (044), 05.02 (051), 05.03 (002), 05.03 (003), 05.03 (005), 05.03 (006), 05.03 (007), 05.04 (007), 05.06 (006), 05.06 (007), 05.06 (010), 05.06 (011), 05.06 (012), 05.08.01 (014), 05.08.01 (024), 05.08.01 (025), 05.08.01 (039), 05.08.03 (007), 05.08.03 (015), 05.09 (001), 05.09 (006), 05.10 (004), 05.10 (025), 05.10 (029), 05.10.02 (002), 05.11.02 (008), 05.11.03 (008), 05.12.06 (004), 05.13.02 (004), 05.15 (009), 05.15 (010), 05.15 (012), 05.15 (014), 05.15 (015), 05.15 (022), 06.04 (006), 06.05 (016), 06.07 (001), 06.08 (004), 06.08 (006), 06.09 (013), 07 (001), 07.01.04 (001), 08.03.03 (002), 08.03.03 (003), 08.05.06 (009), 08.05.06 (011), 08.05.11 (007)
Tippett, Verna L.	1264	01.01.01.02 (006), 05.08.01 (014)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Tockman, Jason	605	03.03 (002), 03.03 (008), 04.03.01 (017), 05.09 (010)
Tockman, Jason	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Todd, Lisa R.	457	08.03.01 (011), 08.03.05 (001)
Todd, Megan	893	08.04 (014)
Todd, Paul	1000	01.01.01.01 (008), 03.08 (017), 05.09 (002), 07.04 (001)
Toler, Stuart	1283	03.05 (007), 05.09 (001)
Topik, Mrs. Fred	495	01.01.01.01 (022), 03.05 (007)
Toyama, Ben	399	08.01 (003)
Treichel, Judy	223	01.01.01.01 (022), 01.02.03 (002), 03.08 (007), 04.05 (007), 05.11.03 (003)
Trenor, Dorothy L.	119	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Trieble, Wilbur	204	08.05.04 (002)
Trigsted, Todd	596	02.01 (030), 02.07 (001)
Trigsted, Todd	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Trost, Charles H.	879	01.01.01.02 (006), 05.05.01 (016), 05.08.01 (014)
Troxel, Doris G.	64	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Troxel, Sarajane M.	151	01.02.01.02 (006), 08.01 (001), 08.05.06 (025)
Tschirgi, Scott	1157	05.08.01 (014)
Tuck, Frank	1321	01.01.01.02 (011)
Tumlin, Gary	1329	01.01.01.02 (011), 05.18.04 (002)
Turchik, Sandy	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Turchinetz, Tildy	1411	08.01 (001)
Turnbill, Johnnie	674	01.01.01.02 (011)
Turner, Kaye	1066	01.02.03 (002), 03.05 (008), 06.05 (002)
Turner, Kaye	1067	01.02.03 (002), 03.05 (008), 06.05 (002)
Turner, Roger	908	01.01.01.02 (006), 02.03 (020), 02.04 (001), 02.06 (002), 02.06 (008), 02.08 (018), 02.08 (059), 03.05 (008),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Turner, Roger	908	03.07 (003), 04.03 (049), 05.05.01 (016), 06.01 (002), 06.02 (016), 06.03 (013), 06.03.02 (002), 06.04.01 (001), 07.02.03 (002), 08.04 (001), 08.05.01 (003)
Turner, Roger	1021	01.01.01.01 (022), 02.01 (026), 02.03 (008), 02.03 (022), 02.04 (058), 02.06 (030), 03.03 (008), 03.05 (008), 03.07 (003), 04.03 (001), 06.05 (002), 08.03.03 (002)
Turner, Roger	1024	01.01.01.01 (022), 02.01 (026), 02.03 (008), 02.03 (022), 02.04 (001), 02.06 (030), 03.03 (008), 03.05 (008), 03.07 (004), 04.03 (001), 08.03.03 (002)
Tylan, Mark	182	05.10 (021)
Tyler, Nancy	1306	01.01.01.02 (006)
Tyler, William A.	1381	01.01.01.02 (011)
Ulahwti	983	02.02 (003), 02.04 (002), 02.04 (060), 03.08 (010), 05.08.01 (024), 05.08.01 (025), 05.09 (008)
Ulbright, Edgar P.	296	02.01 (026), 02.04 (002)
Ulbright, Edgar	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Ulbright, Edgar P.	306	02.04 (060), 04.03 (001), 05.09 (001), 05.10.02 (007)
Unger, Richard	1169	01.01.01.01 (015)
Union River Basin Protection Association	147	See Manheimer, Elaine
Union River Basin Protection Association	344	See Manheimer, Elaine
Union River Basin Protection Association	1344	See Manheimer, Elaine
Union River Protection Association	142	See Beardsley, Robert
Usrey, Elgan H.	1444	01.01.01.01 (046), 01.01.01.02 (011), 01.01.01.02 (035), 02.03 (004), 02.04 (059), 04.03 (065), 05.05 (024), 05.08.01 (004), 05.08.03 (016), 05.09 (001), 05.09 (005), 05.09 (015), 05.09 (020), 05.10 (039), 05.10 (067), 05.10.02 (028), 05.11 (003), 05.11 (005), 05.11.03 (003), 05.12 (010), 05.15 (001)
Utah Peace Test	797	See Meacham, Brian E.
Uyehara, Richard F.	382	08.01 (001), 08.01 (002)
Uyehara, Richard F.	383	08.01 (001), 08.01 (002)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Uyehara, Richard F.	394	08.01 (001), 08.01 (002)
Uyehara, Richard	416	08.01 (001), 08.01 (002)
VA, State of; Off. of Envir. Impact Rev.	844	See Schmidt, Peter W.
Vail, Stephen	652	01.01.01.02 (011), 01.02.01.02 (006), 05.12 (001)
Van Der Harst, John	1109	01.02.03 (002)
Van Every, Robert	1094	01.01.01.02 (006)
Van Fleet, Janet	724	01.01.03 (001), 04.03 (001)
Van Niel, Sally J.	113	02.07 (002), 03.08 (011), 06.02 (003), 08.04 (014)
Van Zandt, Stephen C.	827	02.06 (006), 03.05 (007), 05.08.01 (014), 05.15 (003), 05.16 (007), 05.18.04 (002), 07.04 (004)
Vance, Jesse	1221	01.01.01.02 (011)
Vanderbilt, Gloria	575	08.01 (001)
Vanderven, Peter	1229	02.07 (012)
Varney, Margaret	75	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Varney, Robert W.	127	08.01 (002)
Varriacchio, Louis	675	01.01.02 (007)
Varricchio, Louis	152	01.01.02 (007)
Varricchio, Louis	622	01.01.02 (007)
Varricchio, Marilyn	152	01.01.02 (007)
Vaughan, Edna R.	1434	01.01.01.02 (011)
Vegwert, Mark	435	01.01.01.02 (006), 05.05 (017)
Velasco, Steve	1272	05.12.04 (001)
Vieten, Vincent	1409	08.04 (010), 08.05.04 (007), 08.05.06 (005)
Viglielmo, Frances	407	03.03 (008), 03.04 (011), 05.10.02 (017), 05.11.03 (001), 08.01 (001), 08.01 (004), 08.03.01 (005), 08.05.06 (005), 08.05.06 (025)
Viglielmo, Frances	413	08.01 (004), 08.03.01 (005), 08.03.01 (011), 08.05.03 (003), 08.05.06 (005), 08.05.06 (023), 08.05.06 (024), 08.05.06 (025)
Von Tressenhussen, Englebrecht	226	09.01 (004)
Von Want, Bob	1414	08.05.04 (003)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Voras, Phil	719	02.04 (010), 03.08 (007), 04.01 (001), 04.01 (005), 06.01 (002), 06.05 (002)
WA, State of; Dept. of Health	843	See Strong, T. R.
Waber, Don	486	08.01 (004)
Wade, Marty	1017	03.05 (029), 05.08.01 (014), 05.10.02 (002), 05.12 (001), 06.05 (002), 08.03.01 (013)
Wade, Marty	1018	03.05 (029), 05.08.01 (014), 05.10.02 (002), 05.12 (001), 06.05 (002), 08.03.01 (013)
Wade, Mike	1057	01.01.01.02 (006)
Wagner, Paul	828	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Wagner, Robert J.	904	01.01.01.01 (004), 01.02.01.01 (006)
Wagner, Shirley	828	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
Walker, Amy	974	01.01.01.01 (022), 01.01.01.02 (006), 03.07 (004), 05.08.01 (014), 05.08.01 (044), 05.10.02 (007), 05.12.08 (001)
Walker, Authur	646	01.01.01.02 (011), 05.12 (001)
Walker, John	638	05.15 (016)
Walker, John	641	05.15 (016)
Wallace, Ann	489	08.01 (001)
Wallbaum, Gary	1136	01.01.01.02 (011), 05.18.01 (005), 06.04 (008), 06.09 (013)
Walters, Barbara	444	09.01 (004)
Walters, Curtis	578	08.04 (018), 08.05.06 (005)
Walton, Barbara A.	1279	01.01.01.01 (022), 01.02.03 (002), 05.12.08 (001), 06.05 (016)
Wanzenried, Fred	756	01.01.01.02 (006), 03.08 (011), 05.08.01 (014), 05.10 (006)
Wanzenried, Maxine	756	01.01.01.02 (006), 03.08 (011), 05.08.01 (014), 05.10 (006)
Ward, Eric	628	09.01 (004)
Ward, Sonne	613	06.04 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Ward, Sonne	623	06.04 (001)
Ward, Sonne	791	06.04 (003)
Ward, Sonne	1030	06.04 (001)
Ward, Sonne	1068	05.11.03 (014)
Warner, Sharon	1416	08.04 (010)
Warren, Jeffrey	896	02.04 (024), 03.05 (002), 04.03 (001), 05.05.01 (001)
Warren, Jeffrey	1179	02.08 (001)
Washburn, Charlotte	743	03.05 (008), 04.01 (005)
Washburn, James	743	03.05 (008), 04.01 (005)
Washington, Jim	528	08.04 (013), 08.04 (014), 08.04 (019)
Washington Democratic Council	313	See Zepeda, Barbara
Washington Peace Action	312	See Gleysteen, Rod
Washington, State of; Dept. of Ecology	303	See Stohr, Joe
Washington, State of; Dept. of Ecology	877	See Phillips, Keith E.
Watkins, Karen	1096	01.01.01.02 (011), 05.10.02 (007)
Watson, Brian E.	76	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Watson, Brian E.	918	03.05 (008), 03.08 (011), 08.03.01 (005)
Watson, Carole	1202	01.01.01.02 (006)
Watson, Jackson L.	1194	01.01.01.02 (006)
Watson, Kelley	975	01.01.01.01 (039), 01.01.01.02 (006), 01.02.01 (002), 03.03 (008), 03.07 (003), 05.08.01 (014), 05.11.03 (020), 05.18.04 (002)
Watters, Brad	143	08.04 (010)
Watteyne, Marilyn J.	784	01.01.01.01 (005), 01.02 (001), 03.04 (010), 03.05 (009), 03.08 (011)
Watts, Frances	231	01.01.01.01 (022)
Waud, Carol S.	23	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Weagel, Charles R.	27	08.01 (004), 08.05.06 (005), 08.05.06 (030)
Weatherley-White, Matthew	1290	08.01 (001)
Weaver, Larry W.	514	09.01 (003)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Webb, Chuck	102	08.04 (010), 08.04 (014)
Webb, David R.G	135	08.01 (001)
Weeg, Steven	1061	01.01.01.02 (006), 02.01 (029), 02.08 (051), 04.01 (001), 04.03 (021), 04.03 (038), 04.03 (051), 04.04.01 (001), 05.09 (001), 05.10.02 (002), 06.01 (002), 06.02 (015), 06.06 (003), 06.07 (001), 08.03.03 (002)
Weeks, Constance	55	01.02.01.02 (006), 03.05 (008), 04.05 (018), 08.05.03 (002)
Wegman, Jerry	1253	01.01.01.02 (002), 05.08.01 (014)
Welborne, Sally	1407	07.04 (001)
Wells, Matthew	363	03.03 (008), 03.05 (008), 06.07 (011), 06.09 (013)
Wells, Matthew	365	03.03 (008), 03.05 (008), 06.07 (011), 06.09 (013)
Wells, Matthew	999	03.03 (008), 03.05 (008), 06.07 (011), 06.09 (013)
Wentlandt, Carol	136	08.01 (001)
Werth, Robert	793	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Werth, Wendy	796	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Wesley, R. L.	1343	01.01.01.02 (011)
Wessner, Peggy	688	01.01.01.01 (022)
Western States Legal Foundation	1119	See Costner, Brian
Wheeler, Paige	1247	02.07 (012)
Whitaker, O'Kelley	165	08.04 (011), 08.05.06 (025)
White, C. E.	1442	01.02.03 (002), 02.08 (002)
White, Michael	436	01.01.01.02 (006), 03.08 (010), 05.05 (017)
White, Sue	436	01.01.01.02 (006), 03.08 (010), 05.05 (017)
Wicks, Frank	189	06.05 (017)
Wicks, Kirk	617	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Widener, Judith E.	360	01.01.01.01 (008), 04.03 (001), 05.11.03 (026), 06.09 (024)
Wiethorn, Richard E.	862	01.01.01.02 (006), 01.01.01.02 (010), 01.02 (001), 03.07 (004), 05.05 (017), 05.08.01 (014), 05.10.02 (007), 06.06 (003)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Wiggins, Thomas	499	08.01 (001), 08.04 (010), 08.04 (014)
Wiggins, Tom	46	08.01 (001), 08.04 (010), 08.05.05 (002)
Wilcox, Bernard	290	03.05.05 (003)
Wile, Charles H.	788	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Wiles, B.	322	08.01 (002)
Wilkinson, Leah	783	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Willcox, Bernard	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Williams, Emily	732	01.01.01.02 (006), 05.12 (001)
Williams, Leroy	337	05.11 (002), 06.07 (001), 08.04 (010), 08.04 (013), 08.05.04 (004), 08.05.04 (005)
Williams, Linda	198	03.08 (010), 08.03.01 (003), 08.03.01 (005)
Williams, Linda	203	03.08 (010), 08.03.01 (003), 08.03.01 (005)
Williams, Linda	215	03.03 (008), 03.08 (010), 08.01 (005)
Williams, Paul	574	01.01.01.01 (022)
Williams, Terry	732	01.01.01.02 (006), 05.12 (001)
Williams, Theresa E.	732	01.01.01.02 (006), 05.12 (001)
Williams, Woodie	91	06.09 (011), 08.01 (002), 08.06 (004)
Williams, Woodie	166	08.04 (001), 08.04 (018)
Williams, Xenia	973	02.08 (002), 05.05 (015), 05.08.01 (014)
Wills, Steve	953	03.07 (003), 05.08.01 (014)
Wilson, Christopher B.	38	08.06 (004)
Wilson, George	297	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
Wilson, George	307	01.01.01.01 (022), 01.02.01 (003), 02.07 (012), 02.08 (002), 03.03 (008), 05.11.02 (006), 05.12.07.01 (002), 08.01 (001)
Wilson, Kay W.	554	08.04 (010)
Wilson, Randi	436	01.01.01.02 (006), 03.08 (010), 05.05 (017)
Wimberly, Jan	1142	01.01.01.02 (006)
Windham, Craig	612	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Windham, Craig	612	03.05 (009), 03.08 (011)
Wison, Hazel	1214	01.01.01.02 (011)
Witlock, Brenda	671	01.01.01.02 (011)
Witte, Beverly J.	934	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Wolf, Evelyn	711	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Wolf, Kathy	182	05.10 (021)
Wood, Marlene Y.	150	08.05.06 (004), 08.05.06 (005), 08.05.06 (006), 08.05.06 (025)
Woodland, Wade	1394	01.01.01.02 (006), 01.01.02 (005)
Woodward, Karen	570	08.04 (010)
Wornum, George	512	03.05 (008), 05.12 (001), 08.01 (001)
Worth, Annie	48	08.05.06 (028)
Worthington, Marjorie	63	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Wrenn, Jane	493	08.01 (001)
Wright, Alden	661	01.01.01.02 (011)
Wright, Catherine	940	05.08.01 (014), 07.01.02 (004)
Wright, Creed	1398	01.01.02 (005), 01.02.01.02 (001)
Wright, Russell	707	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
Wurster, Connie	1213	06.09 (013), 08.01 (001)
Wyman, Don	34	08.01 (002)
Wyndham, Harald	421	01.01.01.02 (006), 05.05 (017), 05.12 (001)
Yandell, Forrest	628	09.01 (004)
Yandell, Forrest	637	01.01.01.02 (008), 01.02.01.02 (006), 04.03.01 (017)
Yankee Atomic Electric Company	848	See Kadak, Andrew C.
Yeoman, Margaret M.	33	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Yohe, Robert M.	857	05.03 (001)
Young, Diana G.	533	05.08.01 (014), 05.09 (001)

COMMENT/RESPONSE DOCUMENT INDEX

Alphabetically By Name

Name	Comment Document Number	Response Section Numbers
Young, Richard S.	534	01.01.01.02 (006), 05.12 (001)
Young, Tin Hu	388	04.05 (021), 08.04 (018)
Young, Tin Hu	389	08.04 (013), 08.04 (018)
Zaidi, Rafiq	164	08.03.05 (005), 08.05.04 (005)
Zajac, Nell	1230	02.07 (012)
Zanover, Sally	1255	08.04 (010)
Zayha, Al	813	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
Zepeda, Barbara	313	02.06 (010), 03.01 (001), 03.08 (008), 07.04 (004), 08.05.11 (004)
Zinumerman, Madeline M.	686	08.01 (004), 08.04 (010), 08.04 (018)
Zimsen, Andrew	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Zimsen, William D.	346	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
Zink, David CA	69	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
Zollo, Frank	192	05.10.01 (004), 08.01 (001), 08.03.01 (001)
Zollo, Frank	207	01.02.03 (002), 08.03.01 (001)
Zurmuhlen, Edward	196	08.01 (001), 08.04 (018), 08.04 (019), 08.05.04 (006)
Zuvela, Anthony J.	885	08.01 (001)

APPENDIX B

Responses to Comments by Comment Document Number

The following document numbers are not included in the sequence of document numbers shown due to administrative reasons. The numbers not used are: 29, 45, 105, 161, 174, 234, 248, 249, 346, 396, 451, 460, 504, 507, 1010, 1071, 1072, 1073, 1074, 1075, 1078, 1079, 1117, 1118, 1121, 1124, 1127, 1418, and 1443.

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1	Reppun, J. I. Frederick	06.06 (003), 08.05.01 (007), 08.06 (001)
2	Calverley, Paul H.	09.01 (003)
3	Bailey, William M.	04.05 (001), 08.01 (001)
4	Anonymous	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
5	Farber, Ruth	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
6	Kennedy, Nancy	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
7	Kaeser, Norma D.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
8	Fields, Charles E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
9	Pahlka, Sharon	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
10	Mallant, Lisa J.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
11	Anderson, Bruce S.	08.01 (001), 08.04 (010), 08.04 (011), 08.05.04 (007), 08.05.07 (002)
12	Pepper, Lennard J.	08.01 (001), 08.04 (010), 08.05.04 (002), 08.05.07 (002)
13	Suzuki, Nathan	08.01 (001), 08.03.02 (001), 08.04 (010), 08.04 (013), 08.04 (014), 08.04 (015), 08.05.07 (001), 08.05.07 (003), 08.05.11 (001), 08.05.11 (004)
14	Powell, Walbridge J.	08.05.05 (001)
15	Pohl, Lois	09.01 (003)
16	Calverley, Paul H.	02.03 (001)
17	Mink, Patsy T.	08.01 (001), 08.01 (002), 08.05.02 (001), 08.05.06 (023), 08.05.07 (002), 08.06 (004)
18	Fortunoff, Saul	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
19	Megrue, Maxey	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
20	Dworkin, Mona	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
20	Dworkin, Mona	08.04 (009), 08.04 (014)
21	Masumoto, Harold S.	08.01 (001), 08.03.02 (001), 08.03.02 (002)
22	Grizzle, Rodney P.	09.01 (004)
23	Waud, Carol S.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
24	Donohue, Brian P.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
25	Gordon, Carol	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
26	Briggs, Geoff	01.01.01.01 (008), 02.06 (027), 03.01 (001), 03.05 (008),
		03.05.05 (001), 04.03 (001), 05.12 (001), 05.18.04 (002)
27	Weagel, Charles R.	08.01 (004), 08.05.06 (005), 08.05.06 (030)
28	Hescheid, Joseph W.	05.10 (013), 05.11.01 (006), 05.11.03 (003), 05.11.03 (015)
30	Gumenberg, Kathleen	08.01 (001), 08.02 (001), 08.05.06 (005)
31	O'Connell, Rosemary	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
32	Caldwell, Lola K.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
33	Yeoman, Margaret M.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
34	Wyman, Don	08.01 (002)
35	Austrom, Dawn	08.04 (010), 08.04 (014)
36	Stone, Bettie J.	01.01.01.02 (006), 01.02.01.02 (001), 01.02.03 (002),
		04.01 (005), 04.03 (033), 08.05.03 (001)
37	Frogner, David	08.05.06 (005), 08.05.11 (006)
38	Wilson, Christopher B.	08.06 (004)
39	Brown, Charles R.	08.01 (004)
39	Brown, Reatha O.	08.01 (004)
40	Cooke, Ian M.	08.01 (001), 08.04 (010), 08.05.06 (022), 08.05.06 (023),
		08.05.06 (028)
41	Gallo, Cathleen	08.03.01 (009)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
42	Moeller, John	08.04 (001)
43	Spies, Robert D.	01.02.03 (002), 05.12.08.01 (001), 06.07 (005)
44	Schmalz, Bruce L.	02.01 (002), 02.03 (011), 03.08 (015), 06.05 (016), 08.03.03 (002)
46	Wiggins, Tom	08.01 (001), 08.04 (010), 08.05.05 (002)
47	Benz, J. A.	08.04 (010), 08.05.06 (005)
48	Worth, Annie	08.05.06 (028)
49	Person, Dora M.	01.01.02 (005), 03.04 (008), 03.04 (009), 05.08.01 (014)
50	Russell, Rosemary	08.04 (010), 08.04 (014)
51	Pressan, Doris	08.04 (010), 08.05.06 (030)
51	Pressan, Ray	08.04 (010), 08.05.06 (030)
52	Aiken, Carol	08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.05.07 (001)
53	Megrue, Maxey	03.08 (010)
54	Butler, Diane W.	08.04 (010), 08.05.07 (001)
55	Weeks, Constance	01.02.01.02 (006), 03.05 (008), 04.05 (018), 08.05.03 (002)
56	Crane, Andrew	01.01.01.02 (006), 05.08.01 (014), 07 (001)
57	Barber, Mary C.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
58	Rabin, Stanford	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
59	Esbeck, Edward S.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
60	Aylward, John J.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
61	Roberts, Jean C.	03.01 (001), 08.01 (001), 08.03.01 (004), 08.04 (014), 08.04 (015), 08.05.06 (023), 08.05.06 (025)
62	Mager, Talmon R.	02.06 (032), 06.09 (007)
63	Worthington, Marjorie	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
64	Troxel, Doris G.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
65	Gregory, James N.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

65	Gregory, James N.	08.04 (009), 08.04 (014)
66	Gimel, Marlin	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
67	Sperry, Carolyn W.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
68	Alexander, Judith L.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
69	Zink, David CA	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
70	Shea, Donald R.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
71	D'Alessio, David	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
72	Davidson, Cora E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
73	Lundstedt, Tom	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
74	Medin, M.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
75	Varney, Margaret	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
76	Watson, Brian E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
77	Sutton, Shelley	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
78	Luthy, Louise	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
79	Fordyce, Philip A.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
80	Miller, Joseph	04.03 (005)
81	Morris, Heloise	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

81	Morris, Heloise	08.04 (009), 08.04 (014)
82	Forck, Jim	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
83	Giggey, Mary	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
84	Collum, Jeff C.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
85	Dight, Ruth	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
86	George, Coleen	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
87	Taylor, Steve T.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
88	McFaul, David R.	08.04 (010)
89	Butler, Diane	08.01 (001), 08.06 (002)
90	Henton, Thomas E.	08.04 (010), 08.04 (013)
91	Williams, Woodie	06.09 (011), 08.01 (002), 08.06 (004)
92	Spies, Robert D.	02.08 (024)
93	Rodgers, Patricia M.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
94	Ramey, Rochelle	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
95	Miller, Winifred E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
96	Keeney, Harold S.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
97	Spitalny, Paul	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
98	Schwarz, Ted M.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
99	Devereaux, Eugene E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

99	Devereaux, Eugene E.	08.04 (009), 08.04 (014)
100	Lorella, Kathy C.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
101	Gilmore, Ginnie	08.04 (010), 08.04 (014)
102	Webb, Chuck	08.04 (010), 08.04 (014)
103	Fong, Thelma V.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
104	Risser, Peter	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
106	Schedin, Todd	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
107	Sickles, Linda	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
108	Steele, William K.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
109	Pittman, Rosemary	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
110	Malan, Linda	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
111	Gilmore, Leigh	08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.04 (010), 08.04 (013), 08.04 (014), 08.05.05 (002)
112	Ibele, Margaret R.	06.05 (011), 08.01 (001)
113	Van Niel, Sally J.	02.07 (002), 03.08 (011), 06.02 (003), 08.04 (014)
114	Grant, Jane F.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
115	Kogut, William	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
116	Sweet, Sallie	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
117	Magee, Joan	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
118	Medwell, Nancy	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
118	Medwell, Nancy	08.04 (009), 08.04 (014)
119	Trenor, Dorothy L.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
120	Strandell, Amy J.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
121	Brown, Robert G.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
122	Bainbridge, Winnifred	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
123	Crawford, Gordon	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
124	Moore, Emma E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
		08.04 (009), 08.04 (014)
125	Reppun, J. I. Frederick	08.04 (003), 08.04 (010), 08.05.03 (006), 08.05.06 (003)
126	Stokes, Don R.	03.05 (023), 03.05.03 (003), 06.05 (009), 06.09 (046)
127	Varney, Robert W.	08.01 (002)
128	Austrom, Dawn	08.04 (010), 08.04 (014)
129	Loeb, Bernard S.	09.01 (003)
130	Slifer, B.	01.01.01.02 (006), 05.08.01 (014)
131	Bowers, Katharina	02.07 (012), 03.08 (010), 08.04 (010), 08.05.03 (001),
		08.05.06 (004), 08.05.06 (005)
132	Lein, Ray H.	08.05.04 (004)
133	Fay, William M.	05.02 (004), 05.08.01 (054)
134	Louch, Charles D.	02.06 (025), 08.04 (010), 08.05.06 (012)
135	Webb, David R.G	08.01 (001)
136	Wentlandt, Carol	08.01 (001)
137	Coleman, Peter F.	01.01.01.02 (006), 04.03.01 (019), 05.10.02 (006),
		05.10.02 (016), 05.12 (001), 06.05 (016)
138	DeMarco, Anita	08.03.01 (005), 08.03.01 (007), 08.03.01 (009), 08.04 (010)
139	Pocuis, D. Leo	08.04 (010)
140	Stevens, Alexander R.	05.11.02 (006), 08.04 (010)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
141	Cooper, Kathleen B.	08.01 (002)
142	Beardsley, Robert	08.03.01 (002), 08.03.01 (005), 08.04 (010), 08.05.05 (002)
143	Watters, Brad	08.04 (010)
144	Corr, Cecilia	06.09 (007), 06.09 (013), 06.09 (014)
145	Stockdale, Jeri	08.04 (010), 08.04 (013), 08.04 (014), 08.05.04 (004)
146	Sims, Lynn	01.02.01.02 (008), 03.08 (011), 04.01 (005), 05.10.01(031), 05.18.04 (002), 06.05 (001), 06.09 (013), 07.04 (004), 08.01 (002), 08.03.01 (003)
147	Manheimer, Elaine	03.03 (008), 04.01 (005), 07 (001), 08.03.01 (005), 08.03.01 (008), 08.03.03 (001), 08.03.03 (002), 08.03.05 (001), 08.04 (026), 08.05.01 (001), 08.05.01 (009), 08.05.03 (001), 08.05.05 (002), 08.05.06 (026), 08.05.06 (028), 08.06 (003), 08.06 (011)
148	King, Joan O.	02.07 (013), 03.08 (010)
149	Hall, Pamela	08.01 (004), 08.04 (010)
150	Wood, Marlene Y.	08.05.06 (004), 08.05.06 (005), 08.05.06 (006), 08.05.06 (025)
151	Troxel, Sarajane M.	01.02.01.02 (006), 08.01 (001), 08.05.06 (025)
152	Varricchio, Louis	01.01.02 (007)
152	Varricchio, Marilyn	01.01.02 (007)
153	Matthews, R. S.	02.08 (023), 04.03 (057), 05.10 (027), 08.05.11 (002), 08.05.11 (003)
154	Crocker, Nan	01.01.01.02 (006), 05.12 (001), 07.01.02 (001)
155	Nickerson, Russell	08.02 (001), 08.04 (010)
156	Enquist, Robert W.	08.01 (002)
157	Patrick, Lewis W.	04.03.01 (001)
158	Smith, Ben L.	02.02 (002), 02.08 (025), 04.01 (005), 04.03 (001), 04.03 (003), 04.03.01 (005), 04.03.02.01 (001), 06.05 (026), 06.05 (028), 06.07 (001)
159	Egan, Joseph	08.03.01 (008)
160	Griffin, James	08.01 (004), 08.03.01 (005), 08.05.06 (005)
162	Harsley, Raleigh G.	08.04 (010)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
163	McGinnis, Anna	08.04 (010)
164	Zaidi, Rafiq	08.03.05 (005), 08.05.04 (005)
165	Whitaker, O'Kelley	08.04 (011), 08.05.06 (025)
166	Williams, Woodie	08.04 (001), 08.04 (018)
167	Deegan, Robert	01.02.01.02 (006), 02.08 (006), 03.04 (007), 04.03 (027), 05.12.03 (002), 06.03 (001), 08.03.01 (008), 08.03.04 (001), 08.04 (002), 08.04 (016), 08.05.06 (025), 08.05.06 (030)
168	Hall, Theodore R.	08.03.01 (005), 08.05.06 (032)
169	Clemens, Johnny	08.04 (010), 08.04 (015), 08.05.08 (001)
170	Linnell, William S.	05.10.02 (017), 05.19 (016)
171	Copeland, William E.	08.03.01 (005), 08.03.01 (007), 08.05.06 (034)
172	Bogen, Douglas	08.01 (001), 08.03.01 (004), 08.03.01 (005), 08.04 (001)
173	Morse, Macy	02.08 (007), 04.03 (001), 08.05.03 (004), 08.05.10 (010)
175	Bogen, Douglas	05.10 (029), 08.01 (001), 08.03.01 (004)
176	Hamilton, Bill	02.07 (012), 08.01 (001), 08.02 (001), 08.03.01 (003), 08.03.01 (006)
177	Cole, Roger P.	06.01 (002), 08.03.01 (004), 08.03.01 (005), 08.03.01 (006), 08.03.01 (014), 08.05.03 (002)
178	Petty, Guy	02.03 (010), 08.04 (018), 08.04 (019), 08.05.04 (004), 08.05.06 (028), 08.05.06 (033)
179	Bogen, Doug	08.01 (001), 08.03.01 (004), 08.03.01 (014), 08.03.01 (018), 08.04 (001)
180	Emery, Susan	08.03.01 (004), 08.04 (010), 08.04 (013), 08.04 (014), 08.05.04 (002)
181	Emery, Susan	08.03.01 (004), 08.04 (013), 08.04 (014), 08.05.04 (002)
182	Bogen, Douglas	05.10 (021)
182	Cole, Roger P.	05.10 (021)
182	Emery, Susan	05.10 (021)
182	Hamilton, Bill	05.10 (021)
182	Nuick, Dick	05.10 (021)
182	Petty, Guy	05.10 (021)
182	Questions and Answers, Kittery, ME Evening	05.10 (021)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
182	Tylan, Mark	05.10 (021)
182	Wolf, Kathy	05.10 (021)
183	Petty, Guy	08.05.02 (002), 08.05.04 (002), 08.05.05 (001), 08.05.06 (002), 08.05.06 (027), 08.05.06 (033)
184	Axelrod, Daniel M.	03.01 (009), 06.09 (016)
185	Romane, Richard R.	08.05.06 (032)
186	Lotts, A. L.	01.01.01.01 (029), 04.03 (032), 05.12.06 (002), 06.03 (011), 06.09 (005)
187	Ellis, Thomas	08.01 (006), 08.03.01 (005), 08.03.01 (010), 08.03.01 (021), 08.05.07 (003)
188	Mackay, Daniel	04.03 (019), 04.04 (008), 04.04.01 (002)
189	Wicks, Frank	06.05 (017)
190	Elman, John	04.03 (001)
191	Lambert, James	05.10.02 (017), 05.10.02 (019), 08.03.01 (005), 08.03.05 (001), 08.05.06 (001)
192	Zollo, Frank	05.10.01 (004), 08.01 (001), 08.03.01 (001)
193	Shannon, John	02.08 (041), 03.04.01 (005), 05.11.01 (002), 08.03.01 (012)
194	Kelly-Lind, Ellen	02.07 (012), 02.08 (002), 06.05 (011), 08.01 (001), 08.03.01 (001), 08.03.01 (003), 08.03.01 (004), 08.03.01 (005)
195	Shannon, John	02.08 (041), 05.11.01 (002), 05.18.04 (002)
196	Zurmuhlen, Edward	08.01 (001), 08.04 (018), 08.04 (019), 08.05.04 (006)
197	Bryant, Ronald	08.01 (002)
198	Williams, Linda	03.08 (010), 08.03.01 (003), 08.03.01 (005)
199	Lambert, James	05.10.02 (017), 06.09 (014), 08.05.05 (003)
200	Lambolot, James	08.01 (002)
201	Gelsey, Rudolph	08.03.01 (001), 08.03.01 (003), 08.03.01 (004), 08.05.08 (001)
202	Mackay, Daniel	02.03.01 (003), 03.03 (008), 06.01 (002), 06.01.01 (001), 06.02 (021), 06.05 (001)
203	Williams, Linda	03.08 (010), 08.03.01 (003), 08.03.01 (005)
204	Trieble, Wilbur	08.05.04 (002)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
205	Purner, Jeff	08.01 (002)
206	Brodie, Hal	03.08 (016)
207	Zollo, Frank	01.02.03 (002), 08.03.01 (001)
208	Questions and Answers, Ballston Spa, NY Ev	02.07 (001), 03.04 (010), 08.01 (001), 08.03.01 (010), 08.05.06 (001)
209	Sanders, James E.	01.02.03 (002), 04.03 (001)
210	Koerberl, Dwight D.	03.03 (013), 08.01 (001)
211	Solomon, Gerald B.	08.01 (002)
212	Kelly-Lind, Ellen	01.02.03 (002), 02.08 (002), 06.05 (011), 07.04 (001), 08.03.01 (003)
213	Kellam, Janet K.	01.01.01.02 (006), 04.03 (001), 05.08.01 (014), 06.05 (010)
214	Lambert, James R.	05.10.02 (017), 05.10.02 (019), 08.03.01 (005), 08.03.05 (001), 08.05.06 (001)
215	Williams, Linda	03.03 (008), 03.08 (010), 08.01 (005)
216	Brodie, Hal	03.08 (016)
217	Morgan, Elizabeth	08.01 (004)
218	Gelsey, Rudolph	03.01 (001), 05.10.02 (023), 08.01 (002), 08.03.01 (003), 08.03.01 (004)
219	Bechtel, Dennis	01.01.01.01 (015), 05.12 (001), 05.15 (007)
220	Mazon, Mike	03.08 (019), 06.05 (004)
221	Lewnow, Richard	01.01.01.02 (004)
222	Carroll, Stevi	01.01.01.02 (006), 03.03 (008), 05.12 (001)
223	Treichel, Judy	01.01.01.01 (022), 01.02.03 (002), 03.08 (007), 04.05 (007), 05.11.03 (003)
224	Skinner, Lawrence	05.16 (006)
225	Brown, Chris	01.01.01.01 (022), 02.01 (007), 02.04 (005), 04.01 (003), 05.10.02 (018), 05.11.03 (003), 05.12.04 (003), 06.07 (001), 08.03.01 (005), 09.01 (004)
226	Brown, Chris	09.01 (004)
226	Coleman, Marsha	09.01 (004)
226	Mazon, Mike	09.01 (004)
226	Questions and Answers, Las Vegas, NV Aftern	09.01 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
226	Skinner, Lawrence	09.01 (004)
226	Von Tressenhussen, Englebrecht	09.01 (004)
227	Hilmas, Duane	09.01 (003)
228	Skinner, Lawrence	05.16 (006)
229	Questions and Answers, Ballston Spa, NY Af	09.01 (004)
230	Herbert, Patricia A.	01.01.02 (002), 01.02.03 (002), 02.06 (027), 03.01 (001), 04.01 (005), 05.08.01 (025), 06.09 (013), 07.01.01 (003)
231	Watts, Frances	01.01.01.01 (022)
232	Hedgepeth, Dave	01.01.01.01 (022), 01.01.01.02 (011), 03.08 (011), 03.08 (012), 04.03 (001), 05.11.01 (008)
233	Lagergren, Ginna	05.08.01 (014), 05.09 (004), 06.05 (002)
233	Lagergren, Ken	05.08.01 (014), 05.09 (004), 06.05 (002)
235	Meigs, Marilyn F.	06.02 (010), 06.04 (010)
236	Davenport, Les	09.01 (004)
236	Grainger, Jamie	09.01 (004)
236	Questions and Answers, Pasco, WA Evening	09.01 (004)
237	Devine, John C.	06.01 (008), 06.02 (010)
238	Grainger, Jamie	02.01 (006), 03.07 (007), 04.03 (027)
239	Steele, Selma A.	04.03 (018), 05.10.02 (016), 08.04 (010), 08.04 (013)
240	Schierloh, Brooke	04.03.01 (019), 06.09 (013), 08.04 (010)
241	Luxem, David A	01.01.01 (002), 05.12 (001), 08.01 (001)
242	Hill, Crag	02.01 (030), 04.03 (001)
242	Schneider, Laurie	02.01 (030), 04.03 (001)
243	Moore, James F.	02.08 (001), 05.08.01 (014)
244	Bryan, Mary	01.01.01.01 (015), 02.04 (028), 02.04 (060), 02.07 (007), 02.08 (052), 03.08 (012), 04.01 (001), 05.10 (058), 05.11.01 (008), 06.05 (002), 06.09 (019)
245	Lambert Holenstein, Kathryn (Cherie)	02.06 (001), 02.08 (033), 03.05 (008), 04.03 (001), 04.03 (021), 06.07 (001)
246	Leistiko, Ron	03.08 (001), 05.11.02 (001), 05.11.02 (006), 05.12.03 (001), 05.12.06 (002), 05.13 (001)
247	Knight, Paige	01.01.01.01 (022), 04.03 (001), 06.01.01 (001), 06.09 (043),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
247	Knight, Paige	08.03.01 (013)
250	Belsey, Dick	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Cropper, Tom	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Farrell, Russ	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Knight, Paige	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Morse, Macy	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Questions and Answers, Portland, OR Aftern	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Steele, Jen	01.01.01.02 (020), 06.09 (017), 09.01 (004)
250	Stranahan, Lori	01.01.01.02 (020), 06.09 (017), 09.01 (004)
251	Belsey, Richard	02.01 (026), 02.03 (014), 02.03 (015), 02.08 (020), 03.08 (023), 04.04 (017), 05.09 (001), 06.01 (006), 06.01.01 (001), 08.03.01 (013)
252	Howes, Deborah	03.05 (024), 04.03 (031), 05.08.03 (003), 05.12 (001), 05.12.03 (002)
253	Knight, Paige	01.01.01.01 (022), 01.01.01.01 (041), 04.03 (001), 06.09 (043), 08.03.01 (013)
254	Farrell, Russ	02.07 (001), 03.08 (010), 06.09 (013), 08.03.01 (001), 08.03.01 (004)
255	Cropper, Tom	05.18.04 (002)
256	Greer, Beth	01.02.01 (005), 02.08 (046), 08.03.01 (005)
257	Peck, Geraldine	01.02.03 (002), 02.08 (002), 05.10.02 (016)
258	Sims, Lynn	01.02.03 (002), 03.05 (008), 03.08 (011), 05.10.02 (016), 05.12.08 (001), 06.09 (013), 07 (001), 08.01 (001)
259	Dunning, Dirk	05.10.02 (002), 05.10.02 (022), 06.01 (011), 06.01 (016), 06.03 (008), 06.09 (009), 08.05.01 (003), 08.06 (006)
260	Antilla, Everett	02.06 (001), 03.05 (008), 04.03 (001), 05.12 (001)
261	Ferguson, Ken	01.01.01.02 (006), 01.02.03 (002), 02.08 (047), 03.05.05 (002), 03.06 (001)
262	Leistiko, Ron	02.04 (001), 03.08 (001), 03.08 (011), 04.03 (001), 05.10.02 (016), 05.11.02 (001), 05.11.03 (025), 05.12.03 (001), 05.12.06 (002), 05.13 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
263	Reitnour, Michael	01.02.03 (002), 02.01 (026), 04.03 (001), 04.03.01 (019),
263	Reitnour, Michael	05.12 (001), 05.12.07.01 (002)
264	Klein, Robin	02.04 (010), 03.07 (003), 05.09 (001), 05.10 (023), 05.11.02 (001), 05.12.08 (001), 05.18.04 (002), 06.02 (028), 06.05 (016), 06.09 (013)
265	Morse, Macy	01.01.01.02 (006), 03.05 (008), 04.03 (001), 05.09 (003), 05.10 (021), 05.12.06 (003), 06.06 (003), 07.04 (001), 08.03.01 (005), 08.03.01 (008), 08.05.08 (001)
266	Lambert Holenstein, Kathryn (Cherie)	02.06 (001), 04.03 (001), 06.07 (001)
267	Sutton, Thomas B.	02.08 (020)
268	Fruing, John	09.01 (004)
268	Knight, Paige	09.01 (004)
268	Porter, Lynn	09.01 (004)
268	Questions and Answers, Portland, OR Evenin	09.01 (004)
268	Teuksbury, Ross	09.01 (004)
269	Belsey, Richard	01.01.01.01 (004), 02.03 (005), 02.03 (024), 04.04 (008), 05.10 (029), 05.10.01 (004), 05.10.02 (002), 05.10.02 (016), 05.10.02 (017), 05.12 (005), 05.12.07.01 (001), 05.12.07.01 (002), 05.12.08 (001), 06.05 (001), 06.07 (001), 08.03.01 (013), 08.04 (001)
270	Knight, Paige	01.01.01.01 (022), 02.01 (023), 02.06 (001), 02.08 (002), 03.01 (001), 03.01 (008), 03.08 (012), 04.03 (001), 05.09 (002), 05.10 (021), 05.10 (055), 05.11.03 (003), 05.15 (024), 05.16 (001), 05.19 (004), 06.05 (011), 06.05 (016), 06.05 (030)
271	Acuff, Brian	05.12.06 (002)
272	Tewksbury, Ross	01.02 (001), 05.11.02 (001), 05.12.06 (002), 06.03.01 (001)
273	Penfield, Janet	08.03.01 (008)
274	Sutton, Barry	03.05.05 (003)
275	Olson, Lynn	06.09 (007)
276	Bellman-Cruz, Laurie J.	08.04 (009), 08.04 (010), 08.04 (020), 08.04 (021), 08.05.04 (002)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
277	Eddy, David C	05.10.01 (004), 08.03.01 (009), 08.03.01 (011), 08.04 (010), 08.04 (020)
277	Eddy, David C	
278	McFarlane, Harold F.	01.01.01.01 (002), 01.01.02 (007), 06.05 (002)
279	Davison, David I.	08.04 (010), 08.04 (014), 08.04 (018), 08.04 (021), 08.05.05 (002), 08.05.06 (005), 08.05.06 (006), 08.05.06 (027), 08.05.06 (032)
280	Downey, Patricia	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
281	Smith, Desmond F.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
282	Heilman, Paul E.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
283	Porter, Lynn	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
284	Somers-Gulsvig, Julie A.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
285	Boehm, Mark A.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
286	Altier, Leslie	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008), 08.04 (009), 08.04 (014)
287	Johnson, Barry L.	09 (021)
288	Foster, Nicki L.	01.01.01.01 (022), 01.01.01.02 (006), 05.12.08 (002)
289	Smith, Tony	03.08 (010)
290	Wilcox, Bernard	03.05.05 (003)
291	Meigs, Marilyn F.	02.04 (004), 04.03 (027), 06.02 (010)
292	Springer, Elizabeth	03.04 (021), 05.04 (020), 05.10 (066), 05.10.02 (016), 05.11 (001), 05.12.03 (003), 08.01 (001), 08.03.01 (005), 08.04 (010), 08.05.06 (008)
293	Oesterhaus, Carole L.	08.01 (005), 08.03.05 (001), 08.04 (021)
294	Anonymous	01.01.01.02 (003), 02.06 (003), 02.06 (016), 05.09 (018), 05.12 (001), 05.12.03 (002), 05.12.06 (002), 05.13 (001), 05.13.04 (001), 06.02 (011)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
295	Lee, James	02.07 (001), 02.07 (012)
296	Ulbright, Edgar P.	02.01 (026), 02.04 (002)
297	Baldwin, Paul	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Canfield, Kerry	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Crandall, Kathryn	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Critchley, Mel	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Dyson, Jessica	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Gibbs, Dominic	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Harding, Hilary	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Lang, Lance	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Larson, Jim	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Pollet, Gerald	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Questions and Answers, Seattle, WA Afterno	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Slatin, Alfred	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Surielo, Carrie	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Ulbright, Edgar	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)
297	Willcox, Bernard	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001), 05.13 (001), 06.09 (013)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
297	Wilson, George	02.06 (037), 02.07 (012), 03.08 (012), 05.12 (001),
297	Wilson, George	05.13 (001), 06.09 (013)
298	Baldwin, Paul	02.07 (012), 02.08 (045), 03.03 (008)
299	Noland, Jane	01.01.01 (002), 01.01.01.02 (006), 02.07 (001), 03.04 (014), 05.09 (001), 05.10.01 (005), 05.11.02 (006), 05.12 (001), 05.12.06 (002), 05.12.07.01 (002), 05.13.04 (001), 06.09 (013)
300	Meigs, Marilyn F.	04.03 (027)
301	Pollet, Gerald	01.01.01.01 (015), 03.04 (014), 04.03 (005), 04.03 (064), 05.10.02 (003), 05.11.02 (006), 05.11.02 (007), 05.12 (001), 05.12.03 (002), 06.09 (014), 08.03.01 (008), 08.04 (016), 08.05.06 (008)
302	Crandall, Kathryn	02.03 (024), 02.07 (012), 04.03 (055), 05.10 (022), 05.10.02 (017), 06.09 (013), 08.03.01 (003), 08.03.01 (008), 08.03.01 (014), 08.03.05 (001)
303	Stohr, Joe	01.01.01.01 (042), 02.08 (052), 03.07 (003), 05.09 (014), 06.02 (005), 08.01 (002), 08.01 (004), 08.01 (005), 08.03.01 (015)
304	Larson, Jim	02.07 (012), 05.08.02 (010)
305	Lang, Lance	02.06 (037), 03.03 (008), 04.03 (001), 06.09 (013)
306	Ulbright, Edgar P.	02.04 (060), 04.03 (001), 05.09 (001), 05.10.02 (007)
307	Wilson, George	01.01.01.01 (022), 01.02.01 (003), 02.07 (012), 02.08 (002), 03.03 (008), 05.11.02 (006), 05.12.07.01 (002), 08.01 (001)
308	Harding, Hilary	02.07 (012)
309	Species, Scott	02.04 (002), 03.08 (010), 06.07 (011)
310	Johnston, Anne	03.05 (018), 03.08 (011), 04.03 (001), 05.10.02 (016), 06.09 (013)
311	Dyson, Jessica	02.07 (012), 02.08 (002), 03.02 (003), 08.04 (010), 08.04 (014), 08.04 (016)
312	Gleysteen, Rod	02.07 (012), 03.03 (002), 03.07 (003), 06.06 (003)
313	Zepeda, Barbara	02.06 (010), 03.01 (001), 03.08 (008), 07.04 (004), 08.05.11 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
314	Canfield, Kerry	03.08 (012), 04.03 (027), 05.12.03 (002), 05.13 (001),
314	Canfield, Kerry	06.09 (013)
315	Quiakana, Marcus	01.02.01 (005), 02.06 (004), 03.03 (008), 05.10.02 (007), 07.04 (004)
316	Donnelly, Tom	02.04 (010), 03.03 (008), 05.16 (005), 08.03.01 (012), 09 (010)
317	Straw, Owen	03.08 (013)
318	Kain, Helene	08.04 (010)
319	Anonymous	02.07 (001)
320	Bryant, Chris	03.08 (013)
321	Mohtiak, Dan	03.08 (013)
322	Wiles, B.	08.01 (002)
323	Indeterminate, Andrew A.	08.03.01 (005), 08.04 (010), 08.05.03 (003), 08.05.06 (027)
323	Indeterminate, Patricia L.	08.03.01 (005), 08.04 (010), 08.05.03 (003), 08.05.06 (027)
324	Adrian, Jim	01.02.03 (002), 08.01 (002), 08.03.05 (006)
325	Southland, Robert E.	05.19 (011)
326	Diehl, Don	02.08 (001), 03.01 (001)
327	Bachaud, J. D.	01.02.01.02 (006)
328	Gardner, Jeanne	02.06 (001), 06.04 (005)
329	Billings, Josh	02.07 (012), 04.04 (008), 08.03.01 (001), 08.04 (001)
330	Best, Karen	08.01 (001), 08.04 (010), 08.04 (014), 08.04 (021), 08.05.03 (003)
331	Stone, Bettie J.	04.01 (005), 05.10.02 (017)
332	Paulsen, William S.	08.04 (010), 08.04 (014)
333	Pocuis, D. Leo	08.04 (010)
334	Haney, Richard	08.04 (010)
335	Theriot, Pierre	05.12 (001), 08.01 (004), 08.01 (005), 08.04 (001)
336	Haney, Mary	08.04 (010), 08.05.06 (005)
337	Williams, Leroy	05.11 (002), 06.07 (001), 08.04 (010), 08.04 (013), 08.05.04 (004), 08.05.04 (005)
338	Parypa, Andrew	08.01 (002), 08.01 (003)
339	Martin, Clarence	08.01 (001), 08.01 (002), 08.05.05 (005)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
340	Graber, Henry	01.02.03 (002)
341	Graber, Dorothy	08.01 (001), 08.01 (002), 08.01 (005), 08.04 (010), 08.04 (013), 08.05.04 (005), 08.05.06 (005)
342	Johnson, Heather	08.01 (001), 08.04 (010), 08.04 (013), 08.04 (014), 08.04 (019)
343	Hoffman, Marcus	06.05 (011), 08.01 (001), 08.01 (004), 08.03.01 (012), 08.04 (010), 08.04 (013)
344	Manheimer, Elaine	02.04 (010), 03.05 (005), 03.08 (011), 04.01 (005), 06.05 (014), 06.05 (016), 08.01 (001), 08.03.01 (005), 08.03.01 (012), 08.03.01 (022), 08.04 (008), 08.04 (010), 08.04 (014), 08.04 (022), 08.04 (026), 08.05.01 (001), 08.05.01 (009), 08.05.03 (001), 08.05.05 (002), 08.05.06 (026), 08.05.06 (027), 08.05.10 (002), 08.05.10 (003), 08.05.10 (008), 08.06 (003), 08.06 (007), 08.06 (008), 08.06 (011), 08.06 (015), 08.06 (016)
345	Gegner, Bert	08.03.01 (016)
346	Banks, Virginia	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Biggs, Alan	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Cooper, Ida Mae	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Crandall, Kathryn	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Dyson, Jessica	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Gardner, Jenne	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Heng, Neda	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Lefcoski, Jack	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
346	Lingworthy, Mariel	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013),
346	Lingworthy, Mariel	08.05.01 (009)
346	Manheimer, Elaine	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Osborne, Dan	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Pollet, Gerald	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Questions and Answers, Bremerton, WA Eveni	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Rogers, Albert W.	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Romane, Richard	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Sorosua, Adrian	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Swanson, Mary	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Takaro, Tim	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Turchik, Sandy	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Zimsen, Andrew	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
346	Zimsen, William D.	02.06 (037), 08.01 (001), 08.01 (002), 08.04 (013), 08.05.01 (009)
347	Lefcoski, Jack	01.02.03 (002), 06.05 (020), 09.01 (004)
348	Gleysteen, Mary	02.01 (032), 02.07 (012), 04.01 (005), 08.03.01 (005), 08.03.01 (009), 08.03.01 (011)
349	Pollet, Gerald	02.07 (012), 04.03 (005), 05.09 (001), 05.10.01 (005), 05.10.02 (003), 05.12.06 (002), 08.03.01 (007), 08.05.06 (008)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
350	Cooper, Ida May	01.02.03 (002), 08.01 (001)
351	Donnelly, Tom	01.02.01.02 (006), 02.04 (002), 02.04 (010), 02.06 (007), 08.03.01 (008), 08.05.06 (032)
352	Fessenden, Loyette	08.03.05 (001), 08.04 (021), 08.05.06 (025), 08.05.08 (001)
353	Babbitt, Maryellen	08.01 (001), 08.01 (004), 08.04 (010), 08.04 (013), 08.05.06 (031)
354	Dyson, Jessica	01.02.01.02 (006), 01.02.03 (002), 04.03 (005), 08.01 (001)
355	Crandall, Kathryn	04.03 (005), 04.04 (008), 06.01 (002), 06.09 (024), 08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.04 (010)
356	Hudson, Jackie	08.01 (001), 08.03.01 (005)
357	Graves, Dallas J.	05.19 (001), 08.03.01 (009), 08.04 (016), 09.01 (004)
358	Haugen, Monna E.	02.07 (012), 04.01 (005), 06.02 (006), 06.05 (016), 08.03.01 (009), 08.05.06 (004), 08.05.06 (005), 08.05.06 (006)
359	Bellman Cruz, Laurie J.	08.03.05 (004), 08.04 (010), 08.04 (013), 08.04 (020), 08.04 (021), 08.05.04 (002)
360	Widener, Judith E.	01.01.01.01 (008), 04.03 (001), 05.11.03 (026), 06.09 (024)
361	Parker, Sharon	01.01.01.02 (006), 04.03 (001)
362	Podraza, Florence	08.05.06 (005)
363	Wells, Matthew	03.03 (008), 03.05 (008), 06.07 (011), 06.09 (013)
364	Bartschi, Earl	01.01.01.02 (006), 02.04 (060), 05.10.02 (016)
364	Bartschi, Glenna	01.01.01.02 (006), 02.04 (060), 05.10.02 (016)
365	Wells, Matthew	03.03 (008), 03.05 (008), 06.07 (011), 06.09 (013)
366	Cole, Christine N.	01.01.01.02 (006), 04.03 (001), 05.18.01 (002)
367	Questions and Answers, Pearl City, HI Afte	08.03.02 (001)
368	Aiken, Carol	02.08 (001), 03.08 (007), 08.01 (001), 08.03.05 (001)
369	Lucas, Pam	08.01 (001), 08.03.02 (001), 08.03.05 (001), 08.05.02 (003), 08.05.03 (003), 08.05.05 (001), 08.05.06 (005), 08.05.06 (023)
370	Abraham, Naomi	05.11.03 (026), 08.03.01 (011), 08.05.03 (003), 08.05.06 (005)
371	Anderson, Bruce S.	08.03.01 (004), 08.03.01 (012), 08.04 (010), 08.04 (011),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
371	Anderson, Bruce S.	08.04 (012), 08.05.04 (006), 08.05.06 (005), 08.05.07 (002)
372	Nahoopii, Kawika	08.01 (001)
373	Iezza, Cora	08.03.01 (018), 08.03.02 (001), 08.05.02 (003), 08.05.04 (001), 08.05.04 (002)
374	Pollock, Marilyn	05.15 (003), 08.04 (010), 08.04 (013), 08.05.06 (023), 08.05.06 (031)
375	Malama, Kaonohi	08.01 (004), 08.04 (010), 08.05.06 (006)
376	Sutton, Richard	01.02.03 (002), 08.01 (001), 08.04 (010), 08.04 (013), 08.05.06 (025)
377	Osorio, Jonathan K.	08.01 (001), 08.03.01 (005), 08.03.05 (001), 08.04 (003), 08.05.02 (001), 08.05.02 (003)
378	Priolo, John	08.05.04 (001)
379	Lloyd, Alan	08.04 (010), 08.04 (018)
380	Kakalia, Clara	08.01 (001), 08.01 (002), 08.03.01 (011), 08.03.04 (001), 08.03.05 (001), 08.05.02 (003), 08.05.06 (005)
381	Souza, Jerry	08.01 (001), 08.03.01 (001), 08.04 (010)
382	Uyehara, Richard F.	08.01 (001), 08.01 (002)
383	Uyehara, Richard F.	08.01 (001), 08.01 (002)
384	Priolo, John	02.06 (001), 08.01 (002), 08.05.04 (001)
385	Gates, Marilyn	05.10 (010), 05.10 (021), 08.01 (001), 08.03.01 (001), 08.03.01 (004), 08.03.01 (005), 08.03.01 (007), 08.03.05 (002), 08.04 (010), 08.04 (029), 08.05.01 (008), 08.05.06 (005), 08.05.06 (022), 08.05.06 (031), 08.05.07 (001)
386	Gora, Francine H.	08.04 (010), 08.04 (020)
387	Shannon, Beth L.	08.01 (001)
388	Young, Tin Hu	04.05 (021), 08.04 (018)
389	Young, Tin Hu	08.04 (013), 08.04 (018)
390	Souza, Jerry G.	08.04 (010)
391	Pollock, Marilyn	08.03.01 (012), 08.04 (010), 08.04 (013), 08.05.06 (023), 08.05.06 (031)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
392	Lucas, Pamela L.	02.08 (001), 08.01 (001), 08.03.05 (001), 08.05.06 (005),
392	Lucas, Pamela L.	08.05.06 (023)
393	Anderson, Bruce S.	08.01 (001), 08.04 (010), 08.04 (011), 08.05.04 (007), 08.05.07 (002)
394	Uyehara, Richard F.	08.01 (001), 08.01 (002)
395	Priolo, John	02.06 (001), 08.01 (002), 08.05.04 (001)
397	Morris, Evelyn	08.01 (001), 08.04 (010), 08.05.04 (002), 08.05.06 (007), 08.05.07 (002)
398	Kahunahana Castro Howell, Anna Marie	08.01 (001)
399	Toyama, Ben	08.01 (003)
400	Liborio, Kevin	08.01 (003)
401	McCoy, Nina R.	03.01 (001), 08.01 (001), 08.01 (005), 08.03.01 (004), 08.04 (010), 08.04 (011), 08.04 (013), 08.04 (014), 08.04 (015), 08.05.02 (004)
402	McCoy, Nina R.	03.08 (010)
403	Hubbard, Lela	08.01 (001), 08.01 (004), 08.03.01 (004), 08.03.01 (005), 08.03.01 (011), 08.03.05 (001), 08.05.11 (001)
404	Abraham, Naomi	08.01 (001)
405	Hangca, Luis	08.05.06 (025), 08.05.07 (005)
406	Talkington, John	08.03.01 (001), 08.03.01 (007), 08.03.05 (001)
407	Viglielmo, Frances	03.03 (008), 03.04 (011), 05.10.02 (017), 05.11.03 (001), 08.01 (001), 08.01 (004), 08.03.01 (005), 08.05.06 (005), 08.05.06 (025)
408	Hershinow, David	04.03 (001), 05.10.02 (016), 08.01 (001), 08.03.01 (011), 08.04 (008), 08.05.06 (023)
409	Kepano, Virginia A.	08.01 (001), 08.03.02 (001), 08.05.06 (005), 08.06 (001)
410	Nahoopii, Kawika	08.01 (001), 08.03.02 (001), 08.05.02 (002), 08.05.02 (003), 08.05.06 (005)
411	Jones, Michael	03.03 (008), 08.03.01 (022), 08.03.03 (001), 08.03.05 (002), 08.04 (001), 08.05.04 (002), 08.05.06 (007), 08.05.06 (027), 08.05.06 (028), 08.06 (005)
412	Priolo, John	08.05.04 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
413	Viglielmo, Frances	08.01 (004), 08.03.01 (005), 08.03.01 (011), 08.05.03 (003),
413	Viglielmo, Frances	08.05.06 (005), 08.05.06 (023), 08.05.06 (024), 08.05.06 (025)
414	McCoy, Nina R.	08.01 (004), 08.03.01 (001), 08.04 (010), 08.04 (011), 08.04 (013), 08.04 (014), 08.05.02 (004), 08.05.04 (003)
415	Jones, Michael	03.03 (008), 08.03.01 (022), 08.04 (001), 08.04 (020), 08.05.06 (007), 08.05.06 (028), 08.06 (005)
416	Uyehara, Richard	08.01 (001), 08.01 (002)
417	Hershinow, David	04.03 (001), 05.10.02 (016), 08.01 (001), 08.03.01 (011), 08.04 (008), 08.05.06 (023)
418	Kepano, Virginia A.	05.11.03 (026), 08.01 (001), 08.03.05 (002), 08.04 (010)
419	Talkington, John	08.03.01 (007), 08.03.05 (001), 08.04 (014), 08.05.06 (005)
420	Harrington, Philip S.	04.03 (001), 08.04 (010), 08.04 (013), 08.05.01 (009)
421	Wyndham, Harald	01.01.01.02 (006), 05.05 (017), 05.12 (001)
422	Canham, Susan	05.10 (006), 05.12.06 (002)
423	Harvey, William D.	01.02.01.02 (006), 03.02 (001)
424	Meigs, Marilyn F.	02.04 (004), 04.03 (027), 06.04 (010)
425	Leslie, Bret	02.04 (060), 04.01 (002), 04.03 (001), 04.03 (047), 05.10.01 (009), 06.05 (001), 06.05 (002), 08.01 (001), 08.03.03 (002), 08.04 (019)
426	Carricato, Mike	09.01 (004)
426	Flory, Brenda	09.01 (004)
426	Leslie, Bret	09.01 (004)
426	Questions and Answers, Arlington, VA After	09.01 (004)
427	Amber, Dave	09.01 (004)
427	Questions and Answers, Arlington, VA Eveni	09.01 (004)
427	Robinowitz, Mark	09.01 (004)
428	Bhide, Manohar	02.06 (028), 03.05.05 (007), 04.01 (005), 05.19 (001), 06.03.02 (003)
429	Robinson, Enders A.	05.10.01 (003), 06.09 (024)
430	Bhide, Manohar	02.06 (028), 03.05.05 (007), 05.19 (001), 06.03.02 (003), 06.09 (022)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
431	Meigs, Marilyn F.	02.04 (004), 06.02 (010), 06.04 (010)
432	Robinowitz, Mark	02.01 (031), 02.06 (009), 02.06 (035), 03.03 (002), 03.08 (011), 04.03 (001), 05.10 (021), 05.10.01 (006), 07.01.03 (001)
433	Robinowitz, Mark	02.06 (009), 02.06 (035), 05.10 (021), 05.10 (048), 09.01 (004)
434	Bybee, R. V.	01.01.01.02 (006), 04.03 (001), 05.08.01 (014), 05.12 (001)
435	Vegwert, Mark	01.01.01.02 (006), 05.05 (017)
436	Ernan, Laird	01.01.01.02 (006), 03.08 (010), 05.05 (017)
436	Harrin, Claudia	01.01.01.02 (006), 03.08 (010), 05.05 (017)
436	Schryrer, Laurie	01.01.01.02 (006), 03.08 (010), 05.05 (017)
436	White, Michael	01.01.01.02 (006), 03.08 (010), 05.05 (017)
436	White, Sue	01.01.01.02 (006), 03.08 (010), 05.05 (017)
436	Wilson, Randi	01.01.01.02 (006), 03.08 (010), 05.05 (017)
437	King, Neil	01.02.03 (002), 02.08 (002), 03.08 (010), 05.05 (017), 05.05.01 (016)
438	Farmer, Jack	03.03 (002), 03.08 (011), 05.18.04 (002)
439	Nichols, Mary H.	01.01.01.02 (011), 03.03 (008), 05.08.02 (001), 05.18.04 (002)
440	Jolley, Robert B.	01.01.01.01 (019), 01.01.01.02 (011), 01.02.03 (002), 05.10 (034)
441	O' Neal, James	02.07 (001)
442	Kocher, Warren	09.01 (004)
442	Nichols, Mary H	09.01 (004)
442	O' Neal, James	09.01 (004)
442	Questions and Answers, Kingston, TN Evenin	09.01 (004)
443	Jolley, Robert B.	01.01.01.01 (019), 01.01.01.02 (011), 01.02.03 (002), 05.10 (034)
444	Hedgepeth, Dave	09.01 (004)
444	Honicker, Jeannine	09.01 (004)
444	McCabe, Amy	09.01 (004)
444	Questions and Answers, Oak Ridge, TN After	09.01 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
444	Walters, Barbara	09.01 (004)
445	Smith, Gus	01.02.03 (002)
446	Smith, Ben L.	01.01.01.01 (029), 01.01.01.01 (045), 02.02 (002), 02.04 (037), 02.06 (025), 02.08 (025), 04.01 (005), 04.03 (001), 04.03 (003), 04.03.01 (005), 04.03.02.01 (001), 05.08.01 (004), 06.05 (028), 06.07 (001)
447	McCabe, Amy	01.01.01.02 (011), 02.03 (007), 02.04 (021), 02.04 (041), 02.07 (007), 03.04 (008), 04.03 (041), 04.03.01 (001), 04.03.01 (002), 04.03.01 (006), 05.04 (027), 05.05 (024), 06.07 (015)
448	Honicker, Jeannine	03.07 (004), 04.03 (021), 06.07 (001), 08.04 (001)
449	Hedgepeth, David	01.01.01.01 (022), 01.01.01.02 (011), 03.08 (011), 03.08 (012), 04.03 (001), 05.11.01 (008)
450	Clark, G. Wayne	03.08 (011), 06.07 (012), 06.09 (001)
452	Lotts, A. L.	04.03.02 (006), 04.05 (019), 05.12 (007), 06.07 (001), 06.09 (005)
453	Bryan, Mary	02.03.01 (001), 02.03.01 (004), 02.04 (022), 04.01 (001), 04.03.01 (003), 05.10.01 (028), 05.12.08 (001), 05.16 (001), 06.05 (002), 06.05 (015)
454	Anonymous	01.02.03 (002)
455	Lotts, A. L.	01.01.01.01 (029), 04.03 (032), 05.12.06 (002), 06.03 (011), 06.09 (005)
456	Stockard, Joe L.	02.04 (019), 02.04 (062), 02.07 (001), 05.08.02 (005), 06.02 (020)
457	Todd, Lisa R.	08.03.01 (011), 08.03.05 (001)
458	Brelsford, C. K.	01.01.01.02 (008), 01.02.03 (002), 05.10 (006), 06.03 (013), 06.09 (013)
459	Tauscher, Carol	08.04 (010), 08.04 (013), 08.04 (021)
461	Schrader, Kathi	01.01.01.02 (006)
462	Hilbert, H.	01.01.01.02 (006)
463	Helland, Karen K.	01.02.01.02 (016), 03.07 (004), 03.08 (010), 05.10.02 (016), 06.05 (016), 08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
464	Kessler, Marc A.	01.01.01.01 (008), 01.02.03 (002), 04.03 (001)
465	Stewart, Margaret M.	01.02.03 (002), 02.01 (023), 02.04 (001), 02.07 (004), 03.07 (004), 05.12 (008), 06.01 (002), 08.01 (001), 08.03.01 (005), 08.05.10 (006)
466	Alban, Susan	01.01.01.02 (006)
467	Alban, Daniel L.	05.05 (017)
468	Smith, Deanna	01.02.03 (002), 02.08 (008), 03.07 (003), 04.01 (001), 04.03 (005), 06.01 (013), 06.05 (016), 06.09 (033)
469	Flinn, Alicia	01.01.01.02 (006), 01.02.03 (002), 02.08 (020), 04.03 (001), 05.08.01 (014), 05.10 (014), 05.12 (015), 06.05 (002), 06.07 (001), 06.09 (024)
470	Hausrath, Anne	01.02 (001), 03.03 (008), 05.10 (016)
471	Gardunia, Brian	01.02 (001), 04.03 (042)
472	Hall, Dale O.	08.05.06 (025)
473	Jay, Elisabeth	02.01 (003), 03.03 (008), 05.10 (006), 06.01 (002), 06.01.01 (001)
474	Bjornsen, Fritz	01.01.01.01 (015), 01.01.01.02 (006), 04.01 (005), 04.03 (001), 06.06 (001), 06.09 (024)
475	Read, Heidi	03.03 (008)
476	Barringer, John	01.01.01.02 (006), 01.02.03 (002)
477	McElhinney, Gwynne	04.03 (001), 05.05 (014), 05.05 (015), 05.05.01 (034), 05.08.01 (014), 06.05 (002)
478	Inzer, Jo	02.01 (003), 03.02 (002), 05.05 (017), 05.10 (022), 05.11.03 (037), 06.07 (009)
479	Rinehart, Mark A.	05.08.01 (014)
480	Hausrath, Libby	01.01.01.01 (022)
481	Pumphrey, Laurel	03.03 (008)
482	Kresge, Michele	01.02.03 (002), 05.10 (014), 06.01.01 (001), 06.02 (015), 06.05 (002)
483	Andrus, Cecil D.	01.01.01.01 (004), 01.02.02 (001), 02.01 (030), 02.03 (004), 02.03 (014), 02.04 (007), 02.04 (014), 02.04 (060), 02.08 (002), 03.01 (002), 03.01 (003), 03.04.01 (007),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
483	Andrus, Cecil D.	04.01 (009), 04.03 (061), 05.05.01 (017), 05.08.01 (014), 05.10.02 (002), 05.10.02 (016), 05.10.02 (017), 05.15 (002), 05.18.04 (002), 06.05 (005), 06.05 (016), 06.09 (008), 07.02.01 (001), 07.04 (004), 08.03.01 (008), 08.03.01 (017)
484	Anonymous	08.01 (001)
485	Lafargue, Genevieve	08.01 (001)
486	Waber, Don	08.01 (004)
487	Scott, Frank	05.15 (002)
488	Driscoll, Cristine	08.01 (001)
489	Wallace, Ann	08.01 (001)
490	Lawrence, Linda	08.04 (010), 08.04 (013)
491	Gancio, Ann M.	08.01 (001)
492	Mathews, James C.	08.01 (001)
493	Wrenn, Jane	08.01 (001)
494	Irwin, Donald	01.01.01.01 (022)
495	Topik, Mrs. Fred	01.01.01.01 (022), 03.05 (007)
496	Fleming, Grace M.	08.01 (001), 08.04 (010)
497	Fauci, Joanie	01.01.01.01 (015), 01.01.01.01 (022), 01.01.01.02 (006), 02.01 (026), 04.01 (005), 04.03 (001), 04.03 (048), 05.10.01 (009), 06.07 (001), 07.04 (001)
498	Shim, Julie	08.05.06 (005)
499	Wiggins, Thomas	08.01 (001), 08.04 (010), 08.04 (014)
500	Johnson, Leroy	08.01 (002)
501	Tillett, Jackie	08.01 (001)
502	Anonymous	08.01 (001)
503	Anonymous	08.04 (010)
505	Bennett, Jackie	09.01 (004)
506	Murphy, David	08.01 (002)
508	Bubb, Adella M	08.01 (001)
509	Maginnis, Paul	08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
510	Smith, Matt	02.08 (002), 03.03 (008), 03.07 (004), 05.05.01 (016),
510	Smith, Matt	05.08.01 (014), 05.08.01 (023), 07 (001)
511	Fredericks, Sally	05.05 (015), 05.08.01 (014), 08.01 (001), 08.03.01 (005), 08.04 (003)
512	Davis, Julie	03.05 (008), 05.12 (001), 08.01 (001)
512	Wornum, George	03.05 (008), 05.12 (001), 08.01 (001)
513	Newick, Richard C.	03.03 (008), 03.08 (020), 04.03.01 (017), 08.01 (001), 08.03.01 (001), 08.03.01 (005), 08.04 (013), 08.05.06 (004), 08.05.06 (031)
514	Weaver, Larry W.	09.01 (003)
515	Leming, Earl C.	01.01.01.01 (005), 01.02 (001), 02.01 (004), 02.01 (005), 02.01 (011), 02.02 (001), 02.03 (024), 02.08 (027), 03.06 (001), 04.03.01 (005), 04.03.01 (007), 05.04 (015), 05.04 (018), 05.05 (011), 05.05 (013), 05.05 (024), 05.05 (028), 05.06 (001), 05.06 (002), 05.08 (006), 05.08.01 (003), 05.08.01 (004), 05.08.01 (005), 05.08.01 (008), 05.08.01 (009), 05.08.01 (012), 05.08.01 (035), 05.08.01 (037), 05.08.01 (056), 05.11.02 (005), 05.12.05 (001), 05.12.07.01 (001), 05.19 (014), 06.01.01 (001), 06.02 (013), 06.02 (014), 06.03 (001), 06.03 (003), 06.03 (011), 06.03 (013), 06.07 (001), 08.04 (025)
516	Brimas, Patricia	05.10 (030)
516	Loosier, Carla	05.10 (030)
516	Questions and Answers, Savannah, GA Aftern	05.10 (030)
517	Brimas, Patricia A.	03.07 (004), 03.08 (010), 05.08.02 (005), 05.10.02 (007), 06.09 (024)
518	Loosier, Carla	05.04 (019), 05.12.08 (001), 06.04.01 (002)
519	Everette, Amanda	02.01 (026), 02.07 (001), 03.08 (012), 04.01 (001), 04.01 (005), 04.03 (001), 04.03 (040), 06.01 (002), 06.02 (021), 06.05 (002), 06.07 (001), 06.09 (019), 07.01.02 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
520	Stuart, Ivan F.	05.12.04 (002)
521	Questions and Answers, Savannah, GA Evenin	09.01 (004)
522	Bailey, Dana	01.01.01.01 (005)
523	Hall, Jennifer	01.01.01.01 (005), 05.11.01 (005)
524	Johnson, Heather	05.16 (002)
525	Nasrah, Sister	02.08 (002)
526	Stuart, Ivan	05.12.04 (002)
527	Gump, Grace	03.08 (013), 08.01 (001)
528	Washington, Jim	08.04 (013), 08.04 (014), 08.04 (019)
529	Cook, Reena	08.04 (010), 08.04 (013), 08.04 (014), 08.05.06 (004)
530	Kuhlman, Henry	02.07 (001), 08.01 (001), 08.04 (014)
531	Hondo, Carolyn	01.01.01.02 (006), 03.01 (004), 07 (001)
532	Maikmus, Mary	01.01.01.01 (008), 01.01.01.02 (006), 01.02.01.02 (017), 05.05.01 (016), 05.12 (001)
533	Young, Diana G.	05.08.01 (014), 05.09 (001)
534	Young, Richard S.	01.01.01.02 (006), 05.12 (001)
535	Smith, Arthur P.	08.04 (010)
535	Smith, Ruth A.	08.04 (010)
536	Prater, George	05.05 (026), 08.04 (014)
537	Baldwin, Jane	01.01.01.02 (006), 05.10.02 (016), 05.11.03 (026), 05.15 (014)
538	Andrus, Cecil D.	01.01.01.01 (004), 01.02.02 (001), 02.01 (030), 02.03 (005), 02.03 (014), 02.04 (007), 02.04 (014), 02.04 (060), 02.08 (002), 03.01 (002), 03.01 (003), 03.04.01 (007), 04.03 (006), 04.03 (061), 05.05.01 (017), 05.08.01 (014), 05.10.01 (009), 05.10.02 (002), 05.10.02 (016), 05.10.02 (017), 05.15 (002), 05.18.04 (002), 06.05 (005), 06.09 (008), 07.02.01 (001), 08.03.01 (017)
539	Jay, Elisabeth	02.01 (003), 03.03 (008), 05.10 (006), 06.01 (002), 06.01.01 (001)
540	Pumphrey, Laurel	03.03 (008), 03.04 (018), 06.02 (015)
541	McElhinney, Gwynne	04.03 (001), 05.05 (014), 05.05 (015), 05.05.01 (034),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
541	McElhinney, Gwynne	05.08.01 (014), 06.05 (002)
542	McCollen, Lyn	03.08 (010), 05.09 (001), 05.10 (031), 05.10.02 (003), 05.12 (001), 05.13.04 (001)
543	Inzer, Jo	03.02 (002), 05.05 (017), 05.10 (022), 05.10 (029), 05.10.02 (017), 05.11.03 (037), 06.01.01 (001), 06.07 (009)
544	Hall, Patricia	01.01.01.02 (006), 03.03 (008), 03.07 (003), 03.08 (010)
545	McEnaney, Robert	02.04 (001), 04.01 (005), 04.03 (001), 05.18.04 (001), 06.01 (005), 06.01.01 (001), 06.02 (007), 06.02 (032), 06.06 (006), 07.01 (004)
546	Boucher, Tracy	02.01 (002), 02.08 (034), 06.07 (001)
547	Brady, Marcia W.	03.08 (013), 05.08.01 (014), 06.09 (038)
548	Hall, Patricia	01.01.01.02 (006), 03.03 (008), 03.07 (003), 03.08 (010)
549	McEnaney, Robert	06.01.01 (001), 06.02 (007), 06.06 (002)
550	Boucher, Tracy	02.01 (002), 02.08 (034), 06.07 (001)
551	Bjornsen, Fritz	09.01 (004)
551	Questions and Answers, Boise, ID	09.01 (004)
552	Reppun, J. I. Frederick	06.09 (004), 08.01 (002), 08.05.01 (005), 08.05.01 (006), 08.05.01 (007), 08.05.03 (006), 08.05.06 (005)
553	Doughty, Jane	02.08 (002), 04.03 (001), 05.10.02 (011), 06.09 (019), 08.04 (014), 08.04 (021), 08.05.04 (002), 08.05.06 (023)
554	Wilson, Kay W.	08.04 (010)
555	Horton, Patricia	08.04 (010)
555	Horton, Peter	08.04 (010)
556	Bowman, Tom	05.08.01 (014), 05.09 (001), 06.05 (002)
556	Lousen, Patti	05.08.01 (014), 05.09 (001), 06.05 (002)
557	Fisk, Edison S.	08.04 (010)
558	Leichtman, Kal	08.01 (005)
559	Aho, Margaret	03.04.01 (002), 03.05 (008), 05.08.01 (014), 05.12 (001), 06.05 (002)
560	O'Connor, John	01.01.01.02 (006), 01.02.02 (004), 03.07 (004), 05.04 (004),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
560	O'Connor, John	05.08.01 (014), 05.08.01 (030), 05.11.03 (004)
560	O'Connor, Kacee	01.01.01.02 (006), 01.02.02 (004), 03.07 (004), 05.04 (004), 05.08.01 (014), 05.08.01 (030), 05.11.03 (004)
561	Proksa, Dennis J.	05.09 (001), 05.12 (001), 06.05 (002), 06.07 (010), 07.04 (004)
562	Neumann, David	06.04 (001)
563	Brinton, Cora	01.01.01 (002), 05.10.02 (006), 08.01 (001), 08.06 (020)
564	Schmidt, Gail	08.01 (004), 08.04 (010), 08.05.07 (001)
565	Berger, Bonnie	08.01 (001)
566	Martin, Terry	05.12 (001)
567	McDermott, Vincent	08.04 (013)
567	Swords, Marcella	08.04 (013)
568	Anonymous	02.08 (002)
569	Stewart, Brenda	08.01 (001)
570	Woodward, Karen	08.04 (010)
571	Tillett, Jackie	08.04 (010), 08.05.06 (005), 08.05.06 (022)
572	Halfhill, Tom	08.01 (001)
573	Hill, Wayne	08.01 (001)
574	Williams, Paul	01.01.01.01 (022)
575	Vanderbilt, Gloria	08.01 (001)
576	Mitchell, Thomas	08.04 (010)
577	Stori, Mary	01.01.01.02 (006)
578	Walters, Curtis	08.04 (018), 08.05.06 (005)
579	Shepard, Kathy	01.01.01.02 (006), 08.04 (010)
580	Hassell, Jack N.	08.04 (010)
581	Copley, Ralph	08.03.05 (001), 08.05.06 (030)
582	Campbell, Darrel	06.01 (002), 08.01 (001), 08.04 (001), 08.04 (008)
583	Champagne, Sherry	08.01 (001)
584	Mellen, Roz	08.04 (010)
585	Dove, Debby	08.01 (001), 08.01 (004), 08.05.06 (005)
586	Swanson, Mary	06.09 (013), 08.04 (011)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
587	Dyson, Jessica	02.07 (012)
588	Neumann, David	06.05 (020)
589	Hobbs, Jack	03.04.01 (002), 03.05 (008), 03.05.03 (003), 04.03 (005), 04.03 (031), 06.06 (003), 08.01 (001), 08.04 (011), 08.04 (013), 08.05.06 (005)
590	Qualman, Ronald	01.01.01.02 (006), 08.04 (010), 08.04 (013)
591	Smithhart, Lorne R.	08.01 (001)
592	Detmer, Tami	08.04 (013)
593	Kay, Jerome	08.01 (002)
594	Dee, Keith	08.01 (001)
595	Broschious, Chuck	02.02 (003), 02.03 (025), 02.04 (032), 02.05 (001), 02.06 (021), 02.06 (024), 03.04 (011), 03.04 (018), 03.04.01 (001), 04.01 (001), 04.03 (001), 04.03.01 (014), 05.08.01 (021), 05.09 (008), 05.10.01 (009), 05.11.03 (001), 05.11.03 (013), 05.16 (003), 05.18.01 (008), 05.18.01 (009), 06.03.02 (001), 06.09 (002), 07.04 (004), 07.04 (006), 08.01 (001), 08.03.01 (005), 08.03.01 (008), 08.03.05 (003), 08.05.01 (003), 08.05.01 (007), 08.05.09 (004), 08.05.09 (005)
596	Trigsted, Todd	02.01 (030), 02.07 (001)
597	Hanson, Gertie	01.01.01.01 (022), 01.01.01.02 (006), 04.03.01 (017), 05.05.01 (016), 05.09 (001), 05.09 (008), 05.10 (012), 05.10 (021), 05.10.02 (016), 06.09 (037)
598	Anderson, Kristen	01.01.01.02 (006), 05.08.01 (014)
599	Schalck, D. Kate	05.05 (012), 05.05.01 (018), 05.05.01 (035), 05.05.01 (039), 05.11.03 (018), 05.19 (008), 06.02 (019), 08.03.01 (005)
600	Hanson, Wes	03.05 (022), 03.08 (011), 05.05 (026), 05.09 (002), 05.09 (009), 05.18 (001), 06.09 (035), 08.01 (002)
601	Swan, Kerrigan A.	01.01.01.01 (005), 01.01.01.02 (006), 02.01 (030), 02.07 (001), 05.09 (001)
602	Clubbe, Brett	01.01.01.02 (006), 02.01 (030), 02.08 (002), 02.08 (005),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
602	Clubbe, Brett	03.03 (008), 03.08 (020), 04.03.01 (017), 04.05 (014), 05.04 (020), 05.04 (021), 05.08.02 (007), 05.09 (013), 05.10 (012), 05.11.01 (001), 05.18.04 (002), 05.19 (015), 06.01 (009), 06.02 (012)
603	Thompson, Blake	02.08 (042), 03.05.05 (003), 05.04 (005), 05.08.01 (002), 05.10 (054), 05.10 (059), 05.19 (001), 08.03.05 (006), 08.05.06 (014)
604	Benson, Betty	01.01.01.02 (006)
605	Tockman, Jason	03.03 (002), 03.03 (008), 04.03.01 (017), 05.09 (010)
606	Seaman, Thomas	04.03 (001), 04.03.01 (017)
607	Harvey-Marose, Kevin	01.01.01.02 (006), 02.04 (002), 03.05 (007), 04.03 (001), 05.04 (002), 05.08.01 (014), 07.04 (001)
608	Broschious, Chuck	09.01 (004)
608	Questions and Answers, Moscow, ID Afternoon	09.01 (004)
609	Schalck, D. Kate	05.05.01 (016), 05.05.01 (018), 05.05.01 (035), 05.05.01 (039), 05.08.01 (014), 06.02 (019), 07.04 (001), 08.03.01 (005)
610	Broschious, Chuck	01.01.01.01 (029), 01.02.02 (005), 01.02.02 (006), 01.02.03 (002), 01.03 (003), 02.01 (015), 02.01 (016), 02.03 (004), 02.03 (007), 02.03 (025), 02.04 (003), 02.04 (026), 02.04 (027), 02.04 (032), 02.04 (036), 02.04 (060), 02.05 (001), 02.07 (001), 02.08 (012), 02.08 (040), 03.01 (005), 03.04 (019), 04.05 (022), 05.02 (054), 05.05.01 (001), 05.05.01 (016), 05.05.01 (019), 05.05.01 (034), 05.05.01 (040), 05.08 (008), 05.08.01 (021), 05.08.01 (041), 05.08.01 (053), 05.08.03 (009), 05.09 (008), 05.09 (011), 05.10 (064), 05.10.01 (009), 05.11.03 (013), 05.16 (003), 05.18.01 (008), 06.02 (002), 06.02 (015), 06.02 (019), 06.02 (021), 06.03 (008), 06.03 (009), 06.03 (014), 06.05 (001), 06.05 (026), 06.05 (031), 06.08 (006), 06.09 (017),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
610	Broscious, Chuck	06.09 (021), 07 (003), 07.01 (006), 07.01.03 (003), 07.01.03 (004), 07.01.03 (005), 07.01.05 (001), 07.02 (001), 07.02.03 (001), 07.02.04 (001), 07.02.04 (002), 07.04 (006), 07.04 (007), 08.02 (002), 08.02 (003), 08.03.05 (002), 08.03.05 (003), 08.04 (014), 08.05.01 (002), 08.05.05 (006), 08.05.05 (011), 08.05.06 (021), 08.05.06 (029), 08.05.09 (001), 08.05.09 (002), 08.05.09 (003), 08.05.09 (004), 08.05.09 (005), 08.06 (002)
611	Read, Heidi	03.03 (008)
612	Windham, Craig	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
613	Ward, Sonne	06.04 (001)
614	Grizzle, Rodney P.	09.01 (004)
615	Abbott, Dinah	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
616	Kaiser, Justine	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
617	Wicks, Kirk	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
618	Cogan, Lindy	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
619	Hungerford, Clark	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
620	Owen, Elizabeth	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011), 05.12.08 (001), 06.05 (002)
621	Owen, Robert E.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
622	Varricchio, Louis	01.01.02 (007)
623	Ward, Sonne	06.04 (001)
624	Higginbotham, Jan	03.03 (008), 04.03 (001), 06.09 (051)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
625	Indeterminate, Illegible	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
625	Indeterminate, Illegible	03.05 (009), 03.08 (011)
626	Herring, J. Stephen	01.02.03 (002), 04.01 (005), 05.10 (002), 06.04.01 (002), 06.05 (003), 06.09 (006), 08.03.03 (005)
627	Beeman, Janel	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
628	Ashley, Reed	09.01 (004)
628	Benjamin, Dick	09.01 (004)
628	Cavanaugh, Fred	09.01 (004)
628	Green, Glenn	09.01 (004)
628	McWhorter, Don	09.01 (004)
628	O'Brien, Frank	09.01 (004)
628	Poe, W. Lee	09.01 (004)
628	Questions and Answers, N. Augusta, SC Eveni	09.01 (004)
628	Ward, Eric	09.01 (004)
628	Yandell, Forrest	09.01 (004)
629	Geddes, Rick L.	02.08 (019), 06.08 (001), 08.04 (003)
629	Questions and Answers, N. Augusta, SC Afte	02.08 (019), 06.08 (001), 08.04 (003)
629	Ronic, Bill	02.08 (019), 06.08 (001), 08.04 (003)
629	Sujka, Mike	02.08 (019), 06.08 (001), 08.04 (003)
630	Mowry, Authur	02.06 (023), 03.02 (002), 03.05 (008), 03.05.03 (003), 06.04 (001), 06.05 (003), 06.09 (017), 08.03.01 (004)
631	Costner, Brian	02.04 (042), 02.08 (016), 04.01 (001), 04.03 (001), 04.03.01 (023), 04.05 (001)
632	Geddes, Rick L.	02.01 (026), 04.01 (005), 04.03 (001), 06.09 (040)
633	O'Brien, Frank D.	02.02 (003), 02.04 (034), 06.07 (001)
634	Sipp, Pete	03.05 (007), 04.05 (011)
635	Ferrara, Russ	03.05 (008), 03.08 (003), 05.15 (017)
636	Green, Thomas	01.01.01.02 (008), 03.03 (008), 06.05 (016), 06.06 (003)
637	Yandell, Forrest	01.01.01.02 (008), 01.02.01.02 (006), 04.03.01 (017)
638	Walker, John	05.15 (016)
639	Sujka, Mike F.	01.02.03 (002)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
640	Knotts, Ronald E.	01.02.01.02 (014), 03.05 (008), 04.01 (005)
641	Walker, John	05.15 (016)
642	Thurmond, Senator Strom	01.01.01.02 (008), 05.13.04 (002), 06.05 (016), 06.06 (003)
643	Matthews, R. S.	02.08 (023), 04.03 (057), 05.10 (027), 08.05.11 (002), 08.05.11 (003)
644	Carr, Luther J.	02.08 (042)
645	Price, Mariann	01.01.01.02 (011)
646	Walker, Authur	01.01.01.02 (011), 05.12 (001)
647	Smith, Clyde	06.09 (014)
648	Shane, Chris	01.01.01.02 (011), 05.19 (011)
649	Bradford, Rand	01.01.01.02 (011), 03.05 (007)
650	Shelton	01.01.01.02 (011), 05.10.02 (007)
651	Reed, Kristi	01.01.01.02 (014)
652	Vail, Stephen	01.01.01.02 (011), 01.02.01.02 (006), 05.12 (001)
653	Kotowicz Lloyd, Ann	01.01.01.02 (011)
654	Dickinson, Irene P	01.01.01.02 (011), 03.05 (007), 05.10.02 (016), 05.12 (001)
655	Janes, Pauline	01.01.01.02 (011)
656	Hill, Rhonda	01.01.01.02 (011)
657	Hardwick, Doris	05.10.02 (016)
658	Shootman, Charles	01.01.01.02 (011), 05.10.02 (007), 05.18.04 (002)
659	Rice, Kevin	01.01.01.02 (011)
660	Anonymous	01.01.01.02 (011)
661	Wright, Alden	01.01.01.02 (011)
662	Jordan, Evonne	02.07 (012)
663	Lynch, Janet	02.07 (012)
664	Johnson, Leroy	08.01 (002), 08.03.05 (006)
665	Larson, Lester	01.01.01.02 (011), 03.03 (005)
666	Hassell, Mike	01.01.01.02 (011), 06.09 (013)
667	Millagan, Heston	01.01.01.02 (011), 06.09 (013)
668	Hammons, Dorotha	01.01.01.02 (011)
669	Murphy, Jane	06.05 (016), 08.01 (001), 08.04 (014)
670	Hunt, Sandra	08.01 (001), 08.04 (010)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
671	Witlock, Brenda	01.01.01.02 (011)
672	Fincher, Angie	01.01.01.02 (011)
673	Lewallen, Debra J.	01.01.01.02 (011), 05.10 (061)
674	Turnbill, Johnnie	01.01.01.02 (011)
675	Varriacchio, Louis	01.01.02 (007)
676	Begley, Roger	01.01.01.02 (011), 02.08 (002)
677	Stevenson, Elizabeth	01.01.01.02 (006), 05.08.01 (014)
678	McCombs, Patricia A.	08.04 (010)
679	Kelly, Elizabeth	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
680	Drewes, Kenneth N.	01.01.01.01 (002), 06.05 (016)
681	Blanchard, Florence K.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
682	Gordon, Bart	01.01.01.01 (022), 04.01 (005), 04.03 (010), 04.03.01 (002), 06.09 (013)
683	Knight, Carol	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
684	Johnson, Helen G.	05.10.02 (007), 05.18.01 (002), 08.01 (001), 08.01 (005)
685	Duke, Beth M	05.11.03 (020), 08.04 (013)
686	Zimmerman, Madeline M.	08.01 (004), 08.04 (010), 08.04 (018)
687	Chretien, Rollin	06.04 (001)
688	Wessner, Peggy	01.01.01.01 (022)
689	Daly, Amelia	08.01 (001)
690	Roland, Russ	01.01.01.01 (022), 08.01 (001), 08.01 (002)
691	Minear, Karen	08.01 (001)
692	Delusignan, Dorian	01.01.01.01 (022), 08.01 (001)
693	Flory, Lynn	08.01 (001)
694	Minear, Valara	08.04 (010)
695	Pfeiffer, Pat	08.04 (010), 08.05.04 (002), 08.05.06 (023), 08.05.06 (030)
696	Ormsby, Bill	08.01 (002)
697	Pfeiffer, Arden	08.04 (010), 08.04 (013), 08.04 (018)
698	Lee, Janet	08.01 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
699	Cowles, Betty	08.01 (001)
700	Nakaoka, Charles	08.04 (013), 08.05.06 (005)
701	Chutter, R. J.	08.01 (002), 08.04 (010), 08.04 (013)
702	Nelns, Barbara	01.01.01.01 (022)
703	Camp, George	08.01 (001)
704	Howell, James	08.01 (001)
705	Gonzales, David	08.01 (001)
706	Paulson, Steve	02.01 (030), 05.08.01 (014), 05.10.02 (007), 05.16 (001), 06.05 (026)
707	Anderson, Kristen	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Benson, Betty	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Broschious, Chuck	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Hulett, Chris	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Pritchett, Jane	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Questions and Answers, Moscow, ID. Evening	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Seaman, Thomas	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Thompson, Blake	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Tockman, Jason	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Trigsted, Todd	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
707	Wright, Russell	02.01 (012), 02.01 (030), 02.06 (021), 05.05.01 (020), 05.10.02 (026), 07.04 (001)
708	Meyers	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
708	Meyers	03.05 (009), 03.08 (011)
709	Rouirere, Carol	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
710	Smith, Susan	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
711	Wolf, Evelyn	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
712	Thompsen, Angle	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
713	Biggerstaff CMT, Tere	01.01.01.01 (005), 01.01.01.01 (022), 01.01.01.02 (006), 03.04 (010), 03.05 (009), 03.08 (011), 05.01 (003)
714	Christiansen, Niel	01.01.01.01 (002), 01.01.02 (001)
715	Davis, Elizabeth A.	04.03.01 (021), 06.05 (017)
716	Henderson, Clay P.	08.04 (010)
716	Henderson, Judy	08.04 (010)
717	Berenson, Janet	01.01.01.02 (006)
718	Melville, Chi	01.01.01.02 (006), 02.04 (025), 04.03 (001), 05.08.01 (014), 06.05 (002), 08.03.01 (004), 08.03.03 (002)
719	Cassidy, Deirdre	02.04 (010), 03.08 (007), 04.01 (001), 04.01 (005), 06.01 (002), 06.05 (002)
719	Voras, Phil	02.04 (010), 03.08 (007), 04.01 (001), 04.01 (005), 06.01 (002), 06.05 (002)
720	Spitzer, Debra A.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
721	Ristow, Steven C.	02.03 (028), 02.04 (060), 02.08 (035), 04.03 (001)
722	Albin, Audrey	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
723	Geer, J.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
724	Van Fleet, Janet	01.01.03 (001), 04.03 (001)
725	Feulner, Anne	08.04 (010), 08.04 (014), 08.05.06 (005)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
725	Feulner, Herb	08.04 (010), 08.04 (014), 08.05.06 (005)
726	Streeter, Jack	01.02.03 (002), 02.08 (042), 03.05 (007), 03.05.04 (002)
727	Davidson, Ray C.	08.01 (004)
727	Davidson, Velda	08.01 (004)
728	De Spain, J.	02.03 (002), 03.08 (011), 05.12 (001)
729	Slansky, Cyril M.	01.02.01.02 (006), 03.05.05 (003), 06.02 (034), 06.08 (003), 08.03.05 (006)
730	Eichler, Robert F.	01.01.01.02 (005), 04.05 (004), 05.09 (007), 05.15 (005), 06.05 (007), 08.03.01 (005), 08.05.03 (005), 08.05.04 (005)
731	Cantrill, Dante	01.01.01.02 (006), 02.08 (002), 03.07 (004), 05.18.04 (002)
731	Cantrill, Judie	01.01.01.02 (006), 02.08 (002), 03.07 (004), 05.18.04 (002)
732	Williams, Emily	01.01.01.02 (006), 05.12 (001)
732	Williams, Terry	01.01.01.02 (006), 05.12 (001)
732	Williams, Theresa E.	01.01.01.02 (006), 05.12 (001)
733	Du Val, Elizabeth H.	01.01.01.01 (005), 01.02.03 (002), 04.01 (005), 04.03 (021), 04.05 (020)
734	Ahrens, Patti	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
735	Ahrens, Peter L.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
736	Meltzer, Frank L.	03.08 (007)
737	Edelstein, Jan M.	01.01.01.02 (006), 04.01 (001), 04.03.01 (012), 05.10 (008), 05.18.01 (011), 06.05 (002), 06.05 (008)
738	Stein, Karen	02.07 (014), 02.08 (001), 03.05 (008), 05.04 (016), 06.02 (008)
739	Paroni, Genevieve M.	01.01.01.01 (004), 01.01.01.01 (005), 01.01.01.01 (029), 01.01.02 (001), 05.19 (003), 08.01 (002), 08.03.01 (006), 08.04 (007)
740	Ellis, Cathy	02.03 (002), 03.08 (011), 05.12 (001)
741	Longley, Bee	02.06 (001), 02.08 (001)
742	Reimers, Diane	01.02 (001), 03.05 (008), 04.03 (001), 05.12 (001)
743	Washburn, Charlotte	03.05 (008), 04.01 (005)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
743	Washburn, James	03.05 (008), 04.01 (005)
744	Holt, Kenneth W.	02.01 (018), 02.03 (017), 02.08 (054), 02.08 (056), 04.04 (010), 05.02 (007), 05.02 (008), 05.02 (016), 05.02 (043), 05.10 (035), 05.10 (038), 05.10 (041), 05.10 (063), 05.10.02 (002), 05.10.02 (003), 05.10.02 (012)
745	Eiden, Max	02.04 (006), 04.01 (005), 05.05.01 (001), 05.08.01 (014), 06.07 (001), 08.03.01 (009)
746	Sharpe, Roberta R.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
747	Bowlden, Scott	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
748	Record, Terry	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
749	Pense, Margaret	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
750	Davis, Bruce	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
751	Blanchard, Tom	01.01.01.01 (008), 01.01.01.01 (022)
751	Harling, Leonard	01.01.01.01 (008), 01.01.01.01 (022)
751	House, Rupert	01.01.01.01 (008), 01.01.01.01 (022)
752	Burgess, Dave	01.01.01.01 (022), 03.03 (008), 04.03 (001), 05.08.01 (014), 05.10 (006)
752	Burgess, Kathy	01.01.01.01 (022), 03.03 (008), 04.03 (001), 05.08.01 (014), 05.10 (006)
753	Shroy, Edna E.	08.04 (010)
754	Nelson, Bruce	03.08 (010), 08.04 (010), 08.04 (013)
754	Nelson, Georgia	03.08 (010), 08.04 (010), 08.04 (013)
755	Meza, Patrece	01.01.02 (005)
756	Wanzenried, Fred	01.01.01.02 (006), 03.08 (011), 05.08.01 (014), 05.10 (006)
756	Wanzenried, Maxine	01.01.01.02 (006), 03.08 (011), 05.08.01 (014), 05.10 (006)
757	Cox, Chris	03.07 (003), 06.09 (013)
758	Seels, Phyllis	01.01.01.02 (011), 03.08 (011)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
759	Quiggle, Nancy	01.01.01.02 (011), 03.08 (011)
760	Indeterminate, Mrs. Richard	01.02.03 (002), 03.08 (011)
760	Indeterminate, Richard L.	01.02.03 (002), 03.08 (011)
761	Klein, Richard F.	08.04 (018)
762	Myers, Joy	01.01.01.01 (008), 01.01.02 (001), 04.05 (016), 06.06 (003), 06.07 (001), 08.03.03 (002)
763	Page, Paul	01.01.01.01 (004), 01.01.01.01 (005), 01.01.01.01 (033), 08.01 (002), 08.01 (004), 08.05.06 (005), 08.05.11 (001)
764	Donnelly, Tom	03.03 (008), 03.08 (011), 05.09 (002), 08.03.01 (005), 08.03.01 (006), 08.03.01 (012), 08.04 (010), 08.05.01 (009), 08.05.06 (005), 08.05.06 (032), 09 (010)
765	Mann, Phylliss A.	01.02.01.02 (011), 08.01 (001), 08.04 (003), 08.04 (010), 08.05.05 (002), 08.05.06 (005), 08.05.07 (003), 08.05.07 (006), 08.05.07 (007), 08.05.07 (008)
766	Romane, Richard R.	08.05.06 (031)
767	Parker, Genevieve M.	08.04 (010), 08.04 (014), 08.05.06 (005)
768	Price, Jo	01.01.01.02 (006), 01.02.03 (002), 05.05 (017), 05.05.01 (016), 06.02 (033)
769	Hartman, Diania	02.03 (002), 03.08 (011), 05.12 (001)
770	Stratten, Betty	05.05.01 (016), 05.08.01 (014), 05.12 (001)
771	Eigabroadt, Earl E.	01.02.01.02 (020), 08.01 (002), 08.01 (004)
772	Commander, John C.	01.01.01.01 (038)
773	Loo, Henry	01.01.03 (001), 06.09 (003)
774	Canan, Craig	01.01.01.02 (011), 03.08 (011), 04.03 (001)
775	Essin, Christine	08.01 (001)
775	Hensley, Charlie	08.01 (001)
775	Indeterminate, Clint A.	08.01 (001)
775	Indeterminate, Indeterminate, illegible	08.01 (001)
775	Indeterminate, Kathleen	08.01 (001)
775	Indeterminate, Michail	08.01 (001)
775	Indeterminate	08.01 (001)
775	Lachey, Jeanette	08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
775	Lay, Amanda	08.01 (001)
775	Lindquist, Jeff	08.01 (001)
775	Marmes, Rondel	08.01 (001)
775	Nunnelley, Pamela J.	08.01 (001)
775	Pineus, Kari E.	08.01 (001)
775	Potts, Roxanne M.	08.01 (001)
775	Spiers, Christopher	08.01 (001)
775	Story, Marty	08.01 (001)
776	Nickerson, Jack E.	05.12 (001), 06.04 (001), 06.06 (003)
777	Malone, Terence W.	04.01 (005), 08.01 (002), 08.01 (004), 08.04 (010), 08.04 (014), 08.04 (027), 08.05.07 (003)
778	Duplessis, Lee	02.08 (011), 05.10.02 (021)
779	Bradshaw, Lois	01.02.03 (002), 03.05 (007), 05.05 (017)
780	Melville, Loretta	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
781	Ingalls, Martha	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
782	Stauffer, Carrie L.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
783	Wilkinson, Leah	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
784	Watteyne, Marilyn J.	01.01.01.01 (005), 01.02 (001), 03.04 (010), 03.05 (009), 03.08 (011)
785	Kennedy, Alexandra	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
786	Frazier, Marilyn	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
787	Marcus, Joyce	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
788	Wile, Charles H.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
789	Flynn, Carol L.	01.01.01.02 (006), 05.08.01 (014), 06.07 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
790	Long, Everett	01.01.01.01 (022), 03.08 (011)
791	Ward, Sonne	06.04 (003)
792	Tewell, Joanna C.	01.02.01.02 (006), 01.02.03 (002), 04.05 (013), 05.10 (002), 05.13.01 (003)
793	Werth, Robert	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
794	Maestas, Herman	01.02.03 (002)
795	Gordon, Kathleen C.	04.03 (001), 05.12.08 (001)
796	Werth, Wendy	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
797	Meacham, Brian E.	01.01.01.01 (004), 01.02.01.02 (004), 01.02.03 (002), 03.05 (008), 04.03 (001), 05.13.04 (001), 05.19 (011), 06.01 (002), 06.02 (035), 06.04 (001), 07.04 (001)
798	Huber, Arlene	01.01.01.02 (006)
799	Missin, Meta	01.01.01.01 (022), 05.12 (001)
800	Leusch, Peter	01.01.01.02 (006), 05.12 (001), 07.04 (004)
801	Chaney, Charlotte	01.01.01.02 (006)
802	Hultsch, Roland A.	01.01.01.01 (004), 01.02.01.01 (005)
803	Hardinge, Jeep	01.01.01.01 (005), 01.02 (001), 03.04 (010), 03.05 (009), 03.08 (011)
804	Fraser, Bill	01.01.01.02 (006), 01.02.01.01 (002), 05.05.01 (016), 05.08.01 (014)
805	Saunders, Mary	01.01.01.02 (006), 02.04 (019), 05.09 (001)
806	Reaves, Whitfield	01.01.01.02 (006), 01.02.03 (002), 02.04 (001), 05.09 (001)
807	Moffett, Ed	01.01.01.02 (006), 02.04 (019), 05.09 (001)
808	Moffett, Jennifer	01.01.01.02 (006), 02.04 (019), 05.09 (001)
809	Roberts, Elizabeth A.	03.07 (004), 04.03 (001)
810	McCulloch, Betty	08.04 (013), 08.04 (014)
811	Fredricks, Randall C.	01.01.01.02 (006), 01.01.01.02 (024), 05.05 (017), 05.05.01 (016), 05.08.01 (014)
812	Kanouff, J. M.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
813	Zayha, Al	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
813	Zayha, Al	03.05 (009), 03.08 (011)
814	Hieb, Mary	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
		03.05 (009), 03.08 (011)
815	Lehrad, Klaus	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
		03.05 (009), 03.08 (011)
816	Indeterminate, Illegible	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
		03.05 (009), 03.08 (011)
817	Quapp, W. J.	01.02.03 (002), 06.04 (001)
818	Law, Joe M.	01.02.03 (002), 08.03.05 (006)
819	Fuller, Margaret	01.02.03 (002), 05.05.01 (016), 05.08.01 (014)
820	Hansen, Brent	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
		03.05 (009), 03.08 (011)
821	Indeterminate, Pat	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
		03.05 (009), 03.08 (011)
822	Little, Ben	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010),
		03.05 (009), 03.08 (011)
823	McWhorter, Donald L.	02.01 (014), 02.03 (018), 04.03 (001), 04.03 (005),
		04.04 (001), 05.10.02 (002), 05.15 (002), 08.04 (001),
		08.05.11 (003), 08.05.11 (005)
824	Kocher, Ann	03.07 (003), 05.08.02 (009)
824	Kocher, Warren	03.07 (003), 05.08.02 (009)
825	Peelle, Robert	01.01.01.01 (002), 01.01.01.01 (004), 01.01.01.01 (022),
		01.01.01.02 (033), 01.02 (001), 01.02.01.01 (001),
		01.02.03 (002), 02.01 (020), 02.03 (019), 03.04 (012),
		03.05 (003), 03.07 (002), 05.08.01 (049), 05.08.03 (006),
		05.09 (015), 05.10 (033), 05.10.01 (029), 05.10.02 (014),
		05.10.02 (020), 05.12 (002), 05.12.08 (001), 05.15 (001),
		05.15 (006), 05.18.01 (006), 05.19 (013), 06.02 (014),
		06.03 (011), 06.05 (001), 06.07 (009), 06.09 (049)
826	Hinzelman, John E.	08.01 (002)
827	Van Zandt, Stephen C.	02.06 (006), 03.05 (007), 05.08.01 (014), 05.15 (003),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
827	Van Zandt, Stephen C.	05.16 (007), 05.18.04 (002), 07.04 (004)
828	Wagner, Paul	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
828	Wagner, Shirley	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
829	Bean, Lawrence	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
830	Spencer, Harvey G.	01.01.01.01 (004), 02.08 (022)
831	Hart	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
832	Murray, Alexander P.	02.01 (017), 02.04 (034), 02.08 (009), 04.03 (027), 04.03 (053), 04.03 (056), 04.03 (057), 05.10 (056), 05.18.02 (001), 06.02 (005), 06.04 (001), 06.05 (016), 06.06 (011), 06.07 (006)
833	Drown, Lynn R.	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
834	Hughes, William F.	05.05.01 (016)
835	Fredenburg, Ed	05.10.01 (030)
836	Stibal, Shirley	01.01.01.02 (006), 03.05 (007), 03.07 (004), 05.08.01 (014), 05.09 (003), 08.04 (016)
837	Bruce, Lera G.	01.02.03 (002), 05.08.01 (014)
838	Bodansky, David	05.02 (003), 05.10 (049), 05.15 (018), 06.05 (013)
839	Granlund, Win	08.04 (010), 08.05.06 (005)
840	Dicks, Norm	06.05 (021), 06.07 (001), 08.03.01 (020), 08.04 (010), 08.04 (024)
841	Ganus, Zada K.	08.01 (001)
842	Horton, Lynn B.	08.04 (014)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
843	Strong, T. R.	08.01 (001), 08.01 (002), 08.01 (004)
844	Schmidt, Peter W.	02.01 (008), 04.04 (008), 05.09 (001), 06.07 (001), 08.04 (010), 08.04 (028)
845	Conway, John T.	02.01 (027), 02.04 (042), 02.08 (058), 04.03.02.01 (002)
846	Collins, Arthur L.	01.02.03 (002)
847	Tinno, Keith	01.01.01.01 (022), 01.01.01.01 (043), 01.01.01.02 (026), 01.01.02 (003), 01.02.03 (003), 02.03 (004), 02.04 (001), 02.04 (007), 02.04 (026), 02.04 (031), 02.04 (037), 02.04 (038), 02.04 (057), 02.06 (034), 02.06 (040), 02.08 (013), 02.08 (021), 02.08 (029), 02.08 (030), 03.07 (001), 03.07 (005), 03.07 (008), 03.08 (002), 03.08 (017), 04.03 (002), 04.03 (005), 04.03 (009), 04.03 (015), 04.03 (021), 04.03 (045), 04.03.01 (007), 04.03.01 (009), 04.03.01 (010), 04.03.01 (014), 04.03.01 (020), 04.03.01 (025), 04.03.02 (003), 04.03.02 (004), 04.03.02 (007), 04.05 (002), 04.05 (010), 05.01 (001), 05.01 (002), 05.02 (009), 05.02 (039), 05.02 (040), 05.02 (044), 05.02 (051), 05.03 (002), 05.03 (003), 05.03 (005), 05.03 (006), 05.03 (007), 05.04 (007), 05.06 (006), 05.06 (007), 05.06 (010), 05.06 (011), 05.06 (012), 05.08.01 (014), 05.08.01 (024), 05.08.01 (025), 05.08.01 (039), 05.08.03 (007), 05.08.03 (015), 05.09 (001), 05.09 (006), 05.10 (004), 05.10 (025), 05.10 (029), 05.10.02 (002), 05.11.02 (008), 05.11.03 (008), 05.12.06 (004), 05.13.02 (004), 05.15 (009), 05.15 (010), 05.15 (012), 05.15 (014), 05.15 (015), 05.15 (022), 06.04 (006), 06.05 (016), 06.07 (001), 06.08 (004), 06.08 (006), 06.09 (013), 07 (001), 07.01.04 (001), 08.03.03 (002), 08.03.03 (003), 08.05.06 (009), 08.05.06 (011), 08.05.11 (007)
848	Kadak, Andrew C.	02.03 (015), 06.08 (000), 06.08 (007)
849	Jones, Michael	02.01 (002), 02.01 (013), 05.10 (063), 05.11.03 (031),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
849	Jones, Michael	05.19 (019), 08.03.01 (005), 08.03.01 (018), 08.03.01 (022), 08.03.03 (001), 08.03.03 (002), 08.03.05 (002), 08.04 (001), 08.04 (004), 08.04 (008), 08.04 (023), 08.05.01 (004), 08.05.04 (002), 08.05.04 (007), 08.05.06 (007), 08.05.06 (010), 08.05.06 (015), 08.05.06 (016), 08.05.06 (017), 08.05.06 (018), 08.05.06 (019), 08.05.06 (020), 08.05.06 (023), 08.05.06 (024), 08.05.10 (001), 08.05.10 (005), 08.05.10 (007), 08.06 (005), 08.06 (010), 08.06 (011), 08.06 (017)
850	Duke, Judith C.	08.04 (010), 08.04 (013), 08.04 (014), 08.04 (020), 08.05.06 (005), 08.05.06 (032)
851	Lee, John G.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
852	Herudon, Janet	01.01.01.02 (006), 08.04 (018)
853	Kellam, Janet K.	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
854	Swanson, John R.	05.19 (011)
855	Condit, Clay	05.11.01 (007)
856	Pinkerton, Brad	03.03 (008), 03.05 (024), 05.08.01 (014), 08.03.01 (005)
857	Yohe, Robert M.	05.03 (001)
858	Chapman, Frank R.	02.07 (005), 04.03 (001), 04.04.01 (005), 04.05 (012), 05.05.01 (005), 05.08.02 (003), 05.10.02 (016), 05.12 (001), 05.19 (011), 06.04 (001), 06.05 (001), 06.05 (011), 06.06 (003), 06.09 (013)
859	Taylor, Larry L.	03.05 (007), 06.04.01 (003), 06.04.01 (004), 06.05 (001), 06.09 (006), 08.03.01 (019), 08.04 (001)
860	Hanggi, Dennis M.	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
861	Duke, Robert A.	08.04 (010), 08.04 (013), 08.04 (014), 08.04 (020),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
861	Duke, Robert A.	08.05.06 (005), 08.05.06 (032)
862	Wiethorn, Richard E.	01.01.01.02 (006), 01.01.01.02 (010), 01.02 (001), 03.07 (004), 05.05 (017), 05.08.01 (014), 05.10.02 (007), 06.06 (003)
863	Salazar, Hallette R.	06.09 (019), 08.01 (004), 08.04 (010)
864	Gleysteen, Mary	08.03.01 (005), 08.03.05 (001), 08.04 (008), 08.05.01 (009), 08.05.05 (001), 08.05.06 (025), 08.05.06 (030)
865	Anonymous	08.01 (004), 08.01 (005), 08.01 (008), 08.03.03 (005), 08.03.05 (006), 08.04 (005)
866	Dilley, Les	01.01.01.02 (006)
867	Carpenter, Michelle L.	08.01 (001), 08.04 (010), 08.04 (021), 08.05.05 (002)
868	Iwanski, Myron	01.01.01.01 (040), 02.01 (026), 05.10.02 (020), 05.12 (015)
869	Jull, Paula	01.01.01.01 (022), 01.01.01.02 (006), 04.01 (005)
870	Egan, Joseph R.	02.03 (024), 02.04 (033), 03.04 (008), 03.04 (013), 04.03.02.01 (004), 05.12.03 (002), 05.19 (001), 05.19 (002)
871	Kelly, Elizabeth	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
872	Burgess, Ila G.	01.01.01.02 (006), 02.08 (020), 03.04.01 (004), 05.08.01 (014), 05.12 (001), 06.07 (001)
873	Boswell, JoAnn	01.01.01.02 (006)
874	Jobe, Lowell A.	01.02.03 (002), 02.07 (001), 03.05.05 (006), 06.05 (001), 06.05 (026), 06.07 (001)
875	Peters, Gail	01.01.03 (001), 08.01 (001), 08.05.06 (031)
876	Hill, Debbie W.	01.01.01.02 (011), 01.02.03 (002), 03.08 (011)
877	Phillips, Keith E.	01.01.01.01 (042), 02.01 (024), 02.01 (025), 02.08 (010), 03.04 (001), 03.04 (008), 05.08.02 (012), 05.10 (018), 06.01 (011), 06.01 (017), 06.02 (029), 06.05 (005), 06.07 (001), 06.09 (028), 08.01 (001), 08.01 (004)
878	McConnell, M. R.	08.04 (010)
879	Trost, Charles H.	01.01.01.02 (006), 05.05.01 (016), 05.08.01 (014)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
880	Smith, Vicki	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023),
880	Smith, Vicki	05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
881	Kramer, Angela	05.10 (006), 05.10.02 (010), 05.19 (006), 05.19 (011), 08.04 (014)
882	Hanggi, Patricia	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
883	Buel, Austin	06.09 (019), 08.03.01 (007)
884	Kolb, Catherine	08.01 (001), 08.04 (010), 08.04 (014)
885	Zuvela, Anthony J.	08.01 (001)
886	Bray, Kris	08.01 (001), 08.05.06 (005)
887	Jordan, Thomas	08.01 (001), 08.04 (010)
888	Mitchell, Kelly	08.04 (010)
889	Matz, Joey	08.01 (001), 08.04 (014)
890	Esparza, Micah	08.04 (014)
891	Moore, Marie	08.04 (014)
892	Schmatjen, Jeff	08.01 (001), 08.04 (011)
893	Todd, Megan	08.04 (014)
894	Inabinett, Nathan	03.05 (007), 08.01 (001)
895	Stark, Jenny	08.01 (001), 08.04 (010)
896	Warren, Jeffrey	02.04 (024), 03.05 (002), 04.03 (001), 05.05.01 (001)
897	Condit, Clay	05.11.01 (007)
898	Devlin, Sally	05.12.07.01 (002), 05.15 (023)
899	McDonald, Timothy	05.12.06 (002), 05.12.07.01 (002), 05.13.02 (006), 08.03.01 (013)
900	Campbell, Carroll A.	02.02 (002), 04.03 (001), 06.05 (016), 06.06 (003)
901	Grover, Jean	03.05 (002), 08.01 (001), 08.03.05 (001)
902	Benjamin, Richard W.	02.01 (026), 02.02 (003), 04.03 (001), 04.04 (001), 06.04 (001), 06.05 (023), 08.03.01 (002)
903	Loosier, Carla S.	02.04 (010), 02.06 (033), 03.05 (007), 04.03 (049), 05.10.02 (007), 05.18 (002), 05.18.01 (002), 05.19 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
904	Wagner, Robert J.	01.01.01.01 (004), 01.02.01.01 (006)
905	Deegan, Robert F.	01.02.01.02 (006), 02.08 (006), 03.04 (007), 04.03 (027), 06.03 (001), 08.03.04 (001), 08.04 (010)
906	Bechtel, Dennis	01.01.01.02 (004), 01.02 (001), 02.06 (031), 04.03 (016), 04.03 (020), 05.12 (011)
907	Brailsford, Beatrice	01.02.01.02 (002), 01.02.03 (002), 02 (001), 02.01 (030), 02.03 (006), 02.04 (004), 02.04 (007), 02.06 (005), 03.07 (003), 03.07 (004), 04.01 (001), 04.03 (005), 04.03.01 (002), 04.03.01 (012), 04.03.01 (019), 05.10.02 (016), 06.01 (002), 06.01 (013), 06.05 (002), 06.06 (005), 07.01.05 (002), 08.03.03 (004), 09.01 (004)
908	Turner, Roger	01.01.01.02 (006), 02.03 (020), 02.04 (001), 02.06 (002), 02.06 (008), 02.08 (018), 02.08 (059), 03.05 (008), 03.07 (003), 04.03 (049), 05.05.01 (016), 06.01 (002), 06.02 (016), 06.03 (013), 06.03.02 (002), 06.04.01 (001), 07.02.03 (002), 08.04 (001), 08.05.01 (003)
909	Morrison, Anita	01.01.01.02 (006)
910	Christ, Margaret	05.12 (001)
911	Pottenger, Bob	01.01.01.02 (006)
911	Pottenger, Gerri	01.01.01.02 (006)
912	Swenson, Pamela	05.05.01 (016), 05.08.01 (014), 05.12 (001)
913	Knox, Harry W.	05.05.01 (016)
914	Day, Jon	08.05.06 (005)
915	Kelly, Mary T.	02.06 (034), 02.07 (006), 02.08 (057), 03.08 (010), 04.01 (008), 06.02 (003)
916	George, Roxane	01.01.02 (006), 01.02 (001), 01.02.03 (002), 03.08 (010), 04.03 (001), 04.03.01 (017), 04.05 (018), 05.12 (001), 05.13.01 (002), 08.01 (002)
916	Hulett, Chris	01.01.02 (006), 01.02 (001), 01.02.03 (002), 03.08 (010), 04.03 (001), 04.03.01 (017), 04.05 (018), 05.12 (001), 05.13.01 (002), 08.01 (002)
917	Anderson, Anne M.	03.03 (002), 08.01 (001), 08.04 (014), 08.04 (018)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
917	Anderson, Craig P.	03.03 (002), 08.01 (001), 08.04 (014), 08.04 (018)
918	Watson, Brian E.	03.05 (008), 03.08 (011), 08.03.01 (005)
919	Koslowsky, George	04.03 (001), 08.01 (007), 08.03.01 (003), 08.03.01 (005)
920	Anonymous	01.01.01.02 (011)
921	Cooke, Kerry	06.05 (016)
922	Knapp, Wynne	04.03 (017)
923	Granlund, Win	08.04 (010), 08.05.06 (005)
924	ID, State of	02.01 (024), 02.01 (030), 02.02 (002), 02.03 (012), 02.04 (020), 02.04 (030), 02.04 (040), 02.04 (043), 02.04 (044), 02.04 (045), 02.04 (046), 02.04 (047), 02.04 (048), 02.04 (049), 02.04 (050), 02.04 (051), 02.04 (052), 02.04 (053), 02.04 (054), 02.04 (061), 02.08 (037), 03.04 (003), 03.04.01 (007), 04.01 (001), 04.02 (001), 04.03 (021), 04.03 (039), 04.03 (054), 04.03 (061), 04.03.01 (007), 04.03.01 (014), 04.03.01 (028), 04.03.01 (031), 04.03.01 (032), 04.03.01 (033), 05.02 (006), 05.02 (010), 05.02 (011), 05.02 (012), 05.02 (013), 05.02 (014), 05.02 (015), 05.02 (018), 05.02 (019), 05.02 (020), 05.02 (021), 05.02 (022), 05.02 (023), 05.02 (024), 05.02 (025), 05.02 (026), 05.02 (027), 05.02 (028), 05.02 (029), 05.02 (030), 05.02 (031), 05.02 (032), 05.02 (033), 05.02 (034), 05.02 (035), 05.02 (036), 05.02 (037), 05.02 (038), 05.02 (041), 05.02 (047), 05.02 (048), 05.02 (049), 05.02 (050), 05.02 (052), 05.02 (055), 05.02 (056), 05.03 (001), 05.04 (008), 05.04 (011), 05.04 (013), 05.04 (022), 05.04 (026), 05.05 (017), 05.05.01 (001), 05.05.01 (002), 05.05.01 (003), 05.05.01 (004), 05.05.01 (006), 05.05.01 (007), 05.05.01 (008), 05.05.01 (009), 05.05.01 (010), 05.05.01 (011), 05.05.01 (012), 05.05.01 (013), 05.05.01 (014), 05.05.01 (016), 05.05.01 (022), 05.05.01 (023),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

**Comment
Document No.**

Name

Response Section Numbers

924

ID, State of

05.05.01 (024), 05.05.01 (025), 05.05.01 (037),
05.05.01 (041), 05.06 (004), 05.06 (005), 05.06 (007),
05.06 (008), 05.06 (012), 05.07 (001), 05.07 (002),
05.07 (003), 05.07 (006), 05.07 (007), 05.08 (001),
05.08 (002), 05.08 (008), 05.08.01 (001), 05.08.01 (002),
05.08.01 (010), 05.08.01 (019), 05.08.01 (020),
05.08.01 (027), 05.08.01 (029), 05.08.01 (031),
05.08.01 (032), 05.08.01 (040), 05.08.01 (042),
05.08.01 (048), 05.08.01 (051), 05.08.01 (052),
05.08.01 (055), 05.08.02 (002), 05.08.02 (004),
05.08.02 (006), 05.08.03 (001), 05.08.03 (013),
05.08.03 (014), 05.09 (001), 05.09 (008), 05.09 (016),
05.09 (017), 05.09 (019), 05.10 (001), 05.10 (003),
05.10 (017), 05.10 (025), 05.10 (026), 05.10 (039),
05.10 (040), 05.10 (043), 05.10 (045), 05.10 (047),
05.10 (050), 05.10 (051), 05.10 (052), 05.10 (063),
05.10.01 (001), 05.10.01 (002), 05.10.02 (001),
05.10.02 (002), 05.10.02 (004), 05.10.02 (009),
05.10.02 (013), 05.10.02 (017), 05.10.02 (024),
05.10.02 (025), 05.10.02 (027), 05.11.01 (004),
05.11.03 (005), 05.11.03 (006), 05.11.03 (010),
05.11.03 (016), 05.11.03 (019), 05.11.03 (021),
05.11.03 (023), 05.11.03 (027), 05.11.03 (028),
05.11.03 (030), 05.11.03 (032), 05.11.03 (033),
05.11.03.03 (001), 05.12 (006), 05.12 (014),
05.12 (016), 05.12.02 (001), 05.12.05 (002), 05.12.06 (001),
05.13.01 (004), 05.15 (011), 05.15 (013), 05.17 (001),
05.17 (002), 05.18.01 (009), 05.19 (005), 05.19 (009),
05.19 (017), 06.01 (014), 06.02 (009), 06.02 (022),
06.02 (028), 06.02 (030), 06.02 (031), 06.03 (004),
06.03 (005), 06.03 (006), 06.03.01 (002), 06.04 (011),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
924	ID, State of	06.06 (007), 06.06 (009), 06.08 (001), 06.09 (047), 07.01 (002), 07.01 (003), 07.01 (007), 07.01.02 (001), 07.01.02 (005), 07.01.02 (006), 07.01.03 (002), 07.01.04 (001), 07.02 (001), 07.02.01 (002), 07.02.01 (004), 07.02.01 (005), 07.02.02 (001), 07.02.02 (002), 07.02.04 (003), 07.02.04 (004), 07.04 (003), 07.04 (006), 07.04 (007), 08.05.05 (002), 08.05.05 (003), 08.05.05 (004), 08.05.05 (007), 08.05.05 (008), 08.05.05 (009), 08.05.05 (010), 08.05.06 (013), 08.05.09 (004), 08.05.10 (004), 08.05.10 (009), 08.05.10 (011), 08.05.11 (008), 08.06 (009), 08.06 (013)
925	Kirk, Amy	01.01.01.01 (022), 01.01.01.02 (006), 03.08 (023), 05.05.01 (016), 05.08.01 (014), 05.09 (001), 07 (001)
926	Noland, Jane	02.04 (056), 05.04 (006), 05.11.02 (006), 05.12 (001), 05.12.03 (002), 05.13.02 (005)
927	Hall, David	01.01.01.01 (005), 02.04 (017), 04.03 (001), 05.12 (001), 06.05 (012)
928	Lancaster, Colleen	01.02.03 (002), 03.05 (006), 06.02 (006), 06.05 (016), 06.06 (003), 07 (001)
929	Frazier, M.	01.01.01.02 (006), 02.08 (009), 03.03 (008), 03.04 (014), 04.03.01 (017)
930	Pritchett, Jane R.	01.01.01.02 (006), 02.01 (019), 02.08 (009), 03.04 (002), 03.07 (003), 05.05 (017), 05.05.01 (016), 05.12 (001), 05.12 (005), 05.12 (010), 05.12.06 (002), 05.12.07.01 (002), 06.05 (017), 06.05 (029), 07.01.04 (002)
931	Schmidt, Peter W.	02.01 (008), 04.04 (008), 05.09 (001), 06.07 (001), 08.04 (010), 08.04 (028)
932	Collins, Arthur L.	01.02.03 (002)
933	Egan, Joseph R.	03.04 (013), 05.10 (002), 05.10.02 (002), 05.19 (001), 05.19 (002)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
934	Witte, Beverly J.	02.07 (002), 03.08 (011), 08.03.01 (008), 08.04 (008),
934	Witte, Beverly J.	08.04 (009), 08.04 (014)
935	Kirkpatrick, B. J.	02.07 (002), 03.08 (011), 06.09 (013), 08.03.01 (008),
		08.04 (008), 08.04 (009), 08.04 (014)
936	Butler, Julie	03.08 (009), 04.03.01 (001), 04.04 (008), 04.05 (009),
		05.05.01 (015), 05.09 (008), 09.01 (004)
937	Sonnenberg, Mark	06.04 (001)
938	Egan, Joseph R.	02.01 (010), 05.10 (002), 05.10.02 (002), 05.12 (012),
		05.13.02 (002), 05.19 (001), 05.19 (002)
939	Crawford, A. C.	02.08 (032), 03.08 (002), 05.12 (013), 05.19 (005),
		05.19 (013), 06.02 (023), 06.03 (010), 06.08 (002),
		06.08 (008), 06.09 (026), 06.09 (027), 06.09 (050)
940	Wright, Catherine	05.08.01 (014), 07.01.02 (004)
941	Bradshaw, Ken	03.03 (008), 05.08.01 (014), 07.02.06 (005)
942	Patheal, Colen	05.12 (001)
943	Teitge, Thomas	01.01.01.02 (006), 03.05 (007)
944	Beeman, Janel	01.02.03 (002), 05.09 (002), 05.12 (001)
945	Martin, Marilyn	01.02.03 (002), 05.12 (001)
946	Siegel, Taggart	01.01.01.02 (006), 05.08.01 (014), 05.09 (002), 05.12 (001)
947	Gilden, Stacy	01.01.01.02 (006), 03.05.05 (010), 03.08 (010), 04.03 (026),
		05.08.01 (014), 05.12 (001), 06.09 (023), 06.09 (040),
		06.09 (041), 08.03.01 (001), 08.03.03 (002)
948	Mix, Mary A.	05.08.01 (014), 05.09 (005), 05.12 (001)
949	Smith, Matt	02.08 (002), 03.03 (008), 03.03 (012), 05.05.01 (016),
		05.08.01 (014), 05.08.01 (023)
950	Teasley, Marlese	01.01.01.02 (006), 03.07 (004), 05.19 (011), 06.05 (011)
951	Anthony, George	01.01.01.02 (025), 02.04 (005), 03.07 (004), 05.09 (002),
		06.06 (003), 08.01 (002)
952	Blades, Jonnie	01.01.01.02 (006), 05.12 (001), 05.19 (011)
953	Wills, Steve	03.07 (003), 05.08.01 (014)
954	Mills, John D.	01.01.01.01 (022), 05.05.01 (016), 05.08.01 (014)
955	Allen, Bruce	03.03 (008), 05.12 (001), 06.04.02 (001), 08.03.01 (005),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
955	Allen, Bruce	08.03.03 (003)
956	Barrows, Bill	01.01.01.01 (008), 01.02.03 (002), 03.03 (008), 03.04 (010), 03.05 (009), 03.08 (011), 05.05.01 (016), 07.04 (001), 08.03.01 (005)
957	Caccia, John	02.03 (019), 03.05 (007), 03.05 (008), 05.12 (001)
'958	Rogers, Kris	01.01.01.01 (022), 01.01.01.02 (006), 01.01.01.02 (028), 03.05 (007), 03.05 (008), 03.07 (004), 05.10.02 (016), 05.11.03 (020)
959	Gorham, Sara	05.08.01 (014), 05.11.03 (020), 05.12 (001)
960	Glaccum, Ellen	01.01.01.01 (022), 01.01.01.02 (006), 02.03 (014), 02.08 (052), 05.05.01 (016), 05.12 (001), 06.05 (011)
961	Steffens, Veronica	01.01.01.02 (006)
962	Patheal, Helen	01.01.01.02 (006)
963	Berentz, Bob	03.05 (008), 03.07 (003), 05.08.01 (006), 06.04 (001)
964	Fritzler, Loretta	01.02.03 (001), 03.05 (007), 03.08 (010), 05.08.01 (014), 05.11.03 (020), 07.01.01 (002)
965	Kipping, David	01.01.01.01 (022), 06.06 (003), 08.03.03 (002)
966	Keisel, Allison	01.01.01.01 (022), 03.05 (004), 05.05.01 (016)
967	Potter, Martha	01.02.03 (002)
968	Stewart, Mark	03.03 (008), 08.04 (001)
969	Anderson, Hilary	01.01.01.02 (006), 05.10.02 (016)
970	Lenkner, Charles	02 (001), 03.07 (004), 03.08 (013), 04.03.01 (017)
971	Stewart, Margaret M.	01.02.03 (002), 02.01 (023), 02.04 (023), 02.07 (004), 03.03 (008), 03.07 (003), 03.07 (004), 06.01 (002), 06.03 (002), 08.05.10 (006)
972	Potter, Roderick	02.07 (004), 03.03 (008), 03.07 (003), 03.08 (010), 04.01 (005), 04.03 (058), 05.08.01 (014), 06.07 (001)
973	Williams, Xenia	02.08 (002), 05.05 (015), 05.08.01 (014)
974	Walker, Amy	01.01.01.01 (022), 01.01.01.02 (006), 03.07 (004), 05.08.01 (014), 05.08.01 (044), 05.10.02 (007), 05.12.08 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
975	Watson, Kelley	01.01.01.01 (039), 01.01.01.02 (006), 01.02.01 (002),
975	Watson, Kelley	03.03 (008), 03.07 (003), 05.08.01 (014), 05.11.03 (020), 05.18.04 (002)
976	Stewart, Margaret M.	01.01.01.01 (022), 02.08 (020), 04.01 (001), 04.03 (005), 06.01 (002), 06.04.01 (001), 06.07 (001), 07.01.05 (002), 08.03.01 (003), 08.03.01 (005)
977	Lenker, John	03.05.05 (012)
978	Chisholm, Bill	01.01.01.01 (022), 01.01.01.01 (026), 01.01.01.02 (006), 01.02 (001), 01.02.01.01 (003), 02.04 (060), 02.08 (002), 03.03 (008), 03.05 (025), 03.07 (004), 04.03 (021), 04.04.01 (002), 04.05 (018), 05.04 (023), 05.05.01 (016), 05.12 (001), 05.18.01 (012), 06.05 (016), 06.07 (013), 07.01.03 (006), 07.04 (004)
979	Rickards, Peter	02.08 (001), 02.08 (002), 03.03 (002), 03.08 (006), 05.09 (001), 05.10 (009), 05.10 (057), 05.10.02 (008), 05.11.03 (014), 06.07 (001), 07.02.01 (003), 07.02.03 (001), 08.03.03 (001), 08.05.06 (005)
980	Chisholm, William K.	01.01.01.01 (022), 01.01.01.01 (026), 01.01.01.02 (006), 01.02 (001), 01.02.01.01 (003), 02.04 (060), 02.08 (002), 03.03 (008), 03.05 (025), 03.07 (004), 04.03 (021), 04.04.01 (002), 04.05 (018), 05.04 (023), 05.05.01 (016), 05.12 (001), 05.18.01 (012), 06.05 (016), 06.07 (013), 07.01.03 (006), 07.04 (004)
981	Blanchard, Tom	01.01.01.02 (006), 02.04 (060), 03.03 (002), 03.08 (017), 05.08.01 (014), 05.12 (001), 06.05 (016)
982	Scarborough, Leslie	01.01.01.02 (006), 05.08.01 (014)
983	Ulahwti	02.02 (003), 02.04 (002), 02.04 (060), 03.08 (010), 05.08.01 (024), 05.08.01 (025), 05.09 (008)
984	Gouley, Richard	01.01.01.02 (006), 05.04 (014), 05.08.01 (014), 05.18 (002), 05.18.04 (002)
985	Laverty, Denise	01.01.01.01 (022), 05.09 (001), 05.15 (014)
986	Diepenbrock, Kathleen	03.05 (008), 04.03 (001), 05.12 (001), 06.05 (002)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
987	Thomas, Tim	01.01.01.02 (006), 05.05.01 (016), 05.10.02 (016),
987	Thomas, Tim	05.15 (008)
988	Sherrerd, Bill	03.05 (007), 04.05 (018), 05.08.01 (014), 05.08.01 (030), 06.08 (003)
989	Meyer, Richard	01.01.01.01 (022), 02.08 (002), 03.03 (008), 04.03 (001)
990	Jaquet, Wendy	01.01.01.02 (006), 05.05 (015), 05.08.01 (014), 05.11.03 (024)
991	Strausbaugh, Cindy	01.01.01.02 (006), 01.02.01.02 (006), 03.08 (010), 04.03 (001), 05.18.04 (002)
992	Barrows, William F.	06.03 (002)
992	Cunningham, Don	06.03 (002)
992	Lockwood, Frank	06.03 (002)
992	Mead, David	06.03 (002)
992	Questions and Answers, Twin Falls, ID After	06.03 (002)
992	Stewart, Margaret M.	06.03 (002)
992	Stewart, Mark	06.03 (002)
993	Ball, Patricia	05.11.03 (014)
993	Gouley, Richard	05.11.03 (014)
993	King, Neil	05.11.03 (014)
993	Questions and Answers, Twin Falls, ID Eveni	05.11.03 (014)
993	Rickards, Peter	05.11.03 (014)
993	Stewart, Margaret M.	05.11.03 (014)
994	Glaccum, Ellen	01.01.01.01 (022), 02.03 (014), 02.08 (052), 05.05.01 (016), 05.12 (001), 06.01 (005), 06.05 (011)
995	Roth, Char	01.01.01.01 (022), 05.08.01 (014), 05.12 (001), 08.01 (002), 08.03.01 (001)
996	Barrows, William F.	01.01.01.02 (006), 01.02.01.02 (012), 01.02.03 (002), 03.04 (010), 03.05 (009), 03.08 (010), 03.08 (011), 05.05.01 (016), 06.09 (030)
997	Laverty, Denise	01.01.01.01 (022), 05.09 (001), 05.15 (014)
998	Hart, Marcia	01.01.01.01 (022), 01.01.01.02 (006), 05.11.03 (026), 05.12 (001), 05.19 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
999	Wells, Matthew	03.03 (008), 03.05 (008), 06.07 (011), 06.09 (013)
1000	Todd, Paul	01.01.01.01 (008), 03.08 (017), 05.09 (002), 07.04 (001)
1001	Slifer, Betty	01.01.01.02 (006), 03.03 (008)
1002	Cole, Christine N.	01.01.01.02 (006), 04.03 (001), 05.18.01 (002)
1003	Chandler, Asa	01.01.01.02 (006), 04.01 (001), 05.05.01 (016), 05.08.01 (014), 06.01 (002)
1004	Kimmich, Scott	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
1005	Borquist, Robert E.	08.03.05 (006), 08.04 (010), 08.05.06 (005)
1006	Deegan, Robert F.	01.02.01.02 (006), 02.08 (006), 03.04 (007), 04.03 (027), 06.03 (001), 08.03.04 (001), 08.04 (010)
1007	Baggett, Chrys	01.01.01.01 (004), 01.01.01.01 (022), 01.01.01.01 (029), 01.01.01.02 (008), 01.02 (001), 02.04 (042), 02.08 (039), 04.03 (036), 05.10.02 (002), 05.12 (015), 05.12.06 (002), 05.13.02 (006), 06.05 (002)
1008	Logan, John A.	04.03 (047), 05.08.01 (015), 05.18.01 (008), 05.18.01 (015), 07.01 (008), 07.01.02 (007), 07.01.03 (006)
1009	Lamotte, Christian	01.01.01.01 (005), 01.01.01.01 (022), 03.04 (010), 03.05 (009), 03.08 (011)
1011	McCabe, Amy	01.01.01.02 (011), 02.03 (007), 02.04 (021), 02.04 (041), 02.07 (007), 03.04 (008), 04.03 (041), 04.03.01 (001), 04.03.01 (002), 04.03.01 (006), 05.04 (027), 05.05 (024), 06.07 (015)
1012	Myers, Joy	01.01.01.01 (002), 01.01.01.02 (012), 01.01.02 (001), 01.02 (001), 01.02.03 (003), 02.01 (021), 02.04 (055), 03.04.01 (007), 03.07 (004), 04.03 (008), 04.04 (011), 05.03 (002), 05.09 (001), 05.09 (008), 05.10.02 (017), 05.12.06 (004), 05.12.08 (001), 06.05 (001), 06.06 (003), 06.07 (001), 06.07 (014), 07 (001), 08.03.01 (008), 08.03.03 (002), 08.05.06 (027)
1013	McGrath, James	01.01.01.01 (001), 02.08 (009)
1014	Stennet, Clint	01.01.01.01 (022), 01.02 (001), 03.03 (008), 03.07 (003),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1014	Stennet, Clint	05.05.01 (016), 05.08.01 (014), 05.18.04 (002), 08.01 (009)
1015	Heckler, Hilde	05.08.01 (014), 05.12 (001), 08.01 (005)
1016	Bybee, R. V.	01.01.01.02 (006), 04.03 (001), 05.08.01 (014), 05.12 (001)
1017	Wade, Marty	03.05 (029), 05.08.01 (014), 05.10.02 (002), 05.12 (001), 06.05 (002), 08.03.01 (013)
1018	Wade, Marty	03.05 (029), 05.08.01 (014), 05.10.02 (002), 05.12 (001), 06.05 (002), 08.03.01 (013)
1019	Shipley, Diana	01.01.01.01 (022), 01.01.01.02 (006), 03.07 (004), 03.08 (004), 03.08 (010), 06.05 (019), 07.04 (001)
1020	Shipley, Diana Y.	01.01.01.01 (022), 01.01.01.02 (006), 03.07 (004), 03.08 (004), 03.08 (010), 06.05 (019), 07.04 (001)
1021	Turner, Roger	01.01.01.01 (022), 02.01 (026), 02.03 (008), 02.03 (022), 02.04 (058), 02.06 (030), 03.03 (008), 03.05 (008), 03.07 (003), 04.03 (001), 06.05 (002), 08.03.03 (002)
1022	Jayne, Jerry	03.08 (007), 05.06 (003), 05.06 (012), 05.19 (003)
1023	Jayne, Gerald A.	05.06 (003), 05.06 (012), 05.19 (003)
1024	Turner, Roger	01.01.01.01 (022), 02.01 (026), 02.03 (008), 02.03 (022), 02.04 (001), 02.06 (030), 03.03 (008), 03.05 (008), 03.07 (004), 04.03 (001), 08.03.03 (002)
1025	Nickerson, Jack	05.05.01 (016), 05.11.03 (007), 05.11.03 (008), 08.01 (001)
1026	Kenney, Dick	01.02.03 (002), 02.07 (001), 03.05.05 (011), 06.05 (016)
1027	Beitel, George A.	01.02.03 (002)
1028	Beitel, George A.	01.02.03 (002)
1029	Ball, Lynn W.	05.06 (013)
1030	Ward, Sonne	06.04 (001)
1031	Rickards, Peter	01.01.01.01 (015), 01.01.01.01 (022), 01.02 (001), 02.01 (009), 03.08 (014), 03.08 (017), 05.08.01 (016), 05.11.03 (009), 05.11.03 (014), 05.11.03 (035), 06.03 (014), 06.05 (001), 06.07 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1032	Rickards, Peter	02.03.01 (002), 05.08.01 (014), 05.08.01 (016), 05.10 (044),
1032	Rickards, Peter	05.10 (046), 05.10.02 (008), 05.11.03 (009), 05.11.03 (011), 05.11.03 (020), 05.15 (015), 07.02.01 (003), 07.04 (004), 08.05.06 (005)
1033	Duplessis, Lee	02.08 (002), 03.08 (011), 04.03 (001), 05.10 (029), 05.10.02 (002), 05.10.02 (007), 05.13.01 (001)
1034	Duplessis, Lee	02.08 (002), 03.08 (011), 04.03 (001), 05.10 (029), 05.10.02 (002), 05.10.02 (007), 05.13.01 (001)
1034	McDaniels, Trimelda	02.08 (002), 03.08 (011), 04.03 (001), 05.10 (029), 05.10.02 (002), 05.10.02 (007), 05.13.01 (001)
1035	Brailsford, Beatrice	01.01.01.02 (006), 01.02.01.02 (002), 01.02.03 (002), 02.07 (008), 02.08 (002), 02.08 (008), 02.08 (020), 03.07 (003), 03.07 (004), 04.01 (001), 04.03 (005), 04.03.01 (001), 04.03.01 (012), 04.03.01 (019), 04.04.01 (007), 06.04.01 (001), 06.05 (016), 07.01.05 (002), 09.01 (004)
1036	Kaufmann, Theresa M.	01.02.03 (002), 04.01 (001), 04.03 (001), 06.01 (005), 06.05 (002), 06.05 (016), 06.07 (001), 06.09 (042)
1037	Kaufmann, Theresa M.	01.02.03 (002), 04.01 (001), 04.03 (001), 06.01 (005), 06.05 (002), 06.05 (016), 06.07 (001), 06.09 (042)
1038	Rice, Chuck	01.01.01.01 (002), 01.01.02 (001)
1039	Rice, Charles M.	01.01.01.01 (002), 01.01.02 (001)
1040	Tanner, John B.	02.06 (039)
1041	Caldwell, Lindsey	05.10.01 (008)
1042	Drewes, Kenneth N.	07.01.01 (001), 08.03.05 (006)
1043	Horan, John R.	01.01.01.01 (029), 01.02.03 (001), 01.02.03 (002), 06.07 (001)
1044	Hayball, Brett	01.01.01.02 (006), 01.01.01.02 (026), 02.03 (009), 02.04 (007), 02.04 (031), 02.04 (038), 02.04 (055), 02.08 (013), 02.08 (026), 03.07 (001), 03.07 (008), 04.03 (015), 04.03 (037), 04.03 (052), 05.02 (039), 05.02 (044), 05.03 (002), 05.03 (006), 05.03 (007),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1044	Hayball, Brett	05.05.01 (036), 05.08.01 (014), 05.09 (001), 05.10.02 (017), 05.11.02 (008), 05.12.06 (004), 05.15 (009), 05.18.04 (002), 05.19 (012), 06.05 (016), 06.07 (001), 07 (001), 08.03.01 (015), 08.03.03 (002), 08.03.03 (003), 08.04 (006)
1045	Hayball, Brett	01.01.01.02 (006), 01.01.01.02 (026), 02.03 (009), 02.04 (007), 02.04 (031), 02.04 (038), 02.04 (055), 02.08 (013), 02.08 (026), 03.07 (001), 03.07 (008), 04.03 (015), 04.03 (037), 04.03 (052), 05.02 (039), 05.02 (044), 05.03 (002), 05.03 (006), 05.03 (007), 05.05.01 (036), 05.08.01 (014), 05.09 (001), 05.10.02 (017), 05.11.02 (008), 05.12.06 (004), 05.15 (009), 05.18.04 (002), 05.19 (012), 06.05 (016), 06.07 (001), 07 (001), 08.03.01 (015), 08.03.03 (002), 08.03.03 (003), 08.04 (006)
1046	Craig, Senator Larry E.	01.02.01.02 (013), 06.04 (008), 06.09 (030)
1047	Schrade, Jeff	02.02 (005), 06.04 (008), 06.09 (030)
1048	Allen, Donald	01.01.01.01 (008), 03.05 (024), 03.08 (011), 04.05 (018), 05.09 (001), 05.18.04 (002), 06.05 (016), 06.06 (003)
1049	McDaniels, Trimelda C.	02.04 (011), 03.04.01 (002), 03.08 (011), 04.01 (001), 05.10.02 (002), 05.11.03 (001), 06.09 (008), 09.01 (004)
1050	Duplessis, Lee	02.04 (011), 03.04.01 (002), 03.08 (011), 04.01 (001), 05.10.02 (002), 05.11.03 (001), 06.09 (008), 09.01 (004)
1050	McDaniels, Trimelda C.	02.04 (011), 03.04.01 (002), 03.08 (011), 04.01 (001), 05.10.02 (002), 05.11.03 (001), 06.09 (008), 09.01 (004)
1051	Elle, Jean	01.01.01.01 (022), 03.08 (007), 03.08 (023), 07.04 (008)
1052	Elle, Jean	01.01.01.02 (006), 03.08 (007), 03.08 (023), 07.04 (008)
1053	Kempthorne, Dirk	03.01 (014), 06.06 (003), 07 (001)
1054	Kempthorne, Dirk	03.01 (014), 06.06 (003), 07 (001)
1055	Proksa, Margo	01.01.01.01 (005), 01.01.01.02 (006), 01.03 (001), 02.07 (001), 02.08 (002), 02.08 (020), 03.02 (002),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

<u>Comment Document No.</u>	<u>Name</u>	<u>Response Section Numbers</u>
1055	Proksa, Margo	03.04 (017), 03.07 (003), 03.08 (011), 03.08 (017), 04.03 (001), 05.08.01 (014), 05.09 (001), 05.10 (008), 05.12 (003), 05.16 (001), 06.07 (001), 06.09 (010), 06.09 (024), 08.03.01 (004)
1056	Proksa, Margo	01.01.01.01 (005), 01.01.01.02 (006), 01.03 (001), 02.07 (001), 02.08 (002), 02.08 (020), 03.02 (002), 03.04 (017), 03.07 (003), 03.08 (011), 03.08 (017), 04.03 (001), 05.08.01 (014), 05.09 (001), 05.10 (008), 05.12 (003), 05.16 (001), 06.07 (001), 06.09 (010), 06.09 (024), 07 (001), 08.03.01 (004)
1057	Wade, Mike	01.01.01.02 (006)
1058	Hensel, David	01.01.01.01 (022), 03.05 (007), 03.05 (027), 03.07 (004), 04.01 (001), 04.03 (006), 05.16 (001), 06.03 (013), 06.05 (001), 06.05 (002), 06.07 (001), 08.03.03 (002)
1059	Hensel, David	01.01.01.01 (022), 02.04 (028), 03.05 (007), 03.05 (027), 03.07 (004), 04.01 (001), 04.03 (058), 05.16 (001), 06.03 (013), 06.05 (001), 06.05 (002), 06.07 (001), 08.03.03 (002), 08.03.03 (003)
1060	Daly, Katherine R.	01.01.01.02 (006), 08.03.01 (001)
1061	Weeg, Steven	01.01.01.02 (006), 02.01 (029), 02.08 (051), 04.01 (001), 04.03 (021), 04.03 (038), 04.03 (051), 04.04.01 (001), 05.09 (001), 05.10.02 (002), 06.01 (002), 06.02 (015), 06.06 (003), 06.07 (001), 08.03.03 (002)
1062	Skinner, Robert	01.01.01.02 (006), 01.02.03 (002), 05.11.03 (038), 06.07 (001)
1063	Skinner, Robert L.	01.01.01.02 (006), 01.02.03 (002), 05.11.03 (038), 06.07 (001)
1064	Tate, Deborah	01.01.01.01 (022), 01.01.01.02 (028), 02.01 (026), 02.07 (012), 03.07 (003), 07.04 (001)
1065	Daly, Katherine R.	01.01.01.02 (006), 08.03.01 (001)
1066	Turner, Kaye	01.02.03 (002), 03.05 (008), 06.05 (002)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

1067	Turner, Kaye	01.02.03 (002), 03.05 (008), 06.05 (002)
1068	Dold, Ann	05.11.03 (014)
1068	Questions and Answers, Idaho Falls, ID Afte	05.11.03 (014)
1068	Rickards, Peter	05.11.03 (014)
1068	Ward, Sonne	05.11.03 (014)
1069	Bates, Albert	04.03 (004), 04.03 (012)
1070	McDaniels, Trimelda C.	09.01 (004)
1070	Nickerson, Jack	09.01 (004)
1070	Proksa, Margo	09.01 (004)
1070	Questions and Answers, Idaho Falls, ID. Eve	09.01 (004)
1070	Rickards, Peter	09.01 (004)
1076	Barber, Brad T.	09.01 (010)
1077	McDonald, Timothy	05.12.06 (002), 05.12.07.01 (002), 05.13.02 (006), 08.03.01 (013)
1080	Sanderson, Richard E.	01.02.01.01 (007), 02.01 (022), 03.04 (005), 03.04 (006), 03.04 (022), 03.05 (028), 03.07 (006), 03.07 (007), 03.08 (018), 04.03 (043), 04.03 (063), 04.03.02.01 (003), 04.04.01 (006), 04.05 (015), 04.05 (023), 05.02 (005), 05.02 (053), 05.03 (004), 05.04 (009), 05.04 (010), 05.04 (017), 05.06 (009), 05.08 (003), 05.08 (007), 05.08 (008), 05.08.01 (020), 05.08.01 (022), 05.08.01 (033), 05.08.01 (050), 05.08.03 (004), 05.09 (012), 05.10 (011), 05.10 (015), 05.10 (016), 05.10 (019), 05.10 (020), 05.10 (029), 05.10 (032), 05.10 (036), 05.10 (037), 05.10 (042), 05.10 (053), 05.10 (065), 05.10.01 (007), 05.10.02 (005), 05.10.02 (015), 05.11.01 (009), 05.11.01 (010), 05.11.01 (011), 05.11.01 (012), 05.11.03 (014), 05.11.03 (022), 05.11.03 (029), 05.11.03 (034), 05.11.03 (036), 05.12 (001), 05.12 (015), 05.12.07.01 (001), 05.16 (001), 05.17 (003), 05.17 (004), 05.18.01 (003), 05.18.01 (004), 05.18.01 (007), 05.18.01 (013), 05.18.01 (014), 05.18.05 (001),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1080	Sanderson, Richard E.	05.19 (005), 05.19 (018), 06.02 (025), 06.02 (036), 06.02 (037), 06.04 (012), 06.04 (013), 06.07 (001), 06.07 (008), 06.09 (052), 06.09 (053), 07.01.04 (003), 07.03 (001), 07.03 (002), 08.06 (014), 08.06 (018), 08.06 (019)
1081	Cogan, Lindy	01.02.03 (002)
1082	Koben, Marcia	01.01.01.02 (006)
1083	Rowe, Jennifer	01.01.01.01 (022)
1084	Stireman, James	05.19 (011)
1085	Record, Terry	01.01.01.01 (008), 01.01.01.01 (022)
1086	Harris, Lisa	01.01.01 (002), 08.01 (001)
1087	Sharpe, Roberta R.	01.01.01.01 (008), 01.02.03 (002), 03.04 (010), 03.05 (009)
1088	Moredock, Elizabeth	01.01.01.02 (011), 05.10.02 (008)
1089	Heft, Philip	03.07 (003)
1090	Roberts, Randy	01.01.01.02 (011), 02.06 (001), 06.09 (013)
1091	Knight, Carol	01.01.01.01 (008), 03.04 (010), 03.07 (004)
1092	Jones, Eleanor	08.04 (010), 08.04 (015)
1093	Connelly, Joan	05.12.06 (002), 08.01 (001), 08.03.01 (005)
1094	Van Every, Robert	01.01.01.02 (006)
1095	Harvey, Ian	01.01.01.02 (006), 05.01 (003)
1096	Watkins, Karen	01.01.01.02 (011), 05.10.02 (007)
1097	Finn, Ellen	08.04 (010)
1098	Bradley, Edith	03.05 (007), 05.16 (007)
1099	Green, Jody	08.01 (004), 08.04 (018), 08.05.06 (005)
1100	Flint, William	01.01.01.02 (006)
1101	Stone, Gary	05.08.01 (014), 05.19 (011)
1102	Holce, Leah	01.01.01.02 (006), 03.05 (002), 05.11.03 (012), 05.12 (001)
1103	Overman, Robert	04.01 (005), 06.04 (001), 06.05 (001), 06.06 (008), 06.07 (007), 07 (001)
1104	Michael, Frank	01.01.01.01 (022), 01.01.01.02 (011)
1105	Kerrigan, Laurie	01.01.01.02 (006), 04.03 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

1106	Saccoman, Joe	01.01.01.02 (006), 05.08.01 (014), 05.10 (006)
1107	Powers, Julian	02.06 (001), 06.09 (013)
1108	Glasseir, Rox	08.01 (004), 08.04 (013), 08.05.06 (030)
1109	Van Der Harst, John	01.02.03 (002)
1110	Palmer, Doug	08.04 (010), 08.04 (014)
1111	Saccoman, Bill	01.01.01.02 (006)
1111	Saccoman, Patty	01.01.01.02 (006)
1112	Little, Glen	06.05 (001)
1113	Shotwell, Evelyn	01.01.01.02 (006)
1114	Branter, Keith	01.02.03 (002)
1115	Hungerford, Clark	01.02.03 (002)
1116	Gyorke, Joseph	01.01.01.02 (011)
1119	Costner, Brian	01.01.01.01 (015), 02.01 (028), 02.04 (002), 02.04 (007), 02.04 (009), 02.04 (042), 03.04 (004), 04.01 (001), 04.01 (004), 04.03 (001), 06.09 (044)
1120	Sanderson, Richard E.	01.02.01.01 (007), 02.01 (022), 03.04 (005), 03.04 (006), 03.04 (022), 03.05 (028), 03.07 (006), 03.07 (007), 03.08 (018), 04.03 (043), 04.03 (063), 04.03.02.01 (003), 04.04.01 (006), 04.05 (015), 04.05 (023), 05.02 (005), 05.02 (053), 05.03 (004), 05.04 (009), 05.04 (010), 05.04 (017), 05.06 (009), 05.08 (003), 05.08 (007), 05.08 (008), 05.08.01 (020), 05.08.01 (022), 05.08.01 (033), 05.08.01 (050), 05.08.03 (004), 05.09 (012), 05.10 (011), 05.10 (015), 05.10 (016), 05.10 (019), 05.10 (020), 05.10 (029), 05.10 (032), 05.10 (036), 05.10 (037), 05.10 (042), 05.10 (053), 05.10 (065), 05.10.01 (007), 05.10.02 (005), 05.10.02 (015), 05.11.01 (009), 05.11.01 (010), 05.11.01 (011), 05.11.01 (012), 05.11.03 (014), 05.11.03 (022), 05.11.03 (029), 05.11.03 (034), 05.11.03 (036), 05.12 (001), 05.12 (015), 05.12.07.01 (001), 05.16 (001), 05.17 (003), 05.17 (004), 05.18.01 (003), 05.18.01 (004), 05.18.01 (007),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

1120	Sanderson, Richard E.	05.18.01 (013), 05.18.01 (014), 05.18.05 (001), 05.19 (005), 05.19 (018), 06.02 (025), 06.02 (036), 06.02 (037), 06.04 (012), 06.04 (013), 06.07 (001), 06.07 (008), 06.09 (052), 06.09 (053), 07.01.04 (003), 07.03 (001), 07.03 (002), 08.06 (014), 08.06 (018), 08.06 (019)
1122	Gauer, Madelon	05.08.01 (030), 06.05 (016)
1122	Gauer, Paul	05.08.01 (030), 06.05 (016)
1123	Horton, Lynn B.	08.04 (014)
1125	Knapp, Malcolm R.	09.01 (010)
1126	Sanderson, Richard E.	01.02.01.01 (007), 02.01 (022), 03.04 (005), 03.04 (006), 03.04 (022), 03.05 (028), 03.07 (006), 03.07 (007), 03.08 (018), 04.03 (043), 04.03 (063), 04.03.02.01 (003), 04.04.01 (006), 04.05 (015), 04.05 (023), 05.02 (005), 05.02 (053), 05.03 (004), 05.04 (009), 05.04 (010), 05.04 (017), 05.06 (009), 05.08 (003), 05.08 (007), 05.08 (008), 05.08.01 (020), 05.08.01 (022), 05.08.01 (033), 05.08.01 (050), 05.08.03 (004), 05.09 (012), 05.10 (011), 05.10 (015), 05.10 (016), 05.10 (019), 05.10 (020), 05.10 (029), 05.10 (032), 05.10 (036), 05.10 (037), 05.10 (042), 05.10 (053), 05.10 (065), 05.10.01 (007), 05.10.02 (005), 05.10.02 (015), 05.11.01 (009), 05.11.01 (010), 05.11.01 (011), 05.11.01 (012), 05.11.03 (014), 05.11.03 (022), 05.11.03 (029), 05.11.03 (034), 05.11.03 (036), 05.12 (001), 05.12 (015), 05.12.07.01 (001), 05.16 (001), 05.17 (003), 05.17 (004), 05.18.01 (003), 05.18.01 (004), 05.18.01 (007), 05.18.01 (013), 05.18.01 (014), 05.18.05 (001), 05.19 (005), 05.19 (018), 06.02 (025), 06.02 (036), 06.02 (037), 06.04 (012), 06.04 (013), 06.07 (001), 06.07 (008), 06.09 (052), 06.09 (053), 07.01.04 (003),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

1126	Sanderson, Richard E.	07.03 (001), 07.03 (002), 08.06 (014), 08.06 (018), 08.06 (019)
1128	McDonald, Tim	08.03.01 (013), 08.04 (010)
1129	Quinley, Vickie	05.08.01 (014)
1130	Sower, Bob W.	01.01.01.02 (006)
1131	Peterson, Samara	03.07 (004), 05.08.01 (030)
1132	Morgan, LaRene	01.01.01.02 (006), 01.01.02 (005)
1133	Arkoosh, Karen	01.01.01.02 (006), 05.08.01 (014), 05.10.02 (016)
1134	Fisse, Ron	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014)
1135	Buys, Barbara	08.05.05 (002)
1136	Wallbaum, Gary	01.01.01.02 (011), 05.18.01 (005), 06.04 (008), 06.09 (013)
1137	Shotwell, Cornelia	01.01.01.02 (006)
1138	Suhr, Debbie	01.01.01.02 (006)
1139	Hodge, Mary	01.01.01.02 (006)
1140	Apperson, Jerry	05.12 (001)
1141	Hill, Joy	05.18.04 (002), 08.01 (001)
1142	Wimberly, Jan	01.01.01.02 (006)
1143	Strong, Tye	01.01.01.02 (006), 04.03 (001), 04.05 (003)
1144	Bourner, Darrell	05.08.01 (014)
1145	Smiley, Jane	04.03 (001), 05.10.02 (016)
1146	Bates, Dorothy	01.01.01.01 (022), 05.12.08 (001)
1147	Lane, Lois	08.01 (001)
1148	King, Marilee	01.01.01.02 (006)
1149	Kleinklof, Karl	05.05.01 (016)
1150	Teusher, Meryle	01.01.01.02 (006)
1151	Moeller, Mary	01.01.01.02 (006)
1152	Mattulat, Judy	01.01.01.02 (006)
1153	Benson, Margaret	01.01.01.02 (006)
1154	Baldocchi, Dennis	01.01.01.01 (010), 01.01.01.02 (011)
1155	Casebeau, Max	03.05 (007), 03.05 (008), 04.01 (001), 04.01 (005), 05.08.01 (014), 05.11.03 (001), 05.12 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.

Name

Response Section Numbers

1156	Armstrong, Ted	02.08 (009), 05.08.01 (014), 05.08.01 (041)
1157	Tschirgi, Scott	05.08.01 (014)
1158	Baslee, Oradell	01.01.01.02 (006)
1159	Hastings, Virginia	01.01.01.02 (006)
1160	Day, Raymond	05.08.01 (014), 05.11.03 (020)
1161	Hulette, Christin	01.02.03 (002), 03.03 (008), 03.08 (013), 04.03 (001), 05.12 (001), 05.13.01 (002), 06.04 (004), 07.04 (001), 08.01 (002)
1162	Beem, Stacy	01.01.01.02 (006)
1163	Fowler, Halle	01.01.01.01 (022)
1164	Lanigan, Karen	01.01.01.01 (022), 01.02.01.02 (017)
1165	Bowman, Bill	05.08.01 (014)
1166	Quinn, Tim	08.01 (001)
1167	Heykamp, Elaine	08.01 (001)
1168	McLaughlin, Pam	03.04 (014)
1169	Unger, Richard	01.01.01.01 (015)
1170	Pannell, George	01.01.01.02 (011)
1171	Clements, Linda	05.08.01 (014)
1172	Pomeroy, Betsy	01.01.01.02 (006)
1172	Pomeroy, Nelson	01.01.01.02 (006)
1173	Salaegs, Peggy	01.01.01.02 (006)
1174	Russell, Donald	01.01.01.02 (011), 05.12.08 (001)
1175	Capalbo, Joseph	01.01.01.02 (006), 07 (001)
1176	Malone, Mrs. Paul	01.01.01.02 (006)
1176	Malone, Paul	01.01.01.02 (006)
1177	Breedlove, Debbie	01.01.01.02 (006)
1178	Fowler, Happy	01.01.01.02 (011)
1179	Warren, Jeffrey	02.08 (001)
1180	Alsdorf, Todd	01.01.02 (007), 01.02.03 (002)
1181	Edwards, Carol	01.01.01.02 (006), 05.02 (001), 05.08.01 (014)
1182	Boyle, Terry	08.04 (010), 08.04 (013), 08.04 (021)
1183	Erickson, Randee	05.12 (001), 05.13.04 (001), 05.16 (005), 08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1184	Belzer, Fred	01.01.01.01 (005), 01.01.01.01 (013), 01.02.03 (002),
1184	Belzer, Fred	02.04 (001), 03.05 (008), 04.01 (001), 04.03 (001), 04.03 (021), 06.07 (001), 06.09 (042)
1185	Bick, Susan	01.01.01.02 (006)
1186	Lehto, Kevin	05.12 (001)
1187	Bragg, William A.	01.01.01.01 (008)
1188	Randolph, Sperry	01.01.01.02 (011)
1189	Haaz, Nan	01.01.01.02 (011)
1190	Allen, Raymond	01.01.01.02 (011)
1191	Dixon, Marjorie	01.01.01.02 (006)
1192	Strawser, Mary	01.01.01.02 (006)
1193	Parrette, Joe	01.02.03 (002)
1194	Watson, Jackson L.	01.01.01.02 (006)
1195	Ricketts, W.	01.01.01.02 (011)
1196	Brooks, James	01.01.01.02 (011), 03.08 (010), 06.06 (003)
1197	Morley, Mary Kay	08.04 (010)
1198	Doersam, Eugene	01.01.01.02 (011)
1199	Snow, Dickey	01.01.01.02 (011)
1200	Gleaves, Richard	01.01.01.01 (015), 01.01.01.02 (011)
1201	Heindsmann, Sandra	01.01.01.01 (022), 02.04 (029), 03.05 (008), 05.04 (024)
1202	Watson, Carole	01.01.01.02 (006)
1203	Hoover, Elizabeth	01.01.01.02 (011)
1204	Runstein, Helen	08.05.06 (005), 08.05.06 (006)
1205	Gordon, Margaret	01.01.01.02 (011)
1206	McGehee, Connie	01.01.01.02 (011), 03.03 (008)
1207	Batey, Gary	01.01.01.02 (011)
1208	Billingsley, Adron	01.01.01.02 (011)
1209	Coop, Linda	01.01.01.02 (011)
1210	Dowd, Joyce	01.01.01.02 (011)
1211	Martin, Pauline	01.01.01.02 (011)
1212	Donaldson, Jeanne	01.02.03 (002)
1213	Wurster, Connie	06.09 (013), 08.01 (001)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1214	Wison, Hazel	01.01.01.02 (011)
1215	Csorgo, Alex	01.01.01.02 (011), 05.12 (001)
1216	Stout, Dean	01.01.01.02 (011)
1217	Denton, Marcia	01.01.01.02 (011)
1218	Stoknes, Kjell	01.02.02 (002), 07.04 (004)
1218	Stoknes, Marilyn	01.02.02 (002), 07.04 (004)
1219	Draper, Marge	01.01.01.02 (006)
1220	Jentry, Boyd	01.01.01.01 (022)
1221	Vance, Jesse	01.01.01.02 (011)
1222	Franden, Janet	01.02.03 (002)
1223	Bell, Willard	01.01.01.02 (011)
1224	McReynolds, Susan	01.01.01.02 (011)
1225	Rice, JoAnn	08.04 (013), 08.04 (014)
1226	Adams, Fern	01.01.01.02 (006), 01.01.01.02 (011), 05.12 (001)
1227	Jones, Jewel	01.01.01.02 (011)
1228	Fennema, Diane	01.01.01.02 (006)
1229	Vanderven, Peter	02.07 (012)
1230	Zajac, Nell	02.07 (012)
1231	Honicker, Jeannine	04.03 (005), 04.03.01 (001)
1232	Ewald, Linda	01.01.01.02 (011), 05.12 (001)
1233	Shortt, Timothy	05.10 (002)
1234	Matsu-Pissot, Yuki	09.01 (004)
1235	Mitchell, Don	01.01.01.02 (011)
1236	Scudder, Gary	01.01.01.02 (006)
1237	Fuller, Robert	01.01.01.02 (011)
1238	Brown, Norman C.	02.07 (012)
1239	Gruhl, Wade	01.01.01.02 (006), 03.05 (008), 03.08 (013), 05.12 (001)
1240	Picquet, Cheryn	05.18.04 (002)
1241	Campbell, Barbara	02.07 (012)
1242	Silverman, Larry	02.07 (012)
1243	Kinard, Deborah	09.01 (004)
1244	Kessler, Peter	02.07 (012)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1245	Gorenflo, Louise	03.03 (008), 05.12 (001), 05.18.04 (002)
1246	Beasley, Alton	02.01 (026), 02.04 (005), 06.05 (011), 09.01 (007)
1247	Wheeler, Paige	02.07 (012)
1248	Johnson, Elaine	01.02.03 (002)
1249	Johnson, Sally	01.01.01.01 (022)
1250	Fowler, Corinne	01.01.01.01 (015), 05.12 (001)
1251	Baumgarener, Charlotte	01.01.01.02 (006), 03.08 (024), 07 (001)
1252	Manning, Mary	08.04 (010), 08.04 (013)
1253	Wegman, Jerry	01.01.01.02 (002), 05.08 01 (014)
1254	Mendoza, Mary	02.07 (012)
1255	Zanover, Sally	08.04 (010)
1256	Lagenaur, Mary Beth	01.01.01.01 (022), 01.01.01.02 (006), 04.03 (001), 05.08.01 (014)
1257	Neumann, David	02.06 (036), 05.19 (001), 09.01 (004)
1258	Takahashi, Dana	08.01 (001)
1259	Pearson, Esther	01.01.01.02 (006)
1260	Lawson, Loretta	01.01.01.02 (006)
1261	McCann, Anita	01.01.02 (005)
1262	Frazier, Kathleen	01.01.01.02 (006)
1263	Coyle, Gaylord	01.01.01.02 (006)
1264	Tippett, Verna L.	01.01.01.02 (006), 05.08.01 (014)
1265	Hansen, Adeline	01.01.01.02 (006)
1266	Kincheloe, Karen	01.01.01.02 (006)
1267	Sieger, Karyn	01.01.01.02 (006), 05.12 (001)
1268	Parks, Steve	01.01.01.02 (006), 03.07 (003)
1269	Conger, Bill	01.01.01.02 (011)
1270	Duvall, Jami	05.12 (001), 08.01 (001)
1271	Stume, Betty Ann	01.02.01.02 (005)
1272	Velasco, Steve	05.12.04 (001)
1273	Davidson, Nancy	01.01.01.02 (011)
1274	Allen, Pat	01.01.01.01 (004), 08.03.02 (001), 08.04 (013), 08.05.06 (005), 08.05.06 (023), 08.05.07 (004)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1275	Lanigan, Steve	03.05 (007), 05.12 (001)
1276	Barney, Jody	01.01.01.02 (011)
1277	McDaniels, Trimelda	01.01.01.02 (006), 02.04 (019), 03.05 (008)
1278	MClemore, Janis	01.01.01.02 (020), 06.09 (013), 08.04 (010)
1279	Walton, Barbara A.	01.01.01.01 (022), 01.02.03 (002), 05.12.08 (001), 06.05 (016)
1280	Cox, Chris	03.07 (003), 06.09 (013)
1281	Ludders, Beverly	01.01.01.02 (006), 07.02.01 (003)
1282	Pearson, Ernest	01.01.01.02 (006)
1283	Toler, Stuart	03.05 (007), 05.09 (001)
1284	Holtz, Libby	02.08 (002), 04.03 (001), 05.08.01 (014), 08.01 (001)
1285	Sirhall, Emma L.	05.08.01 (014)
1286	Stoke, Jonathan	03.08 (011), 04.04 (008), 05.12.06 (002), 06.09 (013)
1287	Blood, Tina	01.01.02 (005)
1288	Langworthy, Helen	01.02.03 (002)
1289	McLaughlin, Pam	01.01.01.01 (008), 01.02.03 (002), 02.04 (060), 04.03 (001), 05.12 (001)
1290	Weatherley-White, Matthew	08.01 (001)
1291	Baldwin, June	01.01.01.02 (006)
1292	Hogan, Terry	01.01.01.02 (011)
1293	Swartzman, Margaret	01.01.01.02 (020), 05.08.03 (005), 08.04 (008), 08.06 (004)
1294	Sattgast, Leah W.	03.03 (008), 03.07 (004), 05.08.01 (014)
1295	Howard, Steven	01.01.01.02 (011)
1296	Smith, Eric	03.08 (009), 05.11.03 (039), 06.05 (016)
1297	Bowen, Randy L.	01.01.01.01 (015), 05.12 (001)
1298	Pannell, Deborah	01.01.01.02 (011)
1299	Blurton, Eleanor	01.01.01.02 (006), 01.02.03 (002)
1300	Blair, Joy	01.01.01.02 (011)
1301	Benjamin, Marvel	01.01.01.02 (006), 05.08.01 (014)
1302	Knecht, Dieter	02.08 (015), 08.01 (005)
1303	Sowdon, Doug	06.01 (011), 06.09 (013), 08.04 (010), 08.04 (014)
1304	Gatton, Leslie	03.08 (009), 03.08 (010)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1305	McAuley, Mike	01.01.01.02 (006)
1306	Tyler, Nancy	01.01.01.02 (006)
1307	Schimdt, Helena	01.01.01.02 (011), 05.08.01 (014)
1308	Scannella, Joe	01.01.01.02 (011)
1309	Bazin, Nancy	03.05 (008), 08.01 (001)
1310	Seperich, Yvonne	01.01.01.02 (011)
1311	Groll, Mary F.	01.01.01.02 (006)
1312	Dougherty, Al	01.01.01.02 (006)
1312	Dougherty, Jenive	01.01.01.02 (006)
1313	Day, Heather	05.11.02 (006), 06.09 (013)
1314	McLaughlin, Dennis	01.01.01.01 (022), 01.01.01.02 (013), 03.05 (008)
1315	Hudson, John	01.01.01.02 (011)
1316	Reed, David	01.01.01.02 (011), 04.03.01 (001), 05.08.02 (001)
1317	Lowe, Frances E.	01.01.01.02 (011)
1318	Akers, W. H.	01.02.03 (002)
1319	Flinn, James	09.01 (004)
1320	Crosslin, Leslie	01.01.01.01 (029), 03.07 (003), 06.05 (002)
1321	Tuck, Frank	01.01.01.02 (011)
1322	McNabb, Harry O.	01.01.01.02 (011)
1323	Rogers, Mary Grace	01.01.01.02 (011), 05.10.02 (016), 06.09 (013)
1324	Navarro, Pat	01.01.01.02 (011)
1325	Dempster, Michael	02.07 (012)
1326	Hughel, Dan	01.01.01.02 (014)
1327	Lieberman, Bernard	01.02.03 (002)
1328	Haskew, Mark	01.02.03 (002)
1329	Tumlin, Gary	01.01.01.02 (011), 05.18.04 (002)
1330	Burris, Mary S.	01.01.01.02 (011), 05.18.04 (002)
1331	Morris, Mary	03.07 (003), 05.10.02 (016), 05.18.04 (002)
1332	Phelps, Jim	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
1333	King, David	01.01.01.02 (011), 05.18.04 (002)
1334	Poche, Anthony F.	01.01.01.02 (011), 03.07 (003), 03.08 (010), 04.01 (005)
1335	Piquet, Margaret	01.01.01.02 (011)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1336	Buchanan, James	01.01.01.02 (011), 05.12 (001)
1337	Conner, Robert	01.01.01.02 (011), 03.08 (010)
1338	Miller, Dana	02.07 (001), 03.08 (010), 05.15 (005), 05.18.04 (002), 09.01 (008)
1339	Reed, Ron	02.08 (036), 06.07 (001)
1340	Bahl, Susan	08.04 (010)
1341	Switzer, Susan	01.01.01.01 (015), 03.05 (017), 03.05 (018), 04.01 (005)
1342	Burris, Betty	01.01.01.02 (006), 01.01.01.02 (011)
1343	Wesley, R. L.	01.01.01.02 (011)
1344	Davison, Dave	03.08 (011), 06.06 (003), 07.04 (001), 08.01 (001), 08.03.05 (002), 08.04 (010), 08.04 (014), 08.04 (020)
1344	Donnelly, Tom	03.08 (011), 06.06 (003), 07.04 (001), 08.01 (001), 08.03.05 (002), 08.04 (010), 08.04 (014), 08.04 (020)
1344	Manheimer, Elaine	03.08 (011), 06.06 (003), 07.04 (001), 08.01 (001), 08.03.05 (002), 08.04 (010), 08.04 (013), 08.04 (014)
1345	Shaver, Lale	08.04 (020)
1346	Ricketts, W.	09.01 (004)
1347	Knight, Joseph	01.01.01.02 (011)
1348	Butler, Claudia	01.01.01.02 (006)
1349	Dement, Geraldine B.	01.01.01.02 (011)
1350	Snow, Renee	01.01.01.02 (011)
1351	Bush, Janet	05.09 (001), 08.01 (001)
1352	Anonymous	03.08 (013)
1353	Gannes, Brenda	01.01.01.02 (011)
1354	Gannes, Randall	01.01.01.02 (011)
1355	Knight, Glendel	01.01.01.02 (006)
1356	Sanders, Pat	01.01.01.01 (008), 02.08 (009)
1357	Manning, Lillian	01.01.01.01 (022), 06.09 (019)
1358	Curtis, Carol	01.01.01.02 (006), 03.07 (003), 06.06 (003)
1359	Haight, Douglas	01.01.01.01 (022), 05.08.01 (014), 05.11.03 (024)
1360	Pardy, Pauline	01.01.01.02 (011)
1361	Falkner, Mark	01.01.01.02 (006), 05.08.01 (014)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1362	Dowd, Kathy	01.01.01.02 (011)
1363	Dement, Joe J.	01.01.01.02 (011)
1364	Briggs, Harrison	01.01.01.02 (011)
1364	Briggs, Mary Jane	01.01.01.02 (011)
1365	Cain, Edith J.	01.01.01.02 (006)
1366	Bateman, James	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
1366	Cain, Vanessa	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
1367	Ballard, Carolyn	01.01.01.01 (022), 05.12 (001), 05.18.04 (002)
1368	Myers, Brian	01.01.01.02 (011), 05.09 (001)
1369	Everson, Rickie	01.01.01.02 (011)
1370	Ewing, Mary Jane	05.12 (001)
1370	Ewing, Robert	05.12 (001)
1371	Duplessis, Lee	03.08 (022), 05.10 (031)
1372	Cavanaugh, Arlene	01.02.01.02 (006), 05.12 (001), 06.09 (013)
1373	Snell, Jim	01.02.03 (002), 05.19 (001), 06.03.01 (001), 06.04 (002)
1374	Parker, Ron A.	01.01.02 (005)
1375	Hamilton, Sally	01.01.02 (005)
1376	Price, Schunn	05.09 (001), 05.18.04 (002)
1377	Hall, Dale O.	01.01.01.02 (006)
1378	Jay, Richard	01.01.01.02 (006)
1379	Hagerman	01.01.01.02 (011), 01.02.03 (002), 03.05 (009)
1380	Black, Betty	01.01.01.01 (022), 01.01.01.02 (006), 07.04 (001)
1381	Tyler, William A.	01.01.01.02 (011)
1382	Carman, Barbara	01.01.01.02 (006)
1383	McGhee, Charles	01.01.01.02 (011)
1384	Dixon, Betty	01.01.01.02 (011)
1385	Golay, Judith	01.01.02 (005), 05.19 (011)
1386	Davidson, Fonny	01.01.02 (005)
1387	Brinton, Cora	05.09 (001), 06.09 (013), 08.01 (001), 08.03.01 (008)
1388	Powell, Marbeth	08.04 (010)
1389	Coates, Hazel	06.09 (013), 08.01 (001)
1390	Jessen, Neal	01.01.01.02 (006)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1391	Forrey, Gloria	01.01.01.02 (006)
1392	Holt, Jane	01.02.03 (002)
1393	McReynolds, Tom	01.01.01.02 (006), 01.01.02 (005)
1394	Woodland, Wade	01.01.01.02 (006), 01.01.02 (005)
1395	McGrath, Patty	01.01.01.02 (006), 05.08.01 (014), 07.02.01 (003)
1396	Spore, Suzanne	01.01.01.02 (011)
1397	McKnight, Virginia	01.01.01.02 (011)
1398	Wright, Creed	01.01.02 (005), 01.02.01.02 (001)
1399	Gibson, Bryce	01.01.01.02 (006)
1400	Hanson, Annette	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014), 06.06 (003)
1401	Boyles, Jean	01.01.01.01 (022), 05.09 (001)
1402	Johnson, Norma	06.09 (013), 08.04 (010), 08.05.05 (002)
1403	Martensen, Charles	01.01.01.02 (006)
1403	Martensen, Margaret	01.01.01.02 (006)
1404	Soderquist, Linda	01.02.03 (002)
1405	Carter, Christine	08.01 (001)
1406	Haduke, Forest	04.03.01 (017)
1407	Welborne, Sally	07.04 (001)
1408	Camero, Jane	05.09 (001), 05.12 (001), 07 (001)
1409	Vieten, Vincent	08.04 (010), 08.05.04 (007), 08.05.06 (005)
1410	Hart, Andrew	08.04 (010)
1411	Turchinets, Tildy	08.01 (001)
1412	Emery, Susan	01.02.01.02 (006), 03.05 (007), 06.04.01 (004), 08.04 (010), 08.04 (013), 08.05.04 (002)
1413	Sifnas, Martha	08.04 (010), 08.04 (013), 08.05.04 (002)
1414	Von Want, Bob	08.05.04 (003)
1415	Flanders, Allen	03.08 (011), 08.03.01 (005), 08.04 (010), 08.04 (021), 08.05.06 (005), 08.05.07 (009)
1416	Warner, Sharon	08.04 (010)
1417	Stevens, Ed	08.04 (010), 08.04 (018)
1419	Harper, John	08.01 (001), 08.05.06 (031)

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

Comment Document No.	Name	Response Section Numbers
1420	Kimball, Matthew	08.01 (004)
1421	Ruppe, Maryann	08.04 (021)
1422	Griffin, Susan B.	01.01.01.01 (022)
1423	Blake, Gary	02.07 (001), 02.08 (002), 03.05 (018)
1424	Eaves, Debbie	05.12 (001)
1425	Neumann, David	05.19 (001)
1426	Harris, Betty	01.01.01.02 (011)
1427	Gardner, Edwena	01.01.01.01 (002), 01.01.01.02 (011)
1428	Roberts, Lucy	01.01.01.02 (011)
1429	Gaddy, Claude N.	01.01.01.02 (011), 05.12 (001)
1430	Tenpenny, Ray	01.01.01.02 (011)
1431	Tenpenny, Peggy Sue	01.01.01.02 (011), 01.02.03 (002)
1432	Manning, Lillian	01.01.01.01 (022), 05.09 (001)
1433	Doyle, Patrick	01.01.01.02 (001), 01.01.01.02 (011), 05.08.01 (047), 05.12 (015), 05.18.04 (002)
1434	Vaughan, Edna R.	01.01.01.02 (011)
1435	Devine, Shirley	01.01.01.02 (011)
1436	Kalbus, Richard	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014)
1437	Hart, Ann	01.01.01.02 (011), 05.12 (001)
1438	Foster, Betty	01.01.01.02 (006), 01.01.02 (005), 05.08.01 (014)
1439	Clark, Patricia	01.01.01.01 (022), 01.01.01.02 (006), 04.03 (001), 05.12 (001)
1440	McCoy, Mildred	08.01 (001)
1441	Ernst, Carol	01.01.01.01 (022), 01.01.01.02 (011), 05.12 (001)
1442	White, C. E.	01.02.03 (002), 02.08 (002)
1444	Usrey, Elgan H.	01.01.01.01 (046), 01.01.01.02 (011), 01.01.01.02 (035), 02.03 (004), 02.04 (059), 04.03 (065), 05.05 (024), 05.08.01 (004), 05.08.03 (016), 05.09 (001), 05.09 (005), 05.09 (015), 05.09 (020), 05.10 (039), 05.10 (067), 05.10.02 (028), 05.11 (003), 05.11 (005), 05.11.03 (003), 05.12 (010), 05.15 (001)
1445	Harrison, John T.	02.01 (033), 08.03.01 (013), 08.03.01 (018), 08.03.01 (022),

COMMENT/RESPONSE DOCUMENT INDEX

By Comment Document Number

**Comment
Document No.**

Name

Response Section Numbers

1445

Harrison, John T.

08.03.03 (001), 08.04 (002), 08.04 (010), 08.04 (012),
08.05.02 (001), 08.05.02 (003), 08.05.02 (004),
08.05.03 (001), 08.05.04 (002), 08.05.06 (005),
08.05.06 (012), 08.05.06 (028)

APPENDIX C

Responses - Comment Contributor Correlation

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
01.01.01 (002)	241, 299, 563, 1086
01.01.01.01 (001)	1013
01.01.01.01 (002)	278, 680, 714, 825, 1012, 1038, 1039, 1427
01.01.01.01 (004)	269, 483, 538, 739, 763, 797, 802, 825, 830, 904, 1007,
01.01.01.01 (005)	515, 522, 523, 601, 612, 615, 616, 617, 618, 619, 620, 621, 625, 627, 679, 681, 683, 708, 709, 710, 711, 712, 713, 720, 722, 723, 733, 734, 735, 739, 746, 747, 748, 749, 750, 763, 780, 781, 782, 783, 784, 785, 786, 787, 788, 793, 796, 803, 812, 813, 814, 815, 816, 820, 821, 822, 831, 851, 853, 871, 927, 1004, 1009, 1055, 1056, 1184
01.01.01.01 (008)	26, 360, 464, 532, 751, 762, 956, 1000, 1048, 1085, 1087, 1091, 1187, 1289, 1356
01.01.01.01 (010)	1154
01.01.01.01 (013)	1184
01.01.01.01 (015)	219, 244, 301, 474, 497, 1031, 1119, 1169, 1200, 1250, 1297,
01.01.01.01 (019)	440, 443
01.01.01.01 (022)	223, 225, 231, 232, 247, 253, 270, 288, 307, 449, 480, 494, 495, 497, 574, 597, 612, 615, 616, 617, 618, 619, 620, 621, 625, 627, 679, 681, 682, 683, 688, 690, 692, 702, 708, 709, 710, 711, 712, 713, 720, 722, 723, 734, 735, 746, 747, 748, 749, 750, 751, 752, 780, 781, 782, 783, 785, 786, 787, 788, 790, 793, 796, 799, 812, 813, 814, 815, 816, 820, 821, 822, 825, 828, 829, 831, 833, 847, 851, 853, 860, 869, 871, 880, 882, 925, 954, 958, 960, 965, 966, 974, 976, 978, 980, 985, 989, 994, 995, 997, 998, 1004, 1007, 1009, 1014, 1019, 1020, 1021, 1024, 1031, 1051, 1058, 1059, 1064, 1083, 1085, 1104, 1146, 1163, 1164, 1201, 1220, 1249, 1256, 1279, 1314, 1332, 1357, 1359, 1366, 1367, 1380, 1401, 1422, 1432, 1439,
01.01.01.01 (026)	978, 980
01.01.01.01 (029)	186, 446, 455, 610, 739, 1007, 1043, 1320
01.01.01.01 (033)	763
01.01.01.01 (038)	772
01.01.01.01 (039)	975

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

01.01.01.01 (040)	868
01.01.01.01 (041)	253
01.01.01.01 (042)	303, 877
01.01.01.01 (043)	847
01.01.01.01 (045)	446
01.01.01.01 (046)	1444
01.01.01.02 (001)	1433
01.01.01.02 (002)	1253
01.01.01.02 (003)	294
01.01.01.02 (004)	221, 906
01.01.01.02 (005)	730
01.01.01.02 (006)	36, 56, 130, 137, 154, 213, 222, 261, 265, 288, 299, 361, 364, 366, 421, 434, 435, 436, 461, 462, 466, 469, 474, 476, 497, 531, 532, 534, 537, 544, 548, 560, 577, 579, 590, 597, 598, 601, 602, 604, 607, 677, 713, 717, 718, 731, 732, 737, 756, 768, 789, 798, 800, 801, 804, 805, 806, 807, 808, 811, 828, 829, 833, 836, 852, 860, 862, 866, 869, 872, 873, 879, 880, 882, 908, 909, 911, 925, 929, 930, 943, 946, 947, 950, 952, 958, 960, 961, 962, 969, 974, 975, 978, 980, 981, 982, 984, 987, 990, 991, 996, 998, 1001, 1002, 1003, 1016, 1019, 1020, 1035, 1044, 1045, 1052, 1055, 1056, 1057, 1060, 1061, 1062, 1063, 1065, 1082, 1094, 1095, 1100, 1102, 1105, 1106, 1111, 1113, 1130, 1132, 1133, 1134, 1137, 1138, 1139, 1142, 1143, 1148, 1150, 1151, 1152, 1153, 1158, 1159, 1162, 1172, 1173, 1175, 1176, 1177, 1181, 1185, 1191, 1192, 1194, 1202, 1219, 1226, 1228, 1236, 1239, 1251, 1256, 1259, 1260, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1277, 1281, 1282, 1291, 1299, 1301, 1305, 1306, 1311, 1312, 1342, 1348, 1355, 1358, 1361, 1365, 1377, 1378, 1380, 1382, 1390, 1391, 1393, 1394, 1395, 1399, 1400, 1403, 1436, 1438, 1439
01.01.01.02 (008)	458, 636, 637, 642, 1007
01.01.01.02 (010)	862
01.01.01.02 (011)	232, 439, 440, 443, 447, 449, 645, 646, 648, 649, 650, 652,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
01.01.01.02 (011)	653, 654, 655, 656, 658, 659, 660, 661, 665, 666, 667, 668, 671, 672, 673, 674, 676, 758, 759, 774, 876, 920, 1011, 1088, 1090, 1096, 1104, 1116, 1136, 1154, 1170, 1174, 1178, 1188, 1189, 1190, 1195, 1196, 1198, 1199, 1200, 1203, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1214, 1215, 1216, 1217, 1221, 1223, 1224, 1226, 1227, 1232, 1235, 1237, 1269, 1273, 1276, 1292, 1295, 1298, 1300, 1307, 1308, 1310, 1315, 1316, 1317, 1321, 1322, 1323, 1324, 1329, 1330, 1332, 1333, 1334, 1335, 1336, 1337, 1342, 1343, 1347, 1349, 1350, 1353, 1354, 1360, 1362, 1363, 1364, 1366, 1368, 1369, 1379, 1381, 1383, 1384, 1396, 1397, 1426, 1427, 1428, 1429, 1430, 1431, 1433, 1434, 1435, 1437, 1441, 1444
01.01.01.02 (012)	1012
01.01.01.02 (013)	1314
01.01.01.02 (014)	651, 1326
01.01.01.02 (020)	250, 1278, 1293
01.01.01.02 (024)	811
01.01.01.02 (025)	951
01.01.01.02 (026)	847, 1044, 1045
01.01.01.02 (028)	958, 1064
01.01.01.02 (033)	825
01.01.01.02 (035)	1444
01.01.02 (001)	714, 739, 762, 1012, 1038, 1039
01.01.02 (002)	230
01.01.02 (003)	847
01.01.02 (005)	49, 755, 1132, 1134, 1261, 1287, 1374, 1375, 1385, 1386, 1393, 1394, 1398, 1400, 1436, 1438
01.01.02 (006)	916
01.01.02 (007)	152, 278, 622, 675, 1180
01.01.03 (001)	724, 773, 875
01.02 (001)	272, 470, 471, 515, 742, 784, 803, 825, 862, 906, 916, 978,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

01.02 (001)	980, 1007, 1012, 1014, 1031
01.02.01 (002)	975
01.02.01 (003)	307
01.02.01 (005)	256, 315
01.02.01.01 (001)	825
01.02.01.01 (002)	804
01.02.01.01 (003)	978, 980
01.02.01.01 (005)	802
01.02.01.01 (006)	904
01.02.01.01 (007)	1080, 1120, 1126
01.02.01.02 (001)	36, 1398
01.02.01.02 (002)	907, 1035
01.02.01.02 (004)	797
01.02.01.02 (005)	1271
01.02.01.02 (006)	55, 151, 167, 327, 351, 354, 423, 637, 652, 729, 792, 905, 991, 1006, 1372, 1412
01.02.01.02 (008)	146
01.02.01.02 (011)	765
01.02.01.02 (012)	996
01.02.01.02 (013)	1046
01.02.01.02 (014)	640
01.02.01.02 (016)	463
01.02.01.02 (017)	532, 1164
01.02.01.02 (020)	771
01.02.02 (001)	483, 538
01.02.02 (002)	1218
01.02.02 (004)	560
01.02.02 (005)	610
01.02.02 (006)	610
01.02.03 (001)	964, 1043
01.02.03 (002)	36, 43, 207, 209, 212, 223, 230, 257, 258, 261, 263, 324,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

01.02.03 (002)	340, 347, 350, 354, 376, 437, 440, 443, 445, 454, 458, 464, 465, 468, 469, 476, 482, 610, 626, 639, 726, 733, 760, 768, 779, 792, 794, 797, 806, 817, 818, 819, 825, 837, 846, 874, 876, 907, 916, 928, 932, 944, 945, 956, 967, 971, 996, 1026, 1027, 1028, 1035, 1036, 1037, 1043, 1062, 1063, 1066, 1067, 1081, 1087, 1109, 1114, 1115, 1161, 1180, 1184, 1193, 1212, 1222, 1248, 1279, 1288, 1289, 1299, 1318, 1327, 1328, 1373, 1379, 1392, 1404, 1431, 1442
01.02.03 (003)	847, 1012
01.03 (001)	1055, 1056
01.03 (003)	610
02 (001)	907, 970
02.01 (002)	44, 546, 550, 849
02.01 (003)	473, 478, 539
02.01 (004)	515
02.01 (005)	515
02.01 (006)	238
02.01 (007)	225
02.01 (008)	844, 931
02.01 (009)	1031
02.01 (010)	938
02.01 (011)	515
02.01 (012)	707
02.01 (013)	849
02.01 (014)	823
02.01 (015)	610
02.01 (016)	610
02.01 (017)	832
02.01 (018)	744
02.01 (019)	930
02.01 (020)	825

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
02.01 (021)	1012
02.01 (022)	1080, 1120, 1126
02.01 (023)	270, 465, 971
02.01 (024)	877, 924
02.01 (025)	877
02.01 (026)	251, 263, 296, 497, 519, 632, 868, 902, 1021, 1024, 1064,
02.01 (027)	845
02.01 (028)	1119
02.01 (029)	1061
02.01 (030)	242, 483, 538, 596, 601, 602, 706, 707, 907, 924
02.01 (031)	432
02.01 (032)	348
02.01 (033)	1445
02.02 (001)	515
02.02 (002)	158, 446, 900, 924
02.02 (003)	595, 633, 902, 983
02.02 (005)	1047
02.03 (001)	16
02.03 (002)	728, 740, 769
02.03 (004)	483, 610, 847, 1444
02.03 (005)	269, 538
02.03 (006)	907
02.03 (007)	447, 610, 1011
02.03 (008)	1021, 1024
02.03 (009)	1044, 1045
02.03 (010)	178
02.03 (011)	44
02.03 (012)	924
02.03 (014)	251, 483, 538, 960, 994
02.03 (015)	251, 848
02.03 (017)	744
02.03 (018)	823
02.03 (019)	825, 957

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

<u>Response Section Numbers</u>	<u>Comment Document Number</u>
02.03 (020)	908
02.03 (022)	1021, 1024
02.03 (024)	269, 302, 515, 870
02.03 (025)	595, 610
02.03 (028)	721
02.03.01 (001)	453
02.03.01 (002)	1032
02.03.01 (003)	202
02.03.01 (004)	453
02.04 (001)	262, 465, 545, 806, 847, 908, 1024, 1184
02.04 (002)	296, 309, 351, 607, 983, 1119
02.04 (003)	610
02.04 (004)	291, 424, 431, 907
02.04 (005)	225, 951, 1246
02.04 (006)	745
02.04 (007)	483, 538, 847, 907, 1044, 1045, 1119
02.04 (009)	1119
02.04 (010)	264, 316, 344, 351, 719, 903
02.04 (011)	1049, 1050
02.04 (014)	483, 538
02.04 (017)	927
02.04 (019)	456, 805, 807, 808, 1277
02.04 (020)	924
02.04 (021)	447, 1011
02.04 (022)	453
02.04 (023)	971
02.04 (024)	896
02.04 (025)	718
02.04 (026)	610, 847
02.04 (027)	610
02.04 (028)	244, 1059
02.04 (029)	1201
02.04 (030)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
02.04 (031)	847, 1044, 1045
02.04 (032)	595, 610
02.04 (033)	870
02.04 (034)	633, 832
02.04 (036)	610
02.04 (037)	446, 847
02.04 (038)	847, 1044, 1045
02.04 (040)	924
02.04 (041)	447, 1011
02.04 (042)	631, 845, 1007, 1119
02.04 (043)	924
02.04 (044)	924
02.04 (045)	924
02.04 (046)	924
02.04 (047)	924
02.04 (048)	924
02.04 (049)	924
02.04 (050)	924
02.04 (051)	924
02.04 (052)	924
02.04 (053)	924
02.04 (054)	924
02.04 (055)	1012, 1044, 1045
02.04 (056)	926
02.04 (057)	847
02.04 (058)	1021
02.04 (059)	1444
02.04 (060)	244, 306, 364, 425, 483, 538, 610, 721, 978, 980, 981, 983,
02.04 (061)	924
02.04 (062)	456
02.05 (001)	595, 610
02.06 (001)	245, 260, 266, 270, 328, 384, 395, 741, 1090, 1107
02.06 (002)	908

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
02.06 (003)	294
02.06 (004)	315
02.06 (005)	907
02.06 (006)	827
02.06 (007)	351
02.06 (008)	908
02.06 (009)	432, 433
02.06 (010)	313
02.06 (016)	294
02.06 (021)	595, 707
02.06 (023)	630
02.06 (024)	595
02.06 (025)	134, 446
02.06 (027)	26, 230
02.06 (028)	428, 430
02.06 (030)	1021, 1024
02.06 (031)	906
02.06 (032)	62
02.06 (033)	903
02.06 (034)	847, 915
02.06 (035)	432, 433
02.06 (036)	1257
02.06 (037)	297, 305, 346
02.06 (039)	1040
02.06 (040)	847
02.07 (001)	208, 254, 295, 299, 319, 441, 456, 519, 530, 596, 601, 610, 874, 1026, 1055, 1056, 1338, 1423
02.07 (002)	4, 5, 6, 7, 8, 9, 10, 18, 19, 20, 23, 24, 25, 31, 32, 33, 57, 58, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 93, 94, 95, 96, 97, 98, 99, 100, 103, 104, 106, 107, 108, 109, 110, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 280, 281, 282, 283, 284, 285, 286, 934, 935

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
02.07 (004)	465, 971, 972
02.07 (005)	858
02.07 (006)	915
02.07 (007)	244, 447, 1011
02.07 (008)	1035
02.07 (012)	131, 176, 194, 295, 297, 298, 302, 304, 307, 308, 311, 312, 329, 348, 349, 358, 587, 662, 663, 1064, 1229, 1230, 1238, 1241, 1242, 1244, 1247, 1254, 1325
02.07 (013)	148
02.07 (014)	738
02.08 (001)	243, 326, 368, 392, 738, 741, 979, 1179
02.08 (002)	194, 212, 257, 270, 307, 311, 437, 483, 510, 525, 538, 553, 568, 602, 676, 731, 949, 973, 978, 979, 980, 989, 1033, 1034, 1035, 1055, 1056, 1284, 1423, 1442
02.08 (005)	602
02.08 (006)	167, 905, 1006
02.08 (007)	173
02.08 (008)	468, 1035
02.08 (009)	832, 929, 930, 1013, 1156, 1356
02.08 (010)	877
02.08 (011)	778
02.08 (012)	610
02.08 (013)	847, 1044, 1045
02.08 (015)	1302
02.08 (016)	631
02.08 (018)	908
02.08 (019)	629
02.08 (020)	251, 267, 469, 872, 976, 1035, 1055, 1056
02.08 (021)	847
02.08 (022)	830
02.08 (023)	153, 643
02.08 (024)	92
02.08 (025)	158, 446

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
02.08 (026)	1044, 1045
02.08 (027)	515
02.08 (029)	847
02.08 (030)	847
02.08 (032)	939
02.08 (033)	245
02.08 (034)	546, 550
02.08 (035)	721
02.08 (036)	1339
02.08 (037)	924
02.08 (039)	1007
02.08 (040)	610
02.08 (041)	193, 195
02.08 (042)	603, 644, 726
02.08 (045)	298
02.08 (046)	256
02.08 (047)	261
02.08 (051)	1061
02.08 (052)	244, 303, 960, 994
02.08 (054)	744
02.08 (056)	744
02.08 (057)	915
02.08 (058)	845
02.08 (059)	908
03.01 (001)	26, 61, 218, 230, 270, 313, 326, 401
03.01 (002)	483, 538
03.01 (003)	483, 538
03.01 (004)	531
03.01 (005)	610
03.01 (008)	270
03.01 (009)	184
03.01 (014)	1053, 1054
03.02 (001)	423

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
03.02 (002)	478, 543, 630, 1055, 1056
03.02 (003)	311
03.03 (002)	312, 432, 438, 605, 917, 979, 981
03.03 (005)	665
03.03 (008)	147, 202, 215, 222, 298, 305, 307, 315, 316, 363, 365, 407, 411, 415, 439, 470, 473, 475, 481, 510, 513, 539, 540, 544, 548, 602, 605, 611, 624, 636, 752, 764, 856, 929, 941, 949, 955, 956, 968, 971, 972, 975, 978, 980, 989, 999, 1001, 1014, 1021, 1024, 1161, 1206, 1245, 1294
03.03 (012)	949
03.03 (013)	210
03.04 (001)	877
03.04 (002)	930
03.04 (003)	924
03.04 (004)	1119
03.04 (005)	1080, 1120, 1126
03.04 (006)	1080, 1120, 1126
03.04 (007)	167, 905, 1006
03.04 (008)	49, 447, 870, 877, 1011
03.04 (009)	49
03.04 (010)	208, 612, 615, 616, 617, 618, 619, 620, 621, 625, 627, 679, 681, 683, 708, 709, 710, 711, 712, 713, 720, 722, 723, 734, 735, 746, 747, 748, 749, 750, 780, 781, 782, 783, 784, 785, 786, 787, 788, 793, 796, 803, 812, 813, 814, 815, 816, 820, 821, 822, 831, 851, 853, 871, 956, 996, 1004, 1009, 1087, 407, 595
03.04 (011)	407, 595
03.04 (012)	825
03.04 (013)	870, 933
03.04 (014)	299, 301, 929, 1168
03.04 (017)	1055, 1056
03.04 (018)	540, 595
03.04 (019)	610
03.04 (021)	292

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
03.04 (022)	1080, 1120, 1126
03.04.01 (001)	595
03.04.01 (002)	559, 589, 1049, 1050
03.04.01 (004)	872
03.04.01 (005)	193
03.04.01 (007)	483, 538, 924, 1012
03.05 (002)	896, 901, 1102
03.05 (003)	825
03.05 (004)	966
03.05 (005)	344
03.05 (006)	928
03.05 (007)	495, 607, 634, 649, 654, 726, 779, 827, 836, 859, 894, 903, 943, 957, 958, 964, 988, 1058, 1059, 1098, 1155, 1275, 1283, 1412
03.05 (008)	26, 55, 245, 258, 260, 265, 363, 365, 512, 559, 589, 630, 635, 640, 738, 742, 743, 797, 908, 918, 957, 958, 963, 986, 999, 1021, 1024, 1066, 1067, 1155, 1184, 1201, 1239, 1277, 1309, 1314
03.05 (009)	612, 615, 616, 617, 618, 619, 620, 621, 625, 627, 679, 681, 683, 708, 709, 710, 711, 712, 713, 720, 722, 723, 734, 735, 746, 747, 748, 749, 750, 780, 781, 782, 783, 784, 785, 786, 787, 788, 793, 796, 803, 812, 813, 814, 815, 816, 820, 821, 822, 831, 851, 853, 871, 956, 996, 1004, 1009, 1087, 1379
03.05 (017)	1341
03.05 (018)	310, 1341, 1423
03.05 (022)	600
03.05 (023)	126
03.05 (024)	252, 856, 1048
03.05 (025)	978, 980
03.05 (027)	1058, 1059
03.05 (028)	1080, 1120, 1126
03.05 (029)	1017, 1018
03.05.03 (003)	126, 589, 630

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
03.05.04 (002)	726
03.05.05 (001)	26
03.05.05 (002)	261
03.05.05 (003)	274, 290, 603, 729
03.05.05 (006)	874
03.05.05 (007)	428, 430
03.05.05 (010)	947
03.05.05 (011)	1026
03.05.05 (012)	977
03.06 (001)	261, 515
03.07 (001)	847, 1044, 1045
03.07 (002)	825
03.07 (003)	264, 303, 312, 468, 544, 548, 757, 824, 907, 908, 930, 953, 963, 971, 972, 975, 1014, 1021, 1035, 1055, 1056, 1064, 1089, 1268, 1280, 1320, 1331, 1334, 1358
03.07 (004)	448, 463, 465, 510, 517, 560, 731, 809, 836, 862, 907, 950, 951, 958, 970, 971, 974, 978, 980, 1012, 1019, 1020, 1024, 1035, 1058, 1059, 1091, 1131, 1294
03.07 (005)	847
03.07 (006)	1080, 1120, 1126
03.07 (007)	238, 1080, 1120, 1126
03.07 (008)	847, 1044, 1045
03.08 (001)	246, 262
03.08 (002)	847, 939
03.08 (003)	635
03.08 (004)	1019, 1020
03.08 (006)	979
03.08 (007)	223, 368, 719, 736, 1022, 1051, 1052
03.08 (008)	313
03.08 (009)	936, 1296, 1304
03.08 (010)	53, 131, 148, 198, 203, 215, 254, 289, 309, 402, 436, 437, 463, 517, 542, 544, 548, 754, 915, 916, 947, 964, 972, 983, 991, 996, 1019, 1020, 1196, 1304, 1334, 1337, 1338

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
03.08 (011)	4, 5, 6, 7, 8, 9, 10, 18, 19, 20, 23, 24, 25, 31, 32, 33, 57, 58, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73,
03.08 (011)	74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 93, 94, 95, 96, 97, 98, 99, 100, 103, 104, 106, 107, 108, 109, 110, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 146, 232, 258, 262, 280, 281, 282, 283, 284, 285, 286, 310, 344, 432, 438, 449, 450, 600, 612, 615, 616, 617, 618, 619, 620, 621, 625, 627, 679, 681, 683, 708, 709, 710, 711, 712, 713, 720, 722, 723, 728, 734, 735, 740, 746, 747, 748, 749, 750, 756, 758, 759, 760, 764, 769, 774, 780, 781, 782, 783, 784, 785, 786, 787, 788, 790, 793, 796, 803, 812, 813, 814, 815, 816, 820, 821, 822, 831, 851, 853, 871, 876, 918, 934, 935, 956, 996, 1004, 1009, 1033, 1034, 1048, 1049, 1050, 1055, 1056, 1286, 1344, 1415
03.08 (012)	232, 244, 270, 297, 314, 449, 519
03.08 (013)	317, 320, 321, 527, 547, 970, 1161, 1239, 1352
03.08 (014)	1031
03.08 (015)	44
03.08 (016)	206, 216
03.08 (017)	847, 981, 1000, 1031, 1055, 1056
03.08 (018)	1080, 1120, 1126
03.08 (019)	220
03.08 (020)	513, 602
03.08 (022)	1371
03.08 (023)	251, 828, 829, 833, 860, 880, 882, 925, 1051, 1052
03.08 (024)	1251
04.01 (001)	244, 453, 468, 519, 595, 631, 719, 737, 907, 924, 976, 1003, 1035, 1036, 1037, 1049, 1050, 1058, 1059, 1061, 1119, 1155, 425
04.01 (002)	425
04.01 (003)	225
04.01 (004)	1119
04.01 (005)	36, 146, 147, 158, 230, 331, 344, 348, 358, 428, 446, 474, 497, 519, 545, 626, 632, 640, 682, 719, 733, 743, 745, 777,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

04.01 (005)	869, 972, 1103, 1155, 1334, 1341
04.01 (008)	915
04.01 (009)	483
04.02 (001)	924
04.03 (001)	26, 158, 173, 190, 209, 213, 232, 242, 245, 247, 253, 260, 262, 263, 265, 266, 270, 305, 306, 310, 360, 361, 366, 408, 417, 420, 425, 432, 434, 446, 449, 464, 469, 474, 477, 497, 519, 541, 545, 553, 595, 606, 607, 624, 631, 632, 718, 721, 724, 742, 752, 774, 795, 797, 809, 823, 858, 896, 900, 902, 916, 919, 927, 986, 989, 991, 1002, 1016, 1021, 1024, 1033, 1034, 1036, 1037, 1055, 1056, 1105, 1119, 1143, 1145, 1161, 1184, 1256, 1284, 1289, 1439
04.03 (002)	847
04.03 (003)	158, 446
04.03 (004)	1069
04.03 (005)	80, 301, 349, 354, 355, 468, 589, 823, 847, 907, 976, 1035,
04.03 (006)	538, 1058
04.03 (008)	1012
04.03 (009)	847
04.03 (010)	682
04.03 (012)	1069
04.03 (015)	847, 1044, 1045
04.03 (016)	906
04.03 (017)	922
04.03 (018)	239
04.03 (019)	188
04.03 (020)	906
04.03 (021)	245, 448, 733, 847, 924, 978, 980, 1061, 1184
04.03 (026)	947
04.03 (027)	167, 238, 291, 300, 314, 424, 832, 905, 1006
04.03 (031)	252, 589

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
04.03 (032)	186, 455
04.03 (033)	36
04.03 (036)	1007
04.03 (037)	1044, 1045
04.03 (038)	1061
04.03 (039)	924
04.03 (040)	519
04.03 (041)	447, 1011
04.03 (042)	471
04.03 (043)	1080, 1120, 1126
04.03 (045)	847
04.03 (047)	425, 1008
04.03 (048)	497
04.03 (049)	903, 908
04.03 (051)	1061
04.03 (052)	1044, 1045
04.03 (053)	832
04.03 (054)	924
04.03 (055)	302
04.03 (056)	832
04.03 (057)	153, 643, 832
04.03 (058)	972, 1059
04.03 (061)	483, 538, 924
04.03 (063)	1080, 1120, 1126
04.03 (064)	301
04.03 (065)	1444
04.03.01 (001)	157, 447, 936, 1011, 1035, 1231, 1316
04.03.01 (002)	447, 682, 907, 1011
04.03.01 (003)	453
04.03.01 (005)	158, 446, 515
04.03.01 (006)	447, 1011
04.03.01 (007)	515, 847, 924
04.03.01 (009)	847

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
--------------------------	-------------------------

04.03.01 (010)	847
04.03.01 (012)	737, 907, 1035
04.03.01 (014)	595, 847, 924
04.03.01 (017)	513, 597, 602, 605, 606, 637, 916, 929, 970, 1406
04.03.01 (019)	137, 240, 263, 907, 1035
04.03.01 (020)	847
04.03.01 (021)	715
04.03.01 (023)	631
04.03.01 (025)	847
04.03.01 (028)	924
04.03.01 (031)	924
04.03.01 (032)	924
04.03.01 (033)	924
04.03.02 (003)	847
04.03.02 (004)	847
04.03.02 (006)	452
04.03.02 (007)	847
04.03.02.01 (001)	158, 446
04.03.02.01 (002)	845
04.03.02.01 (003)	1080, 1120, 1126
04.03.02.01 (004)	870
04.04 (001)	823, 902
04.04 (008)	188, 269, 329, 355, 844, 931, 936, 1286
04.04 (010)	744
04.04 (011)	1012
04.04 (017)	251
04.04.01 (001)	1061
04.04.01 (002)	188, 978, 980
04.04.01 (005)	858
04.04.01 (006)	1080, 1120, 1126
04.04.01 (007)	1035
04.05 (001)	3, 631
04.05 (002)	847

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

<u>Response Section Numbers</u>	<u>Comment Document Number</u>
04.05 (003)	1143
04.05 (004)	730
04.05 (007)	223
04.05 (009)	936
04.05 (010)	847
04.05 (011)	634
04.05 (012)	858
04.05 (013)	792
04.05 (014)	602
04.05 (015)	1080, 1120, 1126
04.05 (016)	762
04.05 (018)	55, 916, 978, 980, 988, 1048
04.05 (019)	452
04.05 (020)	733
04.05 (021)	388
04.05 (022)	610
04.05 (023)	1080, 1120, 1126
05.01 (001)	847
05.01 (002)	847
05.01 (003)	713, 1095
05.02 (001)	1181
05.02 (003)	838
05.02 (004)	133
05.02 (005)	1080, 1120, 1126
05.02 (006)	924
05.02 (007)	744
05.02 (008)	744
05.02 (009)	847
05.02 (010)	924
05.02 (011)	924
05.02 (012)	924
05.02 (013)	924
05.02 (014)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.02 (015)	924
05.02 (016)	744
05.02 (018)	924
05.02 (019)	924
05.02 (020)	924
05.02 (021)	924
05.02 (022)	924
05.02 (023)	924
05.02 (024)	924
05.02 (025)	924
05.02 (026)	924
05.02 (027)	924
05.02 (028)	924
05.02 (029)	924
05.02 (030)	924
05.02 (031)	924
05.02 (032)	924
05.02 (033)	924
05.02 (034)	924
05.02 (035)	924
05.02 (036)	924
05.02 (037)	924
05.02 (038)	924
05.02 (039)	847, 1044, 1045
05.02 (040)	847
05.02 (041)	924
05.02 (043)	744
05.02 (044)	847, 1044, 1045
05.02 (047)	924
05.02 (048)	924
05.02 (049)	924
05.02 (050)	924
05.02 (051)	847

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.02 (052)	924
05.02 (053)	1080, 1120, 1126
05.02 (054)	610
05.02 (055)	924
05.02 (056)	924
05.03 (001)	857, 924
05.03 (002)	847, 1012, 1044, 1045
05.03 (003)	847
05.03 (004)	1080, 1120, 1126
05.03 (005)	847
05.03 (006)	847, 1044, 1045
05.03 (007)	847, 1044, 1045
05.04 (002)	607
05.04 (004)	560
05.04 (005)	603
05.04 (006)	926
05.04 (007)	847
05.04 (008)	924
05.04 (009)	1080, 1120, 1126
05.04 (010)	1080, 1120, 1126
05.04 (011)	924
05.04 (013)	924
05.04 (014)	984
05.04 (015)	515
05.04 (016)	738
05.04 (017)	1080, 1120, 1126
05.04 (018)	515
05.04 (019)	518
05.04 (020)	292, 602
05.04 (021)	602
05.04 (022)	924
05.04 (023)	978, 980
05.04 (024)	1201

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.04 (026)	924
05.04 (027)	447, 1011
05.05 (011)	515
05.05 (012)	599
05.05 (013)	515
05.05 (014)	477, 541
05.05 (015)	477, 511, 541, 973, 990
05.05 (017)	421, 435, 436, 437, 467, 478, 543, 768, 779, 811, 862, 924,
05.05 (024)	447, 515, 1011, 1444
05.05 (026)	536, 600
05.05 (028)	515
05.05.01 (001)	610, 745, 896, 924
05.05.01 (002)	924
05.05.01 (003)	924
05.05.01 (004)	924
05.05.01 (005)	858
05.05.01 (006)	924
05.05.01 (007)	924
05.05.01 (008)	924
05.05.01 (009)	924
05.05.01 (010)	924
05.05.01 (011)	924
05.05.01 (012)	924
05.05.01 (013)	924
05.05.01 (014)	924
05.05.01 (015)	936
05.05.01 (016)	437, 510, 532, 597, 609, 610, 768, 770, 804, 811, 819, 828, 829, 833, 834, 860, 879, 880, 882, 908, 912, 913, 924, 925, 930, 949, 954, 956, 960, 966, 978, 980, 987, 994, 996, 1003, 1014, 1025, 1149
05.05.01 (017)	483, 538
05.05.01 (018)	599, 609
05.05.01 (019)	610

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.05.01 (020)	707
05.05.01 (022)	924
05.05.01 (023)	924
05.05.01 (024)	924
05.05.01 (025)	924
05.05.01 (034)	477, 541, 610
05.05.01 (035)	599, 609
05.05.01 (036)	1044, 1045
05.05.01 (037)	924
05.05.01 (039)	599, 609
05.05.01 (040)	610
05.05.01 (041)	924
05.06 (001)	515
05.06 (002)	515
05.06 (003)	1022, 1023
05.06 (004)	924
05.06 (005)	924
05.06 (006)	847
05.06 (007)	847, 924
05.06 (008)	924
05.06 (009)	1080, 1120, 1126
05.06 (010)	847
05.06 (011)	847
05.06 (012)	847, 924, 1022, 1023
05.06 (013)	1029
05.07 (001)	924
05.07 (002)	924
05.07 (003)	924
05.07 (006)	924
05.07 (007)	924
05.08 (001)	924
05.08 (002)	924
05.08 (003)	1080, 1120, 1126

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.08 (006)	515
05.08 (007)	1080, 1120, 1126
05.08 (008)	610, 924, 1080, 1120, 1126
05.08.01 (001)	924
05.08.01 (002)	603, 924
05.08.01 (003)	515
05.08.01 (004)	446, 515, 1444
05.08.01 (005)	515
05.08.01 (006)	963
05.08.01 (008)	515
05.08.01 (009)	515
05.08.01 (010)	924
05.08.01 (012)	515
05.08.01 (014)	49, 56, 130, 213, 233, 243, 434, 469, 477, 479, 483, 510, 511, 533, 538, 541, 547, 556, 559, 560, 598, 607, 609, 677, 706, 718, 745, 752, 756, 770, 789, 804, 811, 819, 827, 828, 829, 833, 836, 837, 847, 856, 860, 862, 872, 879, 880, 882, 912, 925, 940, 941, 946, 947, 948, 949, 953, 954, 959, 964, 972, 973, 974, 975, 981, 982, 984, 988, 990, 995, 1003, 1014, 1015, 1016, 1017, 1018, 1032, 1044, 1045, 1055, 1056, 1101, 1106, 1129, 1133, 1134, 1144, 1155, 1156, 1157, 1160, 1165, 1171, 1181, 1253, 1256, 1264, 1284, 1285, 1294, 1301, 1307, 1359, 1361, 1395, 1400, 1436, 1438
05.08.01 (015)	1008
05.08.01 (016)	1031, 1032
05.08.01 (019)	924
05.08.01 (020)	924, 1080, 1120, 1126
05.08.01 (021)	595, 610
05.08.01 (022)	1080, 1120, 1126
05.08.01 (023)	510, 949
05.08.01 (024)	847, 983
05.08.01 (025)	230, 847, 983
05.08.01 (027)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.08.01 (029)	924
05.08.01 (030)	560, 988, 1122, 1131
05.08.01 (031)	924
05.08.01 (032)	924
05.08.01 (033)	1080, 1120, 1126
05.08.01 (035)	515
05.08.01 (037)	515
05.08.01 (039)	847
05.08.01 (040)	924
05.08.01 (041)	610, 1156
05.08.01 (042)	924
05.08.01 (044)	974
05.08.01 (047)	1433
05.08.01 (048)	924
05.08.01 (049)	825
05.08.01 (050)	1080, 1120, 1126
05.08.01 (051)	924
05.08.01 (052)	924
05.08.01 (053)	610
05.08.01 (054)	133
05.08.01 (055)	924
05.08.01 (056)	515
05.08.02 (001)	439, 1316
05.08.02 (002)	924
05.08.02 (003)	858
05.08.02 (004)	924
05.08.02 (005)	456, 517
05.08.02 (006)	924
05.08.02 (007)	602
05.08.02 (009)	824
05.08.02 (010)	304
05.08.02 (012)	877
05.08.03 (001)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.08.03 (003)	252
05.08.03 (004)	1080, 1120, 1126
05.08.03 (005)	1293
05.08.03 (006)	825
05.08.03 (007)	847
05.08.03 (009)	610
05.08.03 (013)	924
05.08.03 (014)	924
05.08.03 (015)	847
05.08.03 (016)	1444
05.09 (001)	251, 264, 299, 306, 349, 533, 542, 556, 561, 597, 601, 805, 806, 807, 808, 828, 829, 833, 844, 847, 860, 880, 882, 924, 925, 931, 979, 985, 997, 1012, 1044, 1045, 1048, 1055, 1056, 1061, 1283, 1351, 1368, 1376, 1387, 1401, 1408, 1432, 270, 600, 764, 944, 946, 951, 1000
05.09 (002)	270, 600, 764, 944, 946, 951, 1000
05.09 (003)	265, 836
05.09 (004)	233
05.09 (005)	948, 1444
05.09 (006)	847
05.09 (007)	730
05.09 (008)	595, 597, 610, 924, 936, 983, 1012
05.09 (009)	600
05.09 (010)	605
05.09 (011)	610
05.09 (012)	1080, 1120, 1126
05.09 (013)	602
05.09 (014)	303
05.09 (015)	825, 1444
05.09 (016)	924
05.09 (017)	924
05.09 (018)	294
05.09 (019)	924
05.09 (020)	1444

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

05.10 (001)	924
05.10 (002)	626, 792, 933, 938, 1233
05.10 (003)	924
05.10 (004)	847
05.10 (006)	422, 458, 473, 539, 752, 756, 881, 1106
05.10 (008)	737, 1055, 1056
05.10 (009)	979
05.10 (010)	385
05.10 (011)	1080, 1120, 1126
05.10 (012)	597, 602
05.10 (013)	28
05.10 (014)	469, 482
05.10 (015)	1080, 1120, 1126
05.10 (016)	470, 1080, 1120, 1126
05.10 (017)	924
05.10 (018)	877
05.10 (019)	1080, 1120, 1126
05.10 (020)	1080, 1120, 1126
05.10 (021)	182, 265, 270, 385, 432, 433, 597
05.10 (022)	302, 478, 543
05.10 (023)	264
05.10 (025)	847, 924
05.10 (026)	924
05.10 (027)	153, 643
05.10 (029)	175, 269, 543, 847, 1033, 1034, 1080, 1120, 1126
05.10 (030)	516
05.10 (031)	542, 1371
05.10 (032)	1080, 1120, 1126
05.10 (033)	825
05.10 (034)	440, 443
05.10 (035)	744
05.10 (036)	1080, 1120, 1126
05.10 (037)	1080, 1120, 1126

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.10 (038)	744
05.10 (039)	924, 1444
05.10 (040)	924
05.10 (041)	744
05.10 (042)	1080, 1120, 1126
05.10 (043)	924
05.10 (044)	1032
05.10 (045)	924
05.10 (046)	1032
05.10 (047)	924
05.10 (048)	433
05.10 (049)	838
05.10 (050)	924
05.10 (051)	924
05.10 (052)	924
05.10 (053)	1080, 1120, 1126
05.10 (054)	603
05.10 (055)	270
05.10 (056)	832
05.10 (057)	979
05.10 (058)	244
05.10 (059)	603
05.10 (061)	673
05.10 (063)	744, 849, 924
05.10 (064)	610
05.10 (065)	1080, 1120, 1126
05.10 (066)	292
05.10 (067)	1444
05.10.01 (001)	924
05.10.01 (002)	924
05.10.01 (003)	429
05.10.01 (004)	192, 269, 277
05.10.01 (005)	299, 349

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.10.01 (006)	432
05.10.01 (007)	1080, 1120, 1126
05.10.01 (008)	1041
05.10.01 (009)	425, 497, 538, 595, 610
05.10.01 (028)	453
05.10.01 (029)	825
05.10.01 (030)	835
05.10.01(031)	146
05.10.02 (001)	924
05.10.02 (002)	259, 269, 483, 538, 744, 823, 847, 924, 933, 938, 1007, 1017, 1018, 1033, 1034, 1049, 1050, 1061
05.10.02 (003)	301, 349, 542, 744
05.10.02 (004)	924
05.10.02 (005)	1080, 1120, 1126
05.10.02 (006)	137, 563
05.10.02 (007)	306, 315, 517, 650, 658, 684, 706, 862, 903, 974, 1033, 1034, 1096
05.10.02 (008)	979, 1032, 1088
05.10.02 (009)	924
05.10.02 (010)	881
05.10.02 (011)	553
05.10.02 (012)	744
05.10.02 (013)	924
05.10.02 (014)	825
05.10.02 (015)	1080, 1120, 1126
05.10.02 (016)	137, 239, 257, 258, 262, 269, 292, 310, 364, 408, 417, 463, 483, 537, 538, 597, 654, 657, 858, 907, 958, 969, 987, 1133, 1145, 1323, 1331
05.10.02 (017)	170, 191, 199, 214, 269, 302, 331, 407, 483, 538, 543, 924, 1012, 1044, 1045
05.10.02 (018)	225
05.10.02 (019)	191, 214
05.10.02 (020)	825, 868

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.10.02 (021)	778
05.10.02 (022)	259
05.10.02 (023)	218
05.10.02 (024)	924
05.10.02 (025)	924
05.10.02 (026)	707
05.10.02 (027)	924
05.10.02 (028)	1444
05.11 (001)	292
05.11 (002)	337
05.11 (003)	1444
05.11 (005)	1444
05.11.01 (001)	602
05.11.01 (002)	193, 195
05.11.01 (004)	924
05.11.01 (005)	523
05.11.01 (006)	28
05.11.01 (007)	855, 897
05.11.01 (008)	232, 244, 449
05.11.01 (009)	1080, 1120, 1126
05.11.01 (010)	1080, 1120, 1126
05.11.01 (011)	1080, 1120, 1126
05.11.01 (012)	1080, 1120, 1126
05.11.02 (001)	246, 262, 264, 272
05.11.02 (005)	515
05.11.02 (006)	140, 246, 299, 301, 307, 926, 1313
05.11.02 (007)	301
05.11.02 (008)	847, 1044, 1045
05.11.03 (001)	407, 595, 1049, 1050, 1155
05.11.03 (003)	28, 223, 225, 270, 1444
05.11.03 (004)	560
05.11.03 (005)	924
05.11.03 (006)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.11.03 (007)	1025
05.11.03 (008)	847, 1025
05.11.03 (009)	1031, 1032
05.11.03 (010)	924
05.11.03 (011)	1032
05.11.03 (012)	1102
05.11.03 (013)	595, 610
05.11.03 (014)	979, 993, 1031, 1068, 1080, 1120, 1126
05.11.03 (015)	28
05.11.03 (016)	924
05.11.03 (018)	599
05.11.03 (019)	924
05.11.03 (020)	685, 958, 959, 964, 975, 1032, 1160
05.11.03 (021)	924
05.11.03 (022)	1080, 1120, 1126
05.11.03 (023)	924
05.11.03 (024)	990, 1359
05.11.03 (025)	262
05.11.03 (026)	360, 370, 418, 537, 998
05.11.03 (027)	924
05.11.03 (028)	924
05.11.03 (029)	1080, 1120, 1126
05.11.03 (030)	924
05.11.03 (031)	849
05.11.03 (032)	924
05.11.03 (033)	924
05.11.03 (034)	1080, 1120, 1126
05.11.03 (035)	1031
05.11.03 (036)	1080, 1120, 1126
05.11.03 (037)	478, 543
05.11.03 (038)	1062, 1063
05.11.03 (039)	1296
05.11.03.03 (001)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.12 (001)	26, 137, 154, 219, 222, 241, 252, 260, 263, 294, 297, 299, 301, 335, 421, 434, 512, 532, 534, 542, 559, 561, 566, 646, 652, 654, 728, 732, 740, 742, 769, 770, 776, 799, 800, 858, 872, 910, 912, 916, 926, 927, 930, 942, 944, 945, 946, 947, 948, 952, 955, 957, 959, 960, 978, 980, 981, 986, 994, 995, 998, 1015, 1016, 1017, 1018, 1080, 1102, 1120, 1126, 1140, 1155, 1161, 1183, 1186, 1215, 1226, 1232, 1239, 1245, 1250, 1267, 1270, 1275, 1289, 1297, 1332, 1336, 1366, 1367, 1370, 1372, 1408, 1424, 1429, 1437, 1439, 1441
05.12 (001)	
05.12 (002)	825
05.12 (003)	1055, 1056
05.12 (005)	269, 930
05.12 (006)	924
05.12 (007)	452
05.12 (008)	465
05.12 (010)	930, 1444
05.12 (011)	906
05.12 (012)	938
05.12 (013)	939
05.12 (014)	924
05.12 (015)	469, 868, 1007, 1080, 1120, 1126, 1433
05.12 (016)	924
05.12.02 (001)	924
05.12.03 (001)	246, 262
05.12.03 (002)	167, 252, 294, 301, 314, 870, 926
05.12.03 (003)	292
05.12.04 (001)	1272
05.12.04 (002)	520, 526
05.12.04 (003)	225
05.12.05 (001)	515
05.12.05 (002)	924
05.12.06 (001)	924
05.12.06 (002)	186, 246, 262, 271, 272, 294, 299, 349, 422, 455, 899, 930,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

05.12.06 (002)	1007, 1077, 1093, 1286
05.12.06 (003)	265
05.12.06 (004)	847, 1012, 1044, 1045
05.12.07.01 (001)	269, 515, 1080, 1120, 1126
05.12.07.01 (002)	263, 269, 299, 307, 898, 899, 930, 1077
05.12.08 (001)	258, 264, 269, 453, 518, 620, 795, 825, 974, 1012, 1146, 1174, 1279
05.12.08 (002)	288
05.12.08.01 (001)	43
05.13 (001)	246, 262, 294, 297, 314
05.13.01 (001)	1033, 1034
05.13.01 (002)	916, 1161
05.13.01 (003)	792
05.13.01 (004)	924
05.13.02 (002)	938
05.13.02 (004)	847
05.13.02 (005)	926
05.13.02 (006)	899, 1007, 1077
05.13.04 (001)	294, 299, 542, 797, 1183
05.13.04 (002)	642
05.15 (001)	825, 1444
05.15 (002)	483, 487, 538, 823
05.15 (003)	374, 827
05.15 (005)	730, 1338
05.15 (006)	825
05.15 (007)	219
05.15 (008)	987
05.15 (009)	847, 1044, 1045
05.15 (010)	847
05.15 (011)	924
05.15 (012)	847

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
05.15 (013)	924
05.15 (014)	537, 847, 985, 997
05.15 (015)	847, 1032
05.15 (016)	638, 641
05.15 (017)	635
05.15 (018)	838
05.15 (022)	847
05.15 (023)	898
05.15 (024)	270
05.16 (001)	270, 453, 706, 1055, 1056, 1058, 1059, 1080, 1120, 1126
05.16 (002)	524
05.16 (003)	595, 610
05.16 (005)	316, 1183
05.16 (006)	224, 228
05.16 (007)	827, 1098
05.17 (001)	924
05.17 (002)	924
05.17 (003)	1080, 1120, 1126
05.17 (004)	1080, 1120, 1126
05.18 (001)	600
05.18 (002)	903, 984
05.18.01 (002)	366, 684, 903, 1002
05.18.01 (003)	1080, 1120, 1126
05.18.01 (004)	1080, 1120, 1126
05.18.01 (005)	1136
05.18.01 (006)	825
05.18.01 (007)	1080, 1120, 1126
05.18.01 (008)	595, 610, 1008
05.18.01 (009)	595, 924
05.18.01 (011)	737
05.18.01 (012)	978, 980
05.18.01 (013)	1080, 1120, 1126
05.18.01 (014)	1080, 1120, 1126

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

05.18.01 (015)	1008
05.18.02 (001)	832
05.18.04 (001)	545
05.18.04 (002)	26, 146, 195, 255, 264, 438, 439, 483, 538, 602, 658, 731, 827, 975, 984, 991, 1014, 1044, 1045, 1048, 1141, 1240, 1245, 1329, 1330, 1331, 1333, 1338, 1367, 1376, 1433
05.18.05 (001)	1080, 1120, 1126
05.19 (001)	357, 428, 430, 603, 870, 933, 938, 1257, 1373, 1425
05.19 (002)	870, 933, 938
05.19 (003)	739, 1022, 1023
05.19 (004)	270, 903, 998
05.19 (005)	924, 939, 1080, 1120, 1126
05.19 (006)	881
05.19 (008)	599
05.19 (009)	924
05.19 (011)	325, 648, 797, 854, 858, 881, 950, 952, 1084, 1101, 1385
05.19 (012)	1044, 1045
05.19 (013)	825, 939
05.19 (014)	515
05.19 (015)	602
05.19 (016)	170
05.19 (017)	924
05.19 (018)	1080, 1120, 1126
05.19 (019)	849
06.01 (002)	177, 202, 355, 465, 473, 519, 539, 582, 719, 797, 907, 908, 971, 976, 1003, 1061
06.01 (005)	545, 994, 1036, 1037
06.01 (006)	251
06.01 (008)	237
06.01 (009)	602
06.01 (011)	259, 877, 1303
06.01 (013)	468, 907
06.01 (014)	924

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
06.01 (016)	259
06.01 (017)	877
06.01.01 (001)	202, 247, 251, 473, 482, 515, 539, 543, 545, 549
06.02 (002)	610
06.02 (003)	113, 915
06.02 (005)	303, 832
06.02 (006)	358, 928
06.02 (007)	545, 549
06.02 (008)	738
06.02 (009)	924
06.02 (010)	235, 237, 291, 431
06.02 (011)	294
06.02 (012)	602
06.02 (013)	515
06.02 (014)	515, 825
06.02 (015)	482, 540, 610, 1061
06.02 (016)	908
06.02 (019)	599, 609, 610
06.02 (020)	456
06.02 (021)	202, 519, 610
06.02 (022)	924
06.02 (023)	939
06.02 (025)	1080, 1120, 1126
06.02 (028)	264, 924
06.02 (029)	877
06.02 (030)	924
06.02 (031)	924
06.02 (032)	545
06.02 (033)	768
06.02 (034)	729
06.02 (035)	797
06.02 (036)	1080, 1120, 1126
06.02 (037)	1080, 1120, 1126

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
06.03 (001)	167, 515, 905, 1006
06.03 (002)	971, 992
06.03 (003)	515
06.03 (004)	924
06.03 (005)	924
06.03 (006)	924
06.03 (008)	259, 610
06.03 (009)	610
06.03 (010)	939
06.03 (011)	186, 455, 515, 825
06.03 (013)	458, 515, 908, 1058, 1059
06.03 (014)	610, 1031
06.03.01 (001)	272, 1373
06.03.01 (002)	924
06.03.02 (001)	595
06.03.02 (002)	908
06.03.02 (003)	428, 430
06.04 (001)	562, 613, 623, 630, 687, 776, 797, 817, 832, 858, 902, 937, 963, 1030, 1103
06.04 (002)	1373
06.04 (003)	791
06.04 (004)	1161
06.04 (005)	328
06.04 (006)	847
06.04 (008)	1046, 1047, 1136
06.04 (010)	235, 424, 431
06.04 (011)	924
06.04 (012)	1080, 1120, 1126
06.04 (013)	1080, 1120, 1126
06.04.01 (001)	908, 976, 1035
06.04.01 (002)	518, 626
06.04.01 (003)	859
06.04.01 (004)	859, 1412

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
06.04.02 (001)	955
06.05 (001)	146, 202, 269, 425, 610, 825, 858, 859, 874, 1012, 1031,
06.05 (001)	1058, 1059, 1103, 1112
06.05 (002)	233, 244, 278, 425, 453, 469, 477, 482, 519, 541, 556, 559,
	561, 620, 718, 719, 737, 907, 986, 1007, 1017, 1018, 1021,
	1036, 1037, 1058, 1059, 1066, 1067, 1320
06.05 (003)	626, 630
06.05 (004)	220
06.05 (005)	483, 538, 877
06.05 (007)	730
06.05 (008)	737
06.05 (009)	126
06.05 (010)	213
06.05 (011)	112, 194, 212, 270, 343, 858, 950, 960, 994, 1246
06.05 (012)	927
06.05 (013)	838
06.05 (014)	344
06.05 (015)	453
06.05 (016)	44, 137, 264, 270, 344, 358, 463, 468, 483, 636, 642, 669,
	680, 832, 847, 900, 921, 928, 978, 980, 981, 1026, 1035,
	1036, 1037, 1044, 1045, 1048, 1122, 1279, 1296
06.05 (017)	189, 715, 930
06.05 (019)	1019, 1020
06.05 (020)	347, 588
06.05 (021)	840
06.05 (023)	902
06.05 (026)	158, 610, 706, 874
06.05 (028)	158, 446
06.05 (029)	930
06.05 (030)	270
06.05 (031)	610
06.06 (001)	474
06.06 (002)	549

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

06.06 (003)	1, 265, 312, 589, 636, 642, 762, 776, 858, 862, 900, 928, 951, 965, 1012, 1048, 1053, 1054, 1061, 1196, 1344, 1358, 907
06.06 (005)	907
06.06 (006)	545
06.06 (007)	924
06.06 (008)	1103
06.06 (009)	924
06.06 (011)	832
06.07 (001)	158, 225, 245, 266, 269, 337, 446, 448, 452, 469, 497, 515, 519, 546, 550, 633, 745, 762, 789, 840, 844, 847, 872, 874, 877, 931, 972, 976, 979, 1012, 1031, 1036, 1037, 1043, 1044, 1045, 1055, 1056, 1058, 1059, 1061, 1062, 1063, 1080, 1120, 1126, 1184, 1339
06.07 (005)	43
06.07 (006)	832
06.07 (007)	1103
06.07 (008)	1080, 1120, 1126
06.07 (009)	478, 543, 825
06.07 (010)	561
06.07 (011)	309, 363, 365, 999
06.07 (012)	450
06.07 (013)	978, 980
06.07 (014)	1012
06.07 (015)	447, 1011
06.08 (000)	848
06.08 (001)	629, 924
06.08 (002)	939
06.08 (003)	729, 988
06.08 (004)	847
06.08 (006)	610, 847
06.08 (007)	848
06.08 (008)	939
06.09 (001)	450

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
06.09 (002)	595
06.09 (003)	773
06.09 (004)	552
06.09 (005)	186, 452, 455
06.09 (006)	626, 859
06.09 (007)	62, 144, 275
06.09 (008)	483, 538, 1049, 1050
06.09 (009)	259
06.09 (010)	1055, 1056
06.09 (011)	91
06.09 (013)	144, 146, 230, 240, 254, 258, 264, 297, 299, 302, 305, 310, 314, 363, 365, 458, 586, 666, 667, 682, 757, 847, 858, 935, 999, 1090, 1107, 1136, 1213, 1278, 1280, 1286, 1303, 1313, 1323, 1372, 1387, 1389, 1402
06.09 (014)	144, 199, 301, 647
06.09 (016)	184
06.09 (017)	250, 610, 630
06.09 (019)	244, 519, 553, 863, 883, 1357
06.09 (021)	610
06.09 (022)	430
06.09 (023)	947
06.09 (024)	355, 360, 429, 469, 474, 517, 1055, 1056
06.09 (026)	939
06.09 (027)	939
06.09 (028)	877
06.09 (030)	996, 1046, 1047
06.09 (033)	468
06.09 (035)	600
06.09 (037)	597
06.09 (038)	547
06.09 (040)	632, 947
06.09 (041)	947
06.09 (042)	1036, 1037, 1184

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
06.09 (043)	247, 253
06.09 (044)	1119
06.09 (046)	126
06.09 (047)	924
06.09 (049)	825
06.09 (050)	939
06.09 (051)	624
06.09 (052)	1080, 1120, 1126
06.09 (053)	1080, 1120, 1126
07 (001)	56, 147, 258, 510, 531, 828, 829, 833, 847, 860, 880, 882, 925, 928, 1012, 1044, 1045, 1053, 1054, 1056, 1103, 1175, 1251, 1408
07 (003)	610
07.01 (002)	924
07.01 (003)	924
07.01 (004)	545
07.01 (006)	610
07.01 (007)	924
07.01 (008)	1008
07.01.01 (001)	1042
07.01.01 (002)	964
07.01.01 (003)	230
07.01.02 (001)	154, 519, 924
07.01.02 (004)	940
07.01.02 (005)	924
07.01.02 (006)	924
07.01.02 (007)	1008
07.01.03 (001)	432
07.01.03 (002)	924
07.01.03 (003)	610
07.01.03 (004)	610
07.01.03 (005)	610
07.01.03 (006)	978, 980, 1008

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

<u>Response Section Numbers</u>	<u>Comment Document Number</u>
07.01.04 (001)	847, 924
07.01.04 (002)	930
07.01.04 (003)	1080, 1120, 1126
07.01.05 (001)	610
07.01.05 (002)	907, 976, 1035
07.02 (001)	610, 924
07.02.01 (001)	483, 538
07.02.01 (002)	924
07.02.01 (003)	979, 1032, 1281, 1395
07.02.01 (004)	924
07.02.01 (005)	924
07.02.02 (001)	924
07.02.02 (002)	924
07.02.03 (001)	610, 979
07.02.03 (002)	908
07.02.04 (001)	610
07.02.04 (002)	610
07.02.04 (003)	924
07.02.04 (004)	924
07.02.06 (005)	941
07.03 (001)	1080, 1120, 1126
07.03 (002)	1080, 1120, 1126
07.04 (001)	212, 265, 497, 607, 609, 707, 797, 956, 1000, 1019, 1020, 1064, 1161, 1344, 1380, 1407
07.04 (003)	924
07.04 (004)	146, 313, 315, 483, 561, 595, 800, 827, 978, 980, 1032,
07.04 (006)	595, 610, 924
07.04 (007)	610, 924
07.04 (008)	1051, 1052
08.01 (001)	3, 11, 12, 13, 17, 21, 30, 40, 46, 52, 61, 89, 111, 112, 135, 136, 151, 172, 175, 176, 179, 192, 194, 196, 208, 210, 241, 258, 292, 307, 330, 339, 341, 342, 343, 344, 346, 350, 353, 354, 355, 356, 368, 369, 372, 376, 377, 380, 381, 382,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

08.01 (001)	383, 385, 387, 392, 393, 394, 397, 398, 401, 403, 404, 407, 408, 409, 410, 416, 417, 418, 425, 463, 465, 484, 485, 488, 489, 491, 492, 493, 496, 499, 501, 502, 508, 509, 511, 512, 513, 527, 530, 563, 565, 569, 572, 573, 575, 582, 583, 585, 589, 591, 594, 595, 669, 670, 684, 689, 690, 691, 692, 693, 699, 703, 704, 705, 765, 775, 841, 843, 867, 875, 877, 884, 885, 886, 887, 889, 892, 894, 895, 901, 917, 1025, 1086, 1093, 1141, 1147, 1166, 1167, 1183, 1213, 1258, 1270, 1284, 1290, 1309, 1344, 1351, 1387, 1389, 1405, 1411, 1419, 1440
08.01 (002)	17, 34, 91, 127, 141, 146, 156, 197, 200, 205, 211, 218, 303, 322, 324, 338, 339, 341, 346, 380, 382, 383, 384, 394, 395, 416, 500, 506, 552, 593, 600, 664, 690, 696, 701, 739, 763, 771, 777, 826, 843, 916, 951, 995, 1161
08.01 (003)	338, 399, 400
08.01 (004)	27, 39, 149, 160, 217, 303, 335, 343, 353, 375, 403, 407, 413, 414, 486, 564, 585, 686, 698, 727, 763, 771, 777, 843, 863, 865, 877, 1099, 1108, 1420
08.01 (005)	215, 293, 303, 335, 341, 401, 558, 684, 865, 1015, 1302
08.01 (006)	187
08.01 (007)	919
08.01 (008)	865
08.01 (009)	1014
08.02 (001)	30, 155, 176
08.02 (002)	610
08.02 (003)	610
08.03.01 (001)	192, 194, 201, 207, 254, 329, 381, 385, 406, 414, 513, 947, 995, 1060, 1065
08.03.01 (002)	142, 902
08.03.01 (003)	146, 176, 194, 198, 201, 203, 212, 218, 302, 919, 976
08.03.01 (004)	61, 172, 175, 177, 179, 180, 181, 194, 201, 218, 254, 371, 385, 401, 403, 630, 718, 1055, 1056

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
08.03.01 (005)	52, 111, 138, 142, 147, 160, 168, 171, 172, 177, 187, 191, 194, 198, 203, 214, 225, 256, 265, 292, 323, 344, 348, 355, 356, 377, 385, 403, 407, 413, 465, 511, 513, 595, 599, 609, 730, 764, 849, 856, 864, 918, 919, 955, 956, 976, 1093,
08.03.01 (005)	176, 177, 739, 764
08.03.01 (006)	138, 171, 349, 385, 406, 419, 883
08.03.01 (007)	4, 5, 6, 7, 8, 9, 10, 18, 19, 20, 23, 24, 25, 31, 32, 33,
08.03.01 (008)	52, 57, 58, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 93, 94, 95, 96, 97, 98, 99, 100, 103, 104, 106, 107, 108, 109, 110, 111, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 147, 159, 167, 265, 273, 280, 281, 282, 283, 284, 285, 286, 301, 302, 351, 355, 483, 595, 934, 935, 1012, 1387
08.03.01 (009)	41, 138, 277, 348, 357, 358, 745
08.03.01 (010)	187, 208
08.03.01 (011)	277, 348, 370, 380, 403, 408, 413, 417, 457
08.03.01 (012)	193, 316, 343, 344, 371, 391, 764
08.03.01 (013)	247, 251, 253, 269, 899, 1017, 1018, 1077, 1128, 1445
08.03.01 (014)	177, 179, 302
08.03.01 (015)	303, 1044, 1045
08.03.01 (016)	345
08.03.01 (017)	483, 538
08.03.01 (018)	179, 373, 849, 1445
08.03.01 (019)	859
08.03.01 (020)	840
08.03.01 (021)	187
08.03.01 (022)	344, 411, 415, 849, 1445
08.03.02 (001)	13, 21, 367, 369, 373, 409, 410, 1274
08.03.02 (002)	21
08.03.03 (001)	147, 411, 849, 979, 1445
08.03.03 (002)	44, 147, 425, 718, 762, 847, 849, 947, 965, 1012, 1021, 1024, 1044, 1045, 1058, 1059, 1061
08.03.03 (003)	847, 955, 1044, 1045, 1059

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

08.03.03 (004)	907
08.03.03 (005)	626, 865
08.03.04 (001)	167, 380, 905, 1006
08.03.05 (001)	147, 191, 214, 293, 302, 352, 368, 369, 377, 380, 392, 403, 406, 419, 457, 581, 864, 901
08.03.05 (002)	385, 411, 418, 610, 849, 1344
08.03.05 (003)	595, 610
08.03.05 (004)	359
08.03.05 (005)	164
08.03.05 (006)	324, 603, 664, 729, 818, 865, 1005, 1042
08.04 (001)	42, 166, 172, 179, 269, 329, 335, 411, 415, 448, 582, 823, 849, 859, 908, 968
08.04 (002)	167, 1445
08.04 (003)	125, 377, 511, 629, 765
08.04 (004)	849
08.04 (005)	865
08.04 (006)	1044, 1045
08.04 (007)	739
08.04 (008)	4, 5, 6, 7, 8, 9, 10, 18, 19, 20, 23, 24, 25, 31, 32, 33, 57, 58, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 93, 94, 95, 96, 97, 98, 99, 100, 103, 104, 106, 107, 108, 109, 110, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 280, 281, 282, 283, 284, 285, 286, 344, 408, 417, 582, 849, 864, 934, 935, 1293
08.04 (009)	4, 5, 6, 7, 8, 9, 10, 18, 19, 20, 23, 24, 25, 31, 32, 33, 57, 58, 59, 60, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 93, 94, 95, 96, 97, 98, 99, 100, 103, 104, 106, 107, 108, 109, 110, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 276, 280, 281, 282, 283, 284, 285, 286, 934, 935
08.04 (010)	11, 12, 13, 35, 40, 46, 47, 50, 51, 54, 88, 90, 101, 102, 111, 125, 128, 131, 134, 138, 139, 140, 142, 143, 145, 149,

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

08.04 (010)	155, 162, 163, 169, 180, 239, 240, 276, 277, 279, 292, 311, 318, 323, 330, 332, 333, 334, 336, 337, 341, 342, 343, 344, 353, 355, 359, 371, 374, 375, 376, 379, 381, 385, 386, 390, 391, 393, 397, 401, 414, 418, 420, 459, 490, 496, 499, 503, 529, 535, 554, 555, 557, 564, 570, 571, 576, 579, 580, 584, 590, 670, 678, 686, 694, 695, 697, 701, 716, 725, 753, 754, 764, 765, 767, 777, 839, 840, 844, 850, 861, 863, 867, 878, 884, 887, 888, 895, 905, 923, 931, 1005, 1006, 1092, 1097, 1110, 1128, 1182, 1197, 1252, 1255, 1278, 1303, 1340, 1344, 1388, 1402, 1409, 1410, 1412, 1413, 1415, 1416, 1417, 1445
08.04 (011)	11, 165, 371, 393, 401, 414, 586, 589, 892
08.04 (012)	371, 1445
08.04 (013)	13, 90, 111, 145, 180, 181, 239, 337, 341, 342, 343, 346, 353, 359, 374, 376, 389, 391, 401, 414, 420, 459, 490, 513, 528, 529, 567, 589, 590, 592, 685, 697, 700, 701, 754, 810, 850, 861, 1108, 1182, 1225, 1252, 1274, 1344, 1412, 1413
08.04 (014)	4, 5, 6, 7, 8, 9, 10, 13, 18, 19, 20, 23, 24, 25, 31, 32, 33, 35, 50, 57, 58, 59, 60, 61, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, 85, 86, 87, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 106, 107, 108, 109, 110, 111, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 128, 145, 180, 181, 279, 280, 281, 282, 283, 284, 285, 286, 311, 330, 332, 342, 344, 401, 414, 419, 499, 528, 529, 530, 536, 553, 610, 669, 725, 767, 777, 810, 842, 850, 861, 881, 884, 889, 890, 891, 893, 917, 934, 935, 1110, 1123, 1225, 1303, 1344
08.04 (015)	13, 61, 169, 401, 1092
08.04 (016)	167, 301, 311, 357, 836
08.04 (018)	166, 178, 196, 279, 379, 388, 389, 578, 686, 697, 761, 852, 917, 1099, 1417
08.04 (019)	178, 196, 342, 425, 528

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers

Comment Document Number

08.04 (020)	276, 277, 359, 386, 415, 850, 861, 1344, 1345
08.04 (021)	276, 279, 293, 330, 352, 359, 459, 553, 867, 1182, 1415,
08.04 (022)	344
08.04 (023)	849
08.04 (024)	840
08.04 (025)	515
08.04 (026)	147, 344
08.04 (027)	777
08.04 (028)	844, 931
08.04 (029)	385
08.05.01 (001)	147, 344
08.05.01 (002)	610
08.05.01 (003)	259, 595, 908
08.05.01 (004)	849
08.05.01 (005)	552
08.05.01 (006)	552
08.05.01 (007)	1, 552, 595
08.05.01 (008)	385
08.05.01 (009)	147, 344, 346, 420, 764, 864
08.05.02 (001)	17, 377, 1445
08.05.02 (002)	183, 410
08.05.02 (003)	369, 373, 377, 380, 410, 1445
08.05.02 (004)	401, 414, 1445
08.05.03 (001)	36, 131, 147, 344, 1445
08.05.03 (002)	55, 177
08.05.03 (003)	323, 330, 369, 370, 413
08.05.03 (004)	173
08.05.03 (005)	730
08.05.03 (006)	125, 552
08.05.04 (001)	373, 378, 384, 395, 412
08.05.04 (002)	12, 180, 181, 183, 204, 276, 359, 373, 397, 411, 553, 695,
	849, 1412, 1413, 1445
08.05.04 (003)	414, 1414

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
08.05.04 (004)	132, 145, 178, 337
08.05.04 (005)	164, 337, 341, 730
08.05.04 (006)	196, 371
08.05.04 (007)	11, 393, 849, 1409
08.05.05 (001)	14, 183, 369, 864
08.05.05 (002)	46, 111, 142, 147, 279, 344, 765, 867, 924, 1135, 1402
08.05.05 (003)	199, 924
08.05.05 (004)	924
08.05.05 (005)	339
08.05.05 (006)	610
08.05.05 (007)	924
08.05.05 (008)	924
08.05.05 (009)	924
08.05.05 (010)	924
08.05.05 (011)	610
08.05.06 (001)	191, 208, 214
08.05.06 (002)	183
08.05.06 (003)	125
08.05.06 (004)	131, 150, 358, 513, 529
08.05.06 (005)	27, 30, 37, 47, 131, 150, 160, 279, 336, 341, 358, 362, 369, 370, 371, 380, 385, 392, 407, 409, 410, 413, 419, 498, 552, 571, 578, 585, 589, 700, 725, 763, 764, 765, 767, 839, 850, 861, 886, 914, 923, 979, 1005, 1032, 1099, 1204, 1274, 1409, 1415, 1445
08.05.06 (006)	150, 279, 358, 375, 1204
08.05.06 (007)	397, 411, 415, 849
08.05.06 (008)	292, 301, 349
08.05.06 (009)	847
08.05.06 (010)	849
08.05.06 (011)	847
08.05.06 (012)	134, 1445
08.05.06 (013)	924
08.05.06 (014)	603

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
08.05.06 (015)	849
08.05.06 (016)	849
08.05.06 (017)	849
08.05.06 (018)	849
08.05.06 (019)	849
08.05.06 (020)	849
08.05.06 (021)	610
08.05.06 (022)	40, 385, 571
08.05.06 (023)	17, 40, 61, 369, 374, 391, 392, 408, 413, 417, 553, 695, 849, 1274
08.05.06 (024)	413, 849
08.05.06 (025)	61, 150, 151, 165, 167, 352, 376, 405, 407, 413, 472, 864
08.05.06 (026)	147, 344
08.05.06 (027)	183, 279, 323, 344, 411, 1012
08.05.06 (028)	40, 48, 147, 178, 411, 415, 1445
08.05.06 (029)	610
08.05.06 (030)	27, 51, 167, 581, 695, 864, 1108
08.05.06 (031)	353, 374, 385, 391, 513, 766, 875, 1419
08.05.06 (032)	168, 185, 279, 351, 764, 850, 861
08.05.06 (033)	178, 183
08.05.06 (034)	171
08.05.07 (001)	13, 52, 54, 385, 564
08.05.07 (002)	11, 12, 17, 371, 393, 397
08.05.07 (003)	13, 187, 765, 777
08.05.07 (004)	1274
08.05.07 (005)	405
08.05.07 (006)	765
08.05.07 (007)	765
08.05.07 (008)	765
08.05.07 (009)	1415
08.05.08 (001)	169, 201, 265, 352
08.05.09 (001)	610
08.05.09 (002)	610

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
08.05.09 (003)	610
08.05.09 (004)	595, 610, 924
08.05.09 (005)	595, 610
08.05.10 (001)	849
08.05.10 (002)	344
08.05.10 (003)	344
08.05.10 (004)	924
08.05.10 (005)	849
08.05.10 (006)	465, 971
08.05.10 (007)	849
08.05.10 (008)	344
08.05.10 (009)	924
08.05.10 (010)	173
08.05.10 (011)	924
08.05.11 (001)	13, 403, 763
08.05.11 (002)	153, 643
08.05.11 (003)	153, 643, 823
08.05.11 (004)	13, 313
08.05.11 (005)	823
08.05.11 (006)	37
08.05.11 (007)	847
08.05.11 (008)	924
08.06 (001)	1, 409
08.06 (002)	89, 610
08.06 (003)	147, 344
08.06 (004)	17, 38, 91, 1293
08.06 (005)	411, 415, 849
08.06 (006)	259
08.06 (007)	344
08.06 (008)	344
08.06 (009)	924
08.06 (010)	849
08.06 (011)	147, 344, 849

COMMENT/RESPONSE DOCUMENT INDEX

Response - Comment Contributor Correlation

Response Section Numbers	Comment Document Number
08.06 (013)	924
08.06 (014)	1080, 1120, 1126
08.06 (015)	344
08.06 (016)	344
08.06 (017)	849
08.06 (018)	1080, 1120, 1126
08.06 (019)	1080, 1120, 1126
08.06 (020)	563
09 (010)	316, 764
09 (021)	287
09.01 (003)	2, 15, 129, 227, 514
09.01 (004)	22, 225, 226, 229, 236, 250, 268, 347, 357, 426, 427, 433, 442, 444, 505, 521, 551, 608, 614, 628, 907, 936, 1035, 1049, 1050, 1070, 1234, 1243, 1257, 1319, 1346
09.01 (007)	1246
09.01 (008)	1338
09.01 (010)	1076, 1125