

QA:N/A

MOL.20070524.0072

Summary of Public Scoping Comments

Supplement to the Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada

May 2007

**U.S. Department of Energy
Office of Civilian Radioactive Waste Management
Las Vegas, Nevada**

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1. Introduction

This report summarizes the comments contained in letters, faxes, e-mails, and other correspondence from the public on the U.S. Department of Energy's (the *Department or DOE*) request for comments on the Supplement to the *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* (DOE/EIS-0250F, February 2002) (Federal Register, Vol. 71, No. 198, p. 60490) (referred to as the *Supplemental Repository EIS* for the remainder of this report).

The public scoping period for the *Supplemental Repository EIS* began on October 13, 2006, and ended on December 12, 2006. Summaries of the comments received after December 12, 2006 are included in this report. During the scoping period for the *Supplemental Repository EIS*, the Department also conducted public scoping on the expanded scope of the ongoing *Environmental Impact Statement (EIS) for the Alignment, Construction and Operation of a Rail Line to a Geologic Repository at Yucca Mountain, Nye County, Nevada* (Federal Register, Vol. 71, No. 198, p. 60484) (referred to hereafter in this report as the *Supplemental Rail Alignment EIS*). A companion report summarizing the public scoping comments on the *Supplemental Rail Alignment EIS* is available on the Departments WEB site at www.ocrwm.doe.gov.

Because public scoping was conducted during the same period of time for both EISs, many documents received by the Department contained comments on both EISs. Consequently, all comments, regardless of whether the document was addressed to the *Supplemental Repository EIS* or the *Supplemental Rail Alignment EIS*, were reviewed for applicability to both scoping reports. This was done to ensure a full and complete consideration of all public input to the scoping process. Comments that were applicable to both EISs are summarized in both scoping-summary reports.

2. Process Used to Categorize and Summarize Scoping Comments

Comments on the scope of the EISs were submitted in the form of court-reporter transcripts, letters, comment forms, e-mails, and facsimiles. Upon receipt, each comment document was date stamped, given a unique document number, and scanned into a database along with other relevant information such as the name, address, and phone number of the commentor. A total of 263 comment documents were received for both EISs.

Next, a list of topic "bins" was developed for each comment document into which individual comments would be assigned. For this scoping-summary report on the *Supplemental Repository EIS*, 7 major bins and 52 sub-bins were established to categorize comments (see Attachment A, *Comment Bin List*). (See the companion scoping-summary report for the bins and sub-bins used to categorize comments on the *Supplemental Rail Alignment EIS*.)

Each comment document was then read carefully. Scoping comments were identified and marked in the margin of each document in numerical order (1, 2, 3, etc.). Some comment documents had only one identifiable comment. Others, however, had dozens of comments. Each comment was assigned to a single bin or sub-bin (comments assigned to both scoping-summary reports were assigned to the appropriate bin for each report). The table below shows the categorization of all comments identified from the 263 scoping documents, and the categories in which the comments have been organized.

Comments on the Scope of the Supplemental Repository EIS and the Supplemental Rail Alignment EIS	
Total Comments Identified from all Scoping Documents	1,376
Comments Applicable Exclusively to the <i>Supplemental Repository EIS</i>	586
Comments Applicable Exclusively to the <i>Supplemental Rail Alignment EIS</i>	653
Comments Applicable to, and Addressed in, both Scoping Reports	137
Total Comments on <i>Supplemental Repository EIS</i>	723
Total Comments on <i>Supplemental Rail Alignment EIS</i>	790

All comments in each bin and sub-bin were summarized and these summaries were placed in tables (see Attachment B). The number of comments assigned to the 7 major bins established for the *Supplemental Rail Alignment EIS* is shown below.

Public Scoping Comments on the Supplemental Repository EIS by Major Bin		
<i>Bin</i>	<i>Topic</i>	<i>Number of Comments</i>
<i>A</i>	Policy	78
<i>B</i>	NEPA Process	102
<i>C</i>	Schedule and Licensing	26
<i>D</i>	Alternatives and Description of Proposed Alternatives	157
<i>E</i>	Environmental Resources	203
<i>F</i>	Sabotage and Terrorism	28
<i>G</i>	General	129
Total		723

The information contained in the summary tables (see Attachment B) in this report was then reviewed by the Department to help define the scope of the *Supplemental Repository EIS*. The *Supplemental Repository EIS* will describe the results of the scoping process and how the scope evolved in response to these public comments.

Attachment A – Comment Bin List

The *comment bin list* below shows where individual public comments on the scope of the *Supplemental Repository EIS* were assigned.

- A) Policy
 - 1) Geologic repositories should rely on geologic barriers
 - 2) Need for a National Energy Policy
 - 3) NEPA should consider perceived risk and stigma
 - 4) Aging pads are prohibited interim storage
 - 5) Lack of information regarding transportation plans
 - 6) Need for a Citizens' Advisory Board
 - 7) Site Characterization
 - 8) How to make NEPA information more available
 - 9) Treaty of Ruby Valley
- B) NEPA Process
 - 1) Criticism for conducting parallel NEPA processes and meetings
 - 2) Scoping process (notification) [comments on the scoping notification process, fliers, newspaper advertisements, Federal Register notices]
 - 3) Availability of information [comments criticizing the availability of information to assist the public in understanding the new design]
 - 4) Length of the scoping period, number and location of scoping meetings
 - 5) Treatment of scoping comments
 - 6) Whether to prepare a new EIS versus a supplemental EIS
 - 7) NEPA conflict-of-interest
 - 8) Compliance with NEPA [includes comments of support for, or opposition to, the overall NEPA process]
- C) Schedule/Licensing
 - 1) Overall repository schedule
 - 2) Permitting
 - 3) Licensing process
 - 4) Regulatory oversight of the repository
 - 5) NRC Construction authorization
 - 6) Programmatic Agreement with Advisory Council on Historic Preservation
- D) Alternatives and Description of Proposed Action (including No Action)
 - 1) Need for detailed design information - general
 - 2) Purpose and Need
 - 3) Other locations for storage, permanent
 - 4) Alternatives to geologic disposal
 - 5) Transportation alternatives
 - 6) Full analysis of Elko County
 - 7) Expanded repository capacity
 - 8) Repository operations
 - 9) Waste package design
 - 10) No Action Alternative
 - 11) Repository Design
 - 12) TAD – Alternatives

- 13) TAD – Analyses
- 14) TAD Support/Criticism
- E) Environmental Resources and Issues
 - 1) Environmental analysis - general
 - 2) Land Use
 - 3) Geology
 - 4) Hydrology
 - 5) Cultural Resources
 - 6) Socioeconomic Impacts
 - 7) Occupational and Public Health and Safety
 - 8) Accidents
 - 9) Utilities, Energy, Materials, and Site Services
 - 10) Traffic and Transportation
 - 11) Shipping Facts
 - 12) Long-term Performance
 - 13) Long-term Performance – Complex Chemicals
 - 14) Cumulative Impacts
- F) Sabotage and Terrorism
 - 1) Evaluation of sabotage and terrorism
 - 2) Suggested actions to protect against sabotage and terrorism
- G) General
 - 1) Yucca Mountain [includes comments for and against the Yucca Mountain Geologic Repository]
 - 2) Nuclear Power [includes comments for and against Nuclear Power]
 - 3) Criticism of DOE [includes comments on the U.S. Government in general]
 - 4) Learn from others

Attachment B: Comment-Summary Tables

The tables below contain the summaries of comments within each bin and sub-bin. The tables correspond to the major headings shown in the comment bin list (e.g., Table A is *Policy*, Table B is *NEPA Process*, Table C is *Schedule/Licensing*, etc.).

Table A. Policy

Subissue	Comment Summary	Documents
A geologic repository should rely only on geologic barriers	Commentors criticized DOE for considering engineered barriers when assessing repository performance.	10083 65074
There is a need for National Energy Policy	Commentors stated the need for a comprehensive energy policy that focuses on reducing demand for energy and investments in renewable energy (non-nuclear). Another commentor noted that Russia was developing an international repository and Russia should not be permitted to control the world's nuclear waste.	10019 60018
NEPA should consider impacts from perceived risk and stigma	Commentor suggested that DOE consider impacts from perceived risk and stigma.	10083 65041
Nevada should be compensated	Commentors stated that Nevada should be compensated for having the repository in the state. One commentor further stated that a trust fund managed by the State be established to pay for disaster recovery.	10023, 10033 65054
Aging pads are prohibited interim storage	Commentors expressed that the concept of surface aging of spent nuclear fuel was the same as creating an interim storage facility at Yucca Mountain – an action that was not permitted under the NWPA.	10008, 10020, 10048, 10049, 10052, 10077, 10078, 10083, 10085, 10090 65063, 65074, 65076, 65078
Lack of information regarding transportation plans	Commentors expressed concern over the lack of comprehensive transportation information related to the safe transport of spent nuclear fuel and high-level radioactive waste. Some of the commentors stated that development and publication of a national transportation plan would be the appropriate way to provide or address information of interest. Other commentors stated that the supplemental EIS would be the appropriate way to present the information.	10005, 10008, 10010, 10012, 10020, 10024, 10078, 10082, 10087, 10090, 10091 60070, 60074, 60079 65008, 65009, 65015, 65022,

	<p>The commentors identified the need to:</p> <ul style="list-style-type: none"> • Establish a transportation working group of Federal, State, and tribal participants to guide transportation planning and implementation. • Establish an advisory group of risk experts and practitioners to guide transportation planning and implementation. • Undertake detailed surveys of all routes to identify potential hazards and needed improvements. • Implement a full-scale cask-testing program. One commentor suggested testing with common terrorist weapons (rocket-propelled grenades, improvised explosive devices). • Establish an “oldest fuel first” shipping program. • Establish a dedicated train program. • Establish full and detailed identification of routes and modes from all reactors. • Identify an emergency responder preparedness program including a national response team, expert trainers, and trained responders on all shipments. Identification of funding would also be required. • Establish transportation limits and requirements (speeds, time in transit, dwell time, etc.) • Establish safety requirements for unimproved grade crossings. • Establish a waste acceptance schedule including information on a reactor-by-reactor basis. • Establish plans for special handling of damaged fuel. • Establish plans for special handling of fuel of unknown pedigree. • Establish plans for handling casks that develop problem in route. • Identify plans for establishing any priorities for spent fuel shipments. • Establish plans to mitigate the potential for sabotage or terrorism. 	65030, 65039, 65041, 65061, 65064, 65065, 65067, 65068, 65070, 65073, 65071, 65076
Need for a Citizen’s Advisory Board	Commentors suggested that DOE establish a citizens’ advisory board to act as an interface between the Yucca Mountain project and the general public.	65017
Site Characterization	Commentors suggested that repository performance applicable to radiation mitigation be tested using live spent fuel.	10027

How to make NEPA information more available	<p>Commentors requested that DOE make all reference documents for the supplemental EIS available on the internet.</p> <p>One commentor suggested that the supplemental EIS (and other “documents”) should be translated into Spanish and Braille and that DOE should provide translators during public meetings.</p>	10083, 10088
Treaty of Ruby Valley	Commentors stated that the United States government has not honored the Ruby Valley Treaty of 1863 with the Western Shoshone Nation. Other commentors cited the United Nations Committee on the Elimination of Racial Discrimination decision and asserted that it supported further evaluation of the claim of land ownership by the Western Shoshone Nation.	10014, 10075, 10093 65064

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Table B. NEPA Process

Subissue	Comment Summary	Documents
<p>Criticism for conducting parallel NEPA processes and meetings</p>	<p>Commentors expressed displeasure and/or confusion because DOE was running two concurrent NEPA processes at the same time.</p> <p>One commentor criticized the DOE for holding scoping meetings on the same day as other project meetings open to the public (e.g., a technical exchange).</p>	<p>10021, 10088, 10063, 10083</p> <p>60058</p> <p>65002, 65021, 65074</p>
<p>Scoping process (Notification)</p>	<p>Commentors submitted comments critical of the department's notification process. Some of these commentors criticized the method used by the department to advertise the scoping meetings stating that the department had failed to approach all interested parties. Some commentors requested that the department re-advertise each meeting (including those being conducted for the Supplemental YM Rail Corridor and Rail Alignment EIS) as joint meetings and accept public comments on both documents in each meeting.</p> <p>Other commentors criticized the department for failing to sufficiently notify all those who could be affected in other states (e.g., that the department focused its notification process on Nevada).</p>	<p>65002, 65003, 65004, 65008, 65022, 65045, 65065, 65072, 65073</p>
<p>Availability of information</p>	<p>Commentors submitted comments critical of the limited information on the project (especially new design information). These commentors stated that without adequate information the public could not understand the nature of the proposal. Information specifically identified as inadequate by the commentors included:</p> <ul style="list-style-type: none"> • Information about the TADs (including any graphic descriptions) • Detailed information about the proposed surface facilities • How TADs will integrate with utilities • Map showing the Western Shoshone homelands <p>Several of these commentors requested that more detailed information be provided in an amended Notice of Intent or other notices to support the scoping process.</p>	<p>10008, 10019, 10020, 10090</p> <p>60085</p> <p>65002, 65003, 65004, 65005, 65006, 65008, 65009, 65015, 65019, 65021, 65022, 65030, 65041, 65063, 65064, 65065, 65072, 65073, 65075, 65076</p>

<p>Length of scoping period, number and location of scoping meetings</p>	<p>Commentors submitted comments regarding the length of the scoping period, the number of scoping meetings and the location of scoping meetings; all of these comments were critical of the department's approach. Many suggested that the scoping period be extended, usually suggesting a minimum of 90 days, believing DOE's period of 45 days to be too short to receive adequate comments or for the public to understand the proposed action. One commentor further criticized the 45-day comment period as too short in light of the two scoping processes being conducted in parallel. Commentors also requested that DOE hold many more scoping meetings and offered suggested locations such as;</p> <ul style="list-style-type: none"> • Near reactor sites • Various locations outside Nevada that would be affected by transportation of materials, as well as in additional locations within Nevada. 	<p>10008, 10019, 10020, 10021, 10063, 10083, 10088</p> <p>60056, 60076, 60086</p> <p>65002, 65003, 65004, 65008, 65021, 65022, 65023, 65030, 65063, 65065, 65067, 65071, 65072, 65073, 65074, 65076, 65078</p>
<p>Scoping meeting format</p>	<p>Commentors submitted comments regarding the department's use of an open-meeting format for the public meetings. While most of these commentors expressed an opposition to the open-meeting format, some of the commentors offered support for the format. Those opposed often suggested that a more "traditional", hearing process with DOE presentations, questions and answers, and a court reporter taking public comments in a public session would be more appropriate. These commentors voiced a preference for the more traditional process believing it better prepares others for comment and thus provides more insightful comments to DOE.</p> <p>Commentors expressed displeasure that the scoping meetings were held early in the scoping period thereby not allowing sufficient time for commentors to study the information and develop their comments.</p> <p>One commentor requested that scoping meetings be broadcast so people could participate remotely.</p> <p>Commentors expressed support of the open-meeting format, suggesting that the process was more informative.</p>	<p>10019, 10083</p> <p>65002, 65003, 65004, 65008, 65021, 65022, 65028, 65030, 65045, 65060, 65063, 65064, 65065, 65071, 65073, 65074</p>

Treatment of scoping comments	Commentors offered suggestions regarding how the department should treat scoping comments in order to determine the scope of the supplemental EIS and the significant issues to be analyzed. One suggested that each comment be carefully considered. One commentor requested assurance that the President would review scoping comments.	10005 65002
Whether to prepare a new EIS versus a supplemental EIS	<p>Commentors addressed the issue of how the department should present the NEPA analysis for the Yucca Mountain project, as a new EIS or as a supplemental EIS. Some commentors expressed general support and agreed that it was appropriate to prepare a supplemental EIS to address the design changes. Other commentors believed that the new design represents very substantial changes to the proposed action and that the available information had changed to such a degree that what was characterized as a "full" EIS should be prepared, not just a supplement to the FEIS.</p> <p>Commentors expressing support of the preparation of a supplemental EIS further stated that the department should limit its scope to address only material changes to repository design or operations. These commentors stated that the department should not prepare new impact analyses if the FEIS bounds the design evolution or if there is no new information.</p> <p>Still other commentors stated that there was sufficient information already available and expanded environmental study was not necessary in either form.</p>	10012, 10079, 10083, 10085, 10090, 10095 65060, 65064, 65074
NEPA conflict-of-interest	Commentors suggested that the involvement of Bechtel SAIC Company in the NEPA process represented a clear conflict of interest (under CEQ Regulations at 40 CFR 1506.5(c)).	10014

<p>Compliance with NEPA</p>	<p>Commentors provided statements of support for, or opposition to, the overall NEPA process and how it was being used for Yucca Mountain. The advocates for the process cited its importance to developing a better understanding of the proposal and complemented the department's initiative to supplement the FEIS.</p> <p>Those opposed suggested that the Department's scoping process hindered the public from participating, another commentor suggested that the process was being prepared to "backup" a decision to proceed with the repository.</p>	<p>10001</p> <p>60077</p> <p>65003</p>
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Table C. Schedule/Licensing

Subissue	Comment Summary	Documents
Overall Repository Schedule	Commentors suggested that it was time to move forward on the Yucca Mountain Project. Some of the commentors stated that past environmental studies have sufficiently shown that the repository can be operated safely.	10012, 10029, 10095
Permitting	Commentor suggested that the EIS should address DOE's responsibility to seek and receive permits for water use to support the construction and operation of the repository.	10078
Licensing Process	Commentor expressed criticism of the lack of openness of the NRC licensing process. Specifically, the commentor wanted to submit contentions to the NRC.	60044
Regulatory oversight of the repository	<p>Commentors provided comments regarding the different regulatory oversight that they believed would apply (or should apply) to the repository, including transportation.</p> <p>Commentors provide a list of Federal, State and Tribal authorities that they considered as having regulatory jurisdiction, including;</p> <ul style="list-style-type: none"> • U.S. Environmental Protection Agency – including the requirement to manage the Yucca Mountain facility under RCRA, CERCLA, and the Safe Drinking Water Act. • U.S. Bureau of Land Management – specifically that the project must be discussed in BLM Resource Management Plans in accordance with Federal law and that at this time it is not. • American Indian Tribal requirements. <p>Many of these commentors called for the supplemental EIS to identify all applicable regulatory requirements.</p> <p>One commentor noted that compliance with the EPA safety standard (for long-term performance) is more stringent than other requirements indicating that other regulations would not be necessary.</p>	<p>10064, 10078, 10083, 10090, 10092, 10093</p> <p>65015, 65041, 65049, 65052, 65064</p>

NRC Construction Authorization	Commentors requested that DOE provide the legal authority for construction activities that might occur prior to an NRC construction authorization.	10078
Programmatic Agreement with Advisory Council on Historic Preservation	Commentors suggested that DOE must obtain a new programmatic agreement prior to conducting any activity that might impact historic properties or cultural resources.	10078

Table D. Alternatives and Description of Proposed Action

Subissue	Comment Summary	Documents
Need for detailed design information - general	Commentors provided comments regarding the level of detail that they believed the supplemental EIS should present. While some of these commentors suggested that detailed engineering designs must be provided in order to prepare realistic estimates of potential impacts other commentors stressed the importance of maintaining a broader discussion of design to accommodate continuing design evolution. Other commentors requested that the supplemental EIS identify the need and benefit of the recent changes. Commentors also requested inclusion of information regarding the types of waste and the waste acceptance schedule and transportation details for numbers of shipment along all routes.	10001, 10012, 10021, 10078, 10079, 10084, 10087, 10088, 10089, 10090, 10095 65002, 65009, 65015, 65021, 65028, 65064
Purpose and Need	Commentors suggested that the EIS provide justification (i.e., purpose) for any construction activities that might occur prior to the NRC issuing a construction authorization. The commentor suggested that such activities were not necessary for such a short duration and were a misuse of funds.	10078
Other locations for storage, permanent	Commentors suggested alternate locations for a geologic repository. One commentor suggested that SNF and HLW be stored as far east in the United States as possible. The suggestion was based on a perception of predominate west-to-east wind directions; if a release were to occur the wind would carry the contamination away from populations. Other commentors suggested remote locations in Alaska or other countries. Another commentor suggested that the materials be stored at different sites around the country. Other commentors stated that states that benefit from nuclear power should be responsible for storage and disposal.	10002, 10036, 10038, 10042, 10061, 10070, 10083 65012, 65024, 65039
Alternatives to Geologic Disposal	Commentors offered alternatives to geologic disposal including surface storage at the Nevada Test Site, reprocessing (centralized or at each reactor), neutralization, long-term (100 to 300 years) interim storage within Yucca Mountain, storage at reactors, using the heat for generating energy, and long term storage at reactors while other technologies are developed.	10003, 10046, 10050, 10057, 10058, 10059, 10074, 10079, 10080, 10081, 10091 60061 65010, 65011, 65014, 65029,

		65033, 65038, 65040, 65046, 65048, 65054, 65058, 65065, 65078
Transportation Alternatives	<p>Commentors requested that DOE consider a variety of transportation modes including intermodal alternatives. Some comments focused only on the supplemental EIS considering a mostly truck alternative for transportation of SNF and HLW within Nevada, while other comments focused on a complete evaluation nationwide. Effectively, commentors suggested reconsidering the decision to use mostly rail nationally and in Nevada. Some commentors were openly opposed to the construction of a rail line because of the cost.</p> <p>Commentors also suggested the supplemental EIS consider what would happen if the rail line was not available until after the repository begins receipt operations.</p> <p>Other commentors expressed support for the mostly rail decision for transportation citing the need for fewer shipments with the larger rail transportation casks.</p> <p>One commentor suggested using air transport to move the waste to Yucca Mountain.</p>	10001, 10012, 10078, 10095 60074 65009, 65028, 65054
Full analysis of Elko County	One commentor stated the need for the supplemental EIS to include a full analysis of impacts within Elko County (Nevada), presumably presentation of impacts similar to what was presented for Clark, Nye and Lincoln Counties in the FEIS.	65080
Expanded repository capacity	Commentors stated that the government should move forward with expanding the capacity of Yucca Mountain because the projected inventory of spent nuclear fuel exceeded the current legislative capacity.	10017
Repository operations	Commentors suggested construction and operations concepts for the repository that should be evaluated in the supplemental EIS. One commentor stressed the importance of developing the regional transportation infrastructure prior to construction of repository facilities (roads and rail).	10005, 10087, 10095

	<p>Another commentor suggested that Yucca Mountain initiate operations by receiving only low-level radioactive waste. SNF and HLW would remain at their current storage locations (citing the excellent safety record of reactor sites) until such time that operations at Yucca Mountain could be refined through a lessons-learned process.</p> <p>Another commentor suggested the transportation campaign should start at reactors closer to Yucca Mountain, again allowing a learning period for transportation.</p>	
Waste Package Design	Commentors suggested an alternative design for waste packages that would rely on the use of depleted uranium. Such a design would enhance radiation shielding while at the same time allowing for the disposal of depleted uranium	10013
No Action Alternative	<p>Commentors stressed that the department consider different no action scenarios (other than those in the FEIS) that are more realistic. The commentors suggested that a 10,000 year no action scenario was not realistic, that new developments such as regional consolidated interim storage (e.g., Utah PFS), and that recent lawsuit settlements (that suggest DOE overestimated costs) are all examples of why the past analysis must be upgraded.</p> <p>Other commentors suggested that the existing no action analysis is sufficient and should not be repeated or modified.</p>	<p>10078, 10079, 10083, 10092, 10095</p> <p>60064</p>
Repository Design	Commentors suggested that the repository design maintain a wet handling capacity for receipt and handling of spent nuclear fuel packaged in existing dual purpose casks.	10079

TAD – Alternatives	<p>Commentors stressed that DOE should treat the TAD as an alternative in the supplemental EIS, providing a comparison between the new TAD concept and the previous repository concept and allowing the NEPA process to lead to a decision on TAD use.</p> <p>Some of the commentors also stressed that DOE should present a range of TAD implementation scenarios and not rely solely on a “90% use of TADs”. The commentors based their comment on the uncertainties associated with implementation at each reactor site (i.e., reactor acceptance), that more than 10% of the SNF may already be packaged in dual-purpose containers.</p> <p>One commentor questioned the future of the existing dry-cask storage systems in use at reactors. The commentor questioned whether dry-cask systems would stop being used if DOE “presses” for the use of TADs.</p> <p>One commentor stressed that DOE should include a truck-based TAD because some reactors will not be able to load and ship the larger rail-based TAD.</p>	10021, 10078, 10079, 10084, 10088, 10089, 10095, 10096
TAD – Analyses	<p>Commentors submitted comments associated with the type of analyses that should be conducted based on TAD implementation. These included:</p> <ul style="list-style-type: none"> • Impacts of the necessary changes or upgrades to reactor facilities to allow TAD use, including the need for important changes to facility operations, safety and quality documentation. • Impacts from packaging SNF at the reactor sites, including the issue that certain radiological impacts would be transferred from the repository to the reactor sites. • Impacts from exterior contamination on the surface of the TAD and the potential release of that contamination to workers and the public. • Impacts from the increase number of shipments due to TAD implementation. • Impacts to the retrieval process. 	<p>10008, 10020, 10021, 10078, 10079, 10083, 10084, 10088, 10090, 10091</p> <p>60076</p>
TAD – Support/Concern	<p>Commentors provided statements in support or opposition to the use of TADs. A few supportive commentors believed that the use of TADs</p>	10007, 10008, 10012, 10015, 10018, 10020, 10021, 10027,

	<p>represented a significant improvement in repository design (including enhanced protection for the worker, public and environment). Many commentors expressed a concern that focused on the lack of information available on TADs; these comments included:</p> <ul style="list-style-type: none"> • Lack of information on the design of TADs. One commentor suggested that the supplemental EIS provide more detailed information regarding TADs (performance specifications, use of welded closures, bolted closures, or some combination, future of current storage systems, need for reactor upgrades for handling, need for full-scale testing). • Lack of information on the cost (or savings) from implementing TADs • Lack of information on how TADs fit into the overall repository operation concept, including the need for overpacks for shielding, transportation, storage, schedule for development, and protection from terrorist attacks. • Lack of information on impacts to the shippers from implementing the TAD concept. • Confusion over the difference between TADs and the old multi-purpose canister (MPC) concept that the Department decided not to pursue several years ago. • Questions regarding the ability to successfully implement TADs. Commentors stressed the existence of major uncertainties with the TAD concept (condition of spent fuel, handling infrastructure at reactors, lack of coordination with utilities, rail availability to the repository, time table for development and certification, incompatibility with reprocessing). Commentors noted that these concerns have been raised by the NWTRB. • Lack of information on the regulatory and quality assurance requirements that might apply to TAD design, fabrication, and use, including how past quality issues with casks will be avoided. • Lack of information on quality control over loading (citing the large number of sites that will use the system) and uncertainties related to spent fuel records. • How does the use of TADs affect retrievability? 	<p>10063, 10078, 10079, 10083, 10088, 10090, 10095</p> <p>60076, 60085</p> <p>65003, 65004, 65008, 65015, 65019, 65030, 65039, 65060, 65064, 65065, 65067, 65073, 65076, 65079</p>
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Table E. Environmental Resources

Subissue	Comment Summary	Documents
Environmental analysis - general	<p>Commentors provided comments regarding the analysis of environmental impacts that were of a general nature. While many commentors identified the typical list of resource areas that are addressed in an EIS, other commentors suggested:</p> <ul style="list-style-type: none"> • All calculated risks must include an evaluation of all risk factors and provide the degree of uncertainty in the calculation. • Both direct and indirect impacts must be considered • Impacts for different spent fuel age scenarios • Comparing risks associated with transportation and management of SNF and HLW at the repository to the transportation and management of other hazardous materials. The commentor specifically suggested comparing shipping frequency, shipping containers, storage containers, and procedures. 	<p>10006, 10083, 10087, 10090, 10095</p> <p>60070</p>
Land Use	<p>Commentors requested the supplemental EIS address the impacts that would occur from withdrawal of lands from other uses. The analysis should consider that the land would be under restricted access and unavailable for economic development and future water resources development.</p>	<p>10095</p>
Geology	<p>Commentors expressed interest in the geologic conditions of the Yucca Mountain area. Commentors stated that the supplemental EIS should identify impacts from the project on the geologic region as well as that the supplemental EIS should consider what the commentors identified as weaknesses related to the geologic conditions. Commentors stated concern over the geologic stability in the area citing the location in an active seismic region, the amount of existing rock fractures, and the documented creep in the area planned for surface facilities.</p> <p>While some commentors stated that these geologic concerns should disqualify the site completely, other commentors stressed the importance of designing repository facilities to withstand projected earthquakes (i.e., ability</p>	<p>10008, 10013, 10015, 10016, 10020, 10025, 10027, 10051, 10062, 10094</p> <p>65064</p>

	to withstand elevated g-forces).	
Hydrology	<p>Commentors expressed an interest in the hydrology conditions of the Yucca Mountain area. Commentors stated that the supplemental EIS should identify impacts from the project on the hydrologic region as well as that the supplemental EIS should consider what the commentors identified as weaknesses related to the hydrologic conditions. Commentors stated concern over the ground water resources in the region. The concerns included; the existence of ground water in the region citing the existence of springs, concerns over changes from depleted ground water resources, the changes to infiltration as a result of surface "paving," and the availability of groundwater to support repository construction and operation. Commentors stressed the importance of taking into account the hydrologic conditions in designing repository facilities.</p> <p>One commentor suggested evaluation of a scenario where ground water, pressurized by seismic activity could flood tunnels.</p> <p>One commentor suggested that there was insufficient information regarding regional hydrology. The commentor suggested that DOE perform necessary testing and present the results in the supplemental EIS.</p>	<p>10016, 10025, 10051, 10062, 10078, 10083, 10094</p> <p>65031, 65064</p>
Cultural Resources	<p>Commentors indicated that the impacts of disturbing tribal land and cultural resources must be considered. Commentors noted that Yucca Mountain lies within a region that includes many American Indian Tribal groups and sacred sites.</p> <p>Some commentors stressed that the department should actively engage American Indian tribes in the process including providing logistical and financial support, sharing of recent cultural resource management plans and other information, and providing justification for the reference material to be used in the analysis.</p>	<p>10011, 10081, 10093, 10094</p> <p>65007, 65041, 65079</p>
Socioeconomic Impacts	<p>Commentors submitted comments suggesting how the assessment of socioeconomic impacts should be conducted, these included;</p>	<p>10006, 10083, 10087, 10095</p> <p>65041</p>

	<ul style="list-style-type: none"> • Obtaining accurate and up-to-date accurate population estimates (deemed especially important because of the rapid growth in the Las Vegas valley). The commentors suggested the department work directly with the counties to obtain this information. • Update (from the FEIS) the assessment of the economic impacts in Nye and Clark Counties. • Use reasonable assumptions regarding the location of the workforce (one commentor suggested that the majority of workers would reside in Nye County). • Include an analysis of the effects from an influx of a high-trained, technical workforce (i.e., Yucca Mountain workers) in Nye and Clark Counties. • Identify the commercial activities necessary to serve the repository. • Evaluate impacts to Tribal communities. 	
Occupational and Public Health and Safety	<p>Commentors identified types of analysis to human health and safety that should be conducted, these included:</p> <ul style="list-style-type: none"> • Impacts from radioactive materials • Impacts from other biologically hazardous pollutants, factors and conditions. • Impacts from exposure to naturally occurring minerals in Yucca Mountain (zeolite, eronite, mordonite). • Consider more than just latent cancer fatalities; the analysis must consider ill health or radioactive sicknesses for all releases including an assessment of low-dose effects. • Consider impacts to more vulnerable members of the population (e.g., embryo, fetus, pregnant woman, young children, the aged, those with impaired health). • Consider impacts to “downwinders,” those populations impacted by nuclear weapons testing. • Consider the risk of any amount of radiation exposure. • Consider the risk of handling uncanistered fuel. 	<p>10008, 10020, 10021, 10030, 10064, 10083, 10087, 10090, 10091</p> <p>65038, 65049, 65052, 65078, 65079</p>

	<ul style="list-style-type: none"> • Do not rely only on analysis of population doses, that doses to individuals are also important. • Develop a baseline of human health impacts from historic transportation and handling of spent fuel. • Consider the historical fatalities and health risks associated with handling of spent fuel in developing such impact estimates associated with the proposed action (presented on an annual basis). <p>Several of these commentors stated that the EIS should consider impacts from both routine operations and under accident situations.</p> <p>Another commentor stated that the supplemental EIS should identify mitigation measures to reduce the risks.</p>	
Accidents	<p>Commentors submitted comments related to the assessment of risk from accidents and identified accident scenarios that should be evaluated in the EIS, including:</p> <ul style="list-style-type: none"> • Identify accident potential within specific communities • Aircraft crashes (Commentors stated both opposition and support for the analysis taking “credit” for a no-fly zone as a mitigation for aircraft accidents.) • Cask drops • Runaway train accidents • Cladding fires • Lose of pool water • Radiological release • Fire (including an evaluation of higher temperature fires caused by hazardous chemicals) • Barge accidents (including potential for criticality) • Track failure (due to substandard conditions) <p>Several of these commentors stressed the importance of considering</p>	<p>10008, 10018, 10020, 10030, 10061, 10078, 10087, 10090, 10091, 10092</p> <p>65039, 65040, 65041, 65049, 65052, 65075</p>

	<p>accidents involving both intact and damaged fuel and fuel of different ages.</p> <p>One commentor called for the supplemental EIS to identify mitigation measures that will be used to reduce or eliminate the potential for accidents.</p> <p>Other commentors called for the supplemental EIS to identify plans for responding to accidents, including protecting, treating and evacuating civilians.</p>	
Utilities, Energy, Materials, and Site Services	Commentors expressed an interest in the quality assurance program that would be applied to the manufacture of repository components (specifically TADS) and also operation of the repository.	10010
Traffic and Transportation (Explain the risks)	<p>Commentors stated that the supplemental EIS should tell the whole truth related to radiological impacts from transportation. The commentors felt that the FEIS did not sufficiently address the risks and the methods to mitigate those risks – the commentors called upon these issues to be covered in the supplemental EIS. The commentor went on to stress that the supplemental EIS should fully describe impacts from both routine shipping and in the event of an accident while considering the full range of potential shipments. One commentor specifically expressed interest in potential impacts to waterways, private land, wildlife areas, and historic parks along the transportation routes.</p> <p>Commentors stated a concern over the potential for impacts to people living and working close to the transportation routes. The commentor stated that risks from both routine shipping and in the event of an accident are unacceptable.</p>	<p>10019, 10078</p> <p>60076, 60079, 60085</p> <p>65019, 65020</p>
Shipping Facts	<p>Commentors provided comments identifying information that they want the supplemental EIS to present, such as;</p> <ul style="list-style-type: none"> • Number of both rail and truck shipments • National rail and truck routes • How and when heavy-haul trucks might be used • Breakdown of which type of shipping package (cask type and TAD) would be used for each mode, the shipping strategy (i.e., oldest fuel 	<p>10078, 10087</p> <p>60070, 60074, 60077</p> <p>65008, 65015, 65022, 65030, 65039, 65065, 65068, 65073, 65076</p>

	<p>first), and the use of dedicated trains.</p> <ul style="list-style-type: none"> • Transportation impacts to specific communities and regions along all routes 	
Long Term Performance	<p>Commentors provided comments related to the analysis of long-term impacts associated with Yucca Mountain, these included;</p> <ul style="list-style-type: none"> • Consider ground-water impacts and waste package (and drip shield) corrosion. • Perform full scale testing with high-level radioactive waste to validate the performance of the geologic area. • Consider inadvertent human intrusion after repository closure. • Include a scenario where ground water, pressurized by seismic activity could flood tunnels, might flash to steam in the heated tunnels. • Consider the consequence of for rock fracture caused by high temperatures • Consider cost related impacts (in addition to radiological impacts). • Include an assessment of individual barrier analysis and each barrier's contribution to performance. 	<p>10008, 10015, 10016, 10020, 10051, 10062, 10083, 10090</p> <p>65008, 65049, 65052, 65064, 65065, 65073</p>
Long Term Performance – Complex Chemicals	<p>Commentors criticized the absence of analysis of the impacts associated with complex chemicals (mixtures of radioactive and hazardous materials).</p>	<p>10064, 10078</p> <p>65049, 65052</p>
Cumulative Impacts	<p>Commentors suggested other major activities that should be considered for the potential of generating cumulative impacts; the activities included;</p> <ul style="list-style-type: none"> • “Complex 2030” work at the Nevada Test Site. • Construction and operation of the rail line to the repository. • Underground radionuclide contamination from past weapons testing at the Nevada Test Site. • Expansion of the rail system to include additional spurs for shared use (including the indirect impacts of community development) • Shipments of hazardous wastes and non-Yucca Mountain radioactive wastes. • Manufacturing of repository components such as TADS 	<p>10063, 10078, 10083, 10087, 10095</p> <p>65064, 65076</p>

Table F. Sabotage and Terrorism

Subissue	Comment Summary	Documents
Evaluation of sabotage and terrorism	<p>Commentors generally expressed the opinion that waste shipments and the repository could be prime targets for sabotage and/or terrorism.</p> <p>The commentors suggested that the supplemental EIS should evaluate the potential impacts from a terrorist attack during transportation and during repository operations under all packaging scenarios.</p> <p>Several commentors also suggested that the supplemental EIS present information on efforts already in place and planned for implementation aimed at mitigating the potential for sabotage or terrorism.</p> <p>One commentor suggested that the supplemental EIS not evaluate sabotage or terrorism because such analysis would be overly speculative.</p> <p>One commentor expressed the opinion that leaving spent nuclear fuel at reactors represented a better target for potential sabotage than either transport (harder to hit a moving target) or repository disposal (harder to hit an underground target).</p>	<p>10008, 10017, 10019, 10020, 10030, 10061, 10079, 10087, 10089, 10090</p> <p>60076</p> <p>65019, 65039, 65040, 65064, 65065, 65069</p>
Suggested actions to protect against sabotage and terrorism	<p>Commentors expressed a concern over the possibility of sabotage and/or terrorism. Some commentors suggested that the supplemental EIS consider methods to mitigate or lower the risk.</p> <p>One commentor expressed a concern over the possibility of sabotage/terrorism from airplanes. The commentor went on to suggest the area around Yucca Mountain should become a no-fly zone patrolled by drone aircraft and enforced by the U.S. Air Force.</p> <p>One commentor stated a lack of trust with local law enforcement agencies (specifically Clark County police) and that DOE should put safeguards in place to stop these agencies from conducting terrorist acts. The commentor cited that there could be terrorists within the law enforcement agencies.</p>	<p>10002, 10009, 10017</p> <p>65025, 65064</p>

	<p>Another commentor requested information on security measures to protect against terrorism.</p> <p>Another commentor suggested DOE consider the lessons learned from the U.S. Air Force's Peacekeeper Rail Garrison Preservation of Location Uncertainty program which considered ways to hide the location of missiles that were being transported on trains.</p>	
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Table G. General

Subissue	Comment Summary	Documents
Yucca Mountain	<p>Commentors provided statements in support of or in opposition to, Yucca Mountain as the site for a nuclear repository. The advocates for Yucca Mountain cited the history of the surrounding area (use for atomic weapon testing) the need for a national solution to the waste issue, and the history of safe transportation of spent fuel; several of the commentors stressed a need to move forward more quickly. Those opposed to Yucca Mountain cited transportation safety concerns, the potential for earthquakes and the potential for significant impacts to the Las Vegas area in the event of an accident at the repository, the absence of a license, the inappropriate reliance on engineered barriers, and the inability of the project meeting appropriate radiation standards for health.</p>	<p>10005, 10008, 10012, 10019, 10020, 10023, 10032, 10034, 10035, 10037, 10042, 10044, 10045, 10048, 10049, 10050, 10052, 10053, 10054, 10055, 10056, 10059, 10060, 10066, 10067, 10068, 10069, 10070, 10071, 10074, 10077, 10086, 10085, 10091, 10092, 10093</p> <p>60059, 60071, 60074, 60079, 60085, 60086</p> <p>65001, 65002, 65018, 65027, 65028, 65029, 65032, 65035, 65037, 65038, 65040, 65041, 65042, 65043, 65045, 65046, 65047, 65048, 65050, 65051, 65055, 65056, 65057, 65059, 65062, 65063, 65066, 65069, 65070, 65074, 65075, 65077, 65078</p>
Nuclear Power	<p>Commentors provided statements in support of, or in opposition to, nuclear power generation. The advocates for nuclear power cited nuclear power's efficiency, relative low generation costs, and the lack of greenhouse gases. Those opposed to nuclear power cited the inherent safety issues associated with the continued creation of spent nuclear fuel and the availability of alternative energy sources such as solar and hydrogen fuel cells.</p>	<p>10003, 10012, 10022, 10024, 10025, 10026, 10031, 10033, 10040, 10041, 10055, 10057, 10066, 10069, 10072, 10073</p> <p>65010, 65027, 65041, 65051, 65069, 65075</p>

	<p>One commentator called for the entire nuclear process to be taken away from politicians and be run only by people with the appropriate technical knowledge.</p> <p>One commentator called for the construction and operation of nuclear plants in Nevada counties citing its centralized location.</p> <p>Some commentators called for the immediate end to the nuclear power program with all waste being stored onsite.</p>	
Criticism of DOE	<p>Commentors specifically criticized the way the department has handled the project. Some commentors stated that mismanagement and lack of leadership within the department has led to unnecessary delays in the project. Another commentator stated that the department had mismanaged the handling of the media about the project. One comment suggested that recent "scandals" were further evidence that the project should be stopped.</p>	<p>10008, 10013, 10016, 10020, 10022, 10024, 10026, 10029, 10052</p> <p>60006, 60058</p> <p>65028, 65031, 65045, 65048, 65054, 65063, 65075</p>
Learn from Others	<p>One commentator suggested that DOE should carefully consider the experience of others. Specifically, the commentator mentioned the DOE Transportation Safeguards Office with respect to the transport of nuclear weapons.</p>	<p>65006</p>