SECTION 2
MAJOR ISSUES

2.0 MAJOR ISSUES

Several topics identified in the public comments on the Draft LANL SWEIS are of broad interest or concern, and may require a more detailed response than could be effectively presented in the side-by-side format in Section 3 of this Comment Response Document (CRD). These topics were characterized as major issues and are addressed in this section.

- Opposition to Nuclear Weapons and Pit Production
- National Environmental Policy Act (NEPA) Process
- Alternative Missions
- Modernization of the Nuclear Weapons Complex
- Water Resources
- Offsite Contamination
- Waste Management
- Water Use
- Compliance Order on Consent (Consent Order) and Environmental Restoration Activities
- Depleted Uranium and the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility
- Environmental Justice
- Comparison to Rocky Flats Plant
- Recommendations of the Defense Nuclear Facilities Safety Board

2.1 Opposition to Nuclear Weapons and Pit Production

Issue:

Commentors expressed opposition to nuclear weapons in general and pit production specifically, stating that nuclear weapons are unnecessary, immoral, unethical, or illegal, and should be eliminated. Commentors also expressed the opinion that pit production at LANL violates nonproliferation treaties, particularly the Treaty on the Non-Proliferation of Nuclear Weapons. Some commentors questioned the need for pit production because of the apparent long life of plutonium pits.

Response:

The National Nuclear Security Administration (NNSA) acknowledges that there is substantial opposition to the development and testing of nuclear weapons and their components. Since the 1940s, the President and the Congress have directed the U.S. Department of Energy (DOE) and its predecessor agencies to develop and produce the Nation's nuclear weapons and to ensure the safety and reliability of the nuclear weapons stockpile. Since the end of the Cold War, DOE has changed site missions and activities consistent with changing national security policies that reflect the new national security posture, including maintaining a smaller enduring stockpile.

However, even in the post-Cold War period, international dangers remain, and nuclear deterrence will continue to be an important element of national security policy for the foreseeable future.

In 1968, the President signed the Treaty on the Non-Proliferation of Nuclear Weapons, which the Congress ratified in 1970. The Treaty on the Non-Proliferation of Nuclear Weapons is a landmark international treaty designed to prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy, and to further the goal of achieving both nuclear and general disarmament. The United States has since become a signatory to several treaties with goals of reducing the size of nuclear weapons arsenals. Most recently, in 2002, the President signed the Treaty on Strategic Offensive Reductions. Through this treaty, the United States and Russia agreed to reduce their numbers of operationally deployed strategic nuclear warheads to 1,700 to 2,200 by the end of 2012. Although this treaty has not been ratified, the United States has been moving aggressively to reduce its nuclear weapons stockpile to meet this objective.

Along with its obligations to reduce its nuclear weapons stockpile and promote the nonproliferation of nuclear weapons to non-nuclear states, the United States must also ensure that its nuclear weapons stockpile remains safe, secure, and reliable. Chapter 1, Section 1.0, of the SWEIS outlines some of the steps taken to meet this objective, including the formation of NNSA. NNSA was created within DOE, in part, to enhance national security through the military application of nuclear energy and to maintain and enhance the safety, reliability, and performance of the U.S. nuclear weapons stockpile, including the ability to design, produce, and test in order to meet national security requirements. Responsibilities in these areas assigned to DOE were transferred to NNSA. NNSA has developed a comprehensive program of stockpile stewardship and management that maintains essential capabilities for stockpile safety and reliability. LANL is one of three national laboratories engaged in activities that are necessary for NNSA to meet its national security obligations. LANL's national security responsibilities define the purpose and need for NNSA action as described in Chapter 1, Section 1.2, of the SWEIS: to support NNSA's core mission as directed by the Congress and the President, which includes ensuring a safe and reliable nuclear stockpile. A cessation of these activities would be counter to national security policy as established by the Congress and the President. Therefore, as discussed in Chapter 3, Section 3.5, ending these activities at LANL is not considered in the SWEIS.

It is important to emphasize that the United States is not in violation of the Treaty on the Non-Proliferation of Nuclear Weapons or any other nonproliferation treaty to which it is a signatory. Stockpile stewardship capabilities at LANL are currently viewed by the United States as a means to further the Nation's nonproliferation objectives. Continued confidence in the Nation's nuclear stockpile capabilities is likely to remain important to future arms control negotiations as the size of the stockpile decreases. Pit production capabilities, including fabrication of new pits, modifying the internal features of existing pits, and recertifying or requalifying existing pits, are essential components of NNSA's stockpile stewardship mission. NNSA reviewed pit lifetime studies and has concluded that degradation of plutonium in a majority of nuclear weapons will not affect warhead reliability for a minimum of 85 years. NNSA plans to continue studying plutonium aging through surveillance and scientific evaluation. NNSA will annually reassess the status of plutonium in nuclear weapons as the weapons laboratories continue to evaluate new data and observations (NNSA 2006e). The analysis of a production rate of up to 80 pits per year in the LANL SWEIS is still valid because this production rate, if implemented, would give

NNSA operational flexibility. NNSA needs such flexibility to meet current national security needs for two reasons: First, even with longer pit lifetimes, as the stockpile ages, NNSA will need to replace pits in stockpiled warheads. Second, at significantly smaller stockpile levels than today, NNSA must anticipate that an adverse change in the geopolitical threat environment, or a technical problem with warheads in the operationally-deployed force, could require the United States to manufacture and deploy additional warheads on a relatively rapid schedule (NNSA 2006d, 2007a).

2.2 National Environmental Policy Act (NEPA) Process

Issue:

Commentors expressed a variety of concerns related to implementation of the NEPA process for the LANL SWEIS. Commentors felt that the scoping process was inadequate because a supplement to the 1999 LANL SWEIS was planned at the time of the Notice of Intent (NOI). Commentors requested public hearings in additional locations and more review time. Commentors expressed dissatisfaction with the timing of the public hearings with respect to Feast Days for some of the northern New Mexico Pueblos. Commentors also expressed the opinion that NNSA does not pay attention to comments received from the public.

In addition, commentors expressed frustration regarding their inability to access references, particularly on the Internet. Commentors stated that the SWEIS should not be prepared until a number of other studies or documents were finalized, including the Public Health Assessment: Los Alamos National Laboratory (draft) prepared by the U.S. Agency for Toxic Substances and Disease Registry; the LANL update of the seismic hazards analysis; the Performance Assessment and Composite Analysis for the TA-54 Material Disposal Area G; and the Complex Transformation Supplemental Programmatic Environmental Impact Statement (Complex Transformation SPEIS), which addresses the proposed continued transformation of the nuclear weapons complex.

Response:

NNSA considers NEPA implementation to be a vital and important part of its decisionmaking process. In accordance with CEQ regulations (Title 40 *Code of Federal Regulations* [CFR] Parts 1500 to 1508) and DOE's NEPA Implementing Procedures (10 CFR Part 1021), NNSA gives appropriate consideration to environmental values, as well as other factors such as mission assignment, technical viability, and cost, in its decisionmaking. Consistent with DOE's policy of preparing and updating site-wide environmental impacts statements for certain large multiple-facility sites, NNSA prepared the LANL SWEIS to assess the impacts of ongoing and proposed activities at LANL.

In implementing the NEPA process, NNSA provided reasonable opportunities for public input into preparation of the LANL SWEIS. These opportunities included a scoping period before the Draft SWEIS was prepared and a comment period following issuance of the Draft SWEIS. On January 5, 2005, NNSA published an NOI in the *Federal Register* (70 FR 807) announcing plans to prepare a supplement to the 1999 *Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico (1999 LANL SWEIS)*

(DOE 1999a). The NOI also invited comments on the scope of the Supplement to the *1999 LANL SWEIS* for a period of 54 days, and announced a public scoping meeting scheduled for January 19, 2005. In addition to the *Federal Register* announcement of the scoping meeting and the opportunity to submit scoping comments, NNSA published announcements in newspapers in northern New Mexico and Albuquerque. A summary of the scoping comments and a description of how they were addressed were included in Chapter 1 of the Draft LANL SWEIS. A recurring comment during the scoping period was that a SWEIS, rather than a supplement to the *1999 LANL SWEIS*, should be prepared. Thus, the decision to prepare a new SWEIS rather than a supplement was consistent with the sentiment expressed in the scoping comments. NNSA believes that the scoping comments apply equally to a supplement to the previous SWEIS or to a new SWEIS.

On July 7, 2006, NNSA published a notice in the *Federal Register* (71 FR 38639) announcing the availability of the Draft LANL SWEIS, the duration of the comment period, the location and timing of public hearings, and the various methods for submitting comments. NNSA's implementation of public participation activities for review of the Draft LANL SWEIS was consistent with past practices for other NEPA documents prepared for LANL. NNSA announced a 60-day comment period to provide sufficient time for interested parties to schedule their review of the Draft LANL SWEIS around other commitments, including Pueblo Feast Day events. In response to requests for additional review time, however, the comment period was extended by 15 days to a total review time of 75 days (71 FR 51810). As with previous LANL NEPA documents, the public hearings were scheduled at regional venues near LANL (Los Alamos, Española, and Santa Fe). For people who were unable to attend the hearings due to schedule conflicts or who could not travel to the hearing locations, NNSA provided a number of other ways to comment on the Draft SWEIS. In the July 7, 2006, *Federal Register* notice announcing the availability of the Draft SWEIS, in letters transmitting the document to interested parties, and in advertisements placed in Albuquerque, Santa Fe, Española, and Los Alamos newspapers, NNSA indicated that comments on the Draft SWEIS could be submitted by U.S. mail, e-mail, a toll-free phone line, and a toll-free fax line. NNSA repeated this information in its announcement of the 15-day extension to the comment period on the Draft SWEIS.

During the comment period, NNSA made the SWEIS references available in three DOE Public Reading Rooms located in Los Alamos, Santa Fe, and Albuquerque. As with other elements of the public comment process, this was consistent with past practices for other LANL NEPA documents. In response to multiple commentors, NNSA is evaluating the possibility of making the references available on the Internet. In this time of heightened concern about issues of security, however, placing information about LANL or other DOE sites on the Internet has to be considered carefully and each reference has to be scrutinized before it is posted.

Concerns were expressed about certain references used in the Draft LANL SWEIS. One such reference, the U.S. Agency for Toxic Substances and Disease Registry *Public Health Assessment: Los Alamos National Laboratory (LANL Public Health Assessment)*, had been issued as a draft for public review at the time it was cited in the Draft LANL SWEIS. As a draft, both the public and other government agencies provided comments on the document. Those comments were considered by the U.S. Agency for Toxic Substances and Disease Registry and addressed before the final *LANL Public Health Assessment* was issued in September 2006; however, the conclusions reflected in the draft report remain unchanged in the final

(ATSDR 2006). Other concerns were related to the seismic hazards analysis, which has been completed, and the TA-54 Area G performance assessment, which is undergoing a periodic update. Until the performance assessment update has been completely developed, thoroughly reviewed, and released, the existing document that it will eventually replace remains valid; therefore, it is entirely appropriate to use the current approved version of the document as a reference in the LANL SWEIS.

Information currently under development that is not available for use in the Final SWEIS will be considered as it becomes available and, in accordance with the NEPA process, the SWEIS impact analyses will be reviewed and supplemented as necessary in response to new information. Regardless of the conclusions of the LANL SWEIS, if new information has an impact on future activities, appropriate changes will be implemented. For example, the seismic hazards analysis update has been completed and issued. As discussed in the SWEIS, the results of that update are being evaluated with respect to the potential impacts on new and existing structures at LANL. If analysis of the new seismic hazards data indicates the need for a change in building design, that change will be made in the design of new buildings or in modifications to existing buildings. Existing LANL structures may be retrofitted and upgraded, as necessary and appropriate, or their operations may be limited to meet the new seismic standards.

The possibility of locating a modern pit facility at LANL was considered in the Draft LANL SWEIS, consistent with CEQ requirements to include reasonably foreseeable future actions in a discussion of cumulative impacts (40 CFR 1508.7). NNSA announced cancellation of the *Supplemental Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility* in the *Federal Register* on October 19, 2006, as part of its NOI (71 FR 61731) to prepare the *Supplement to the Stockpile Stewardship and Management Environmental Impact Statement – Complex 2030*, subsequently called the *Complex Transformation SPEIS.* Consequently, a modern pit facility is not included in the cumulative impacts discussion of this Final SWEIS. Instead, the potential impacts of implementing the actions being analyzed in the *Complex Transformation SPEIS* are addressed in Chapter 5, Section 5.13, of the SWEIS. Any changes identified in the *Complex Transformation SPEIS* are unlikely to affect LANL operations in the next few years.

NNSA considers every comment received by U.S. mail, e-mail, toll-free phone or fax line, or at the public hearings. Consistent with the purpose and intent of NEPA and the implementing regulations, public comments assist NNSA in determining the scope of the analysis to be included in a NEPA document and in improving the analysis and range of alternatives evaluated. Section 1.4 of this CRD presents the major changes in the SWEIS, including those made in response to public comments. Many of the public comments concerned the policies of the United States and the missions assigned to NNSA, and by extension, LANL, by the President and the Congress. As such, although they provide NNSA with knowledge of certain public opinions regarding LANL activities, those comments are outside the scope of alternatives evaluated in the LANL SWEIS. (See Section 2.1 of this CRD.) Section 3.0 of this CRD provides NNSA's response to each public comment.

2.3 Alternative Missions

Issue:

Commentors suggested changing LANL's mission of supporting stockpile stewardship activities to other, non-weapons-related missions. Examples of alternative missions suggested by commentors include development of renewable energy resources (solar, wind, and biomass); environmental cleanup technologies; solutions to global climate change; use of hydrogen fuel cells; and anti-terrorism and nonproliferation tools. Some commentors recommended addressing many of these alternative missions in the context of a "Greener Alternative."

Response:

As indicated in Chapter 1, Section 1.2, of the SWEIS, the purpose of the continued operation of LANL is to support NNSA's core mission as directed by the Congress and the President, which includes maintaining a safe and reliable nuclear weapon stockpile. A cessation of these activities would be counter to national security policy as established by the Congress and the President. Therefore, as discussed in Chapter 3, Section 3.5, of the SWEIS, ending these activities at LANL is not considered in the SWEIS.

NNSA believes that LANL's stockpile stewardship activities can and do co-exist with other activities that support national and international technological needs to help humankind. In the *1999 LANL SWEIS*, a number of non-weapons-related activities were incorporated into a "Greener Alternative" that emphasized work performed in support of basic science, waste minimization and treatment, dismantlement of nuclear weapons, nonproliferation, and other areas of national and international importance. As discussed in Section 3.5 of the SWEIS, however, NNSA is not evaluating a greener alternative because it does not support the nuclear weapons mission. Instead, NNSA incorporated important aspects of the Greener Alternative from the *1999 LANL SWEIS* into the No Action Alternative. The research areas identified by commentors and previously incorporated into the *1999 LANL SWEIS* Greener Alternative are part of current operations (described in Chapter 3, Section 3.1) that would continue regardless of which alternative is selected. For example, Sections 3.1.3.2 and 3.1.3.4 of the SWEIS respectively discuss activities at the Sigma Complex and Materials Sciences Laboratory that are related to energy, environment, industrial competitiveness, and strategic research. The following paragraphs describe a subset of research that is currently being performed by LANL scientists in several of the areas recommended by commentors.

Renewable energy. LANL scientists are researching hydrogen-based fuel cell and solar cell technologies, including collaborating with the State of New Mexico on a proposal to construct a large solar energy power plant.

Environmental technology. In environmental remediation, LANL scientists have studied the chemical and physical interactions of radioactive compounds, how they interact with the environment, and how best to manage them.

Global climate change. LANL staff is working on a number of initiatives to address pollution issues, including researching a technology to increase the combustion efficiency of gasoline,

diesel, and turbine engines and collaborating with international groups to understand how air pollution from cities undergoes chemical and physical changes. LANL scientists are also developing commercially viable technologies that will help to limit the release of carbon dioxide emissions linked to global warming and are modeling changes to the global oceans.

Anti-Terrorism and Nonproliferation. LANL scientists provide technical assessments to other government agencies regarding weapons of mass destruction. As identified in Chapter 3, Section 3.1.3.1, measurement technologies are used at the Chemistry and Metallurgy Research Building and other LANL facilities to train international inspection teams for the International Atomic Energy Agency. In addition, LANL scientists are developing detection technologies to help prevent weapons of mass destruction from being smuggled across the Nation's borders and to assist first responders with assessing a threat. For example, LANL scientists developed a detection system that provides direct analysis of clinical and environmental samples for use by first responders and medical personnel. While the primary objective is early screening of possible victims of a biological attack, this sensor system also could be adapted to environmental detection of toxins and selected pathogens and assessment of decontamination.

Biological and Biomedical Research. LANL scientists are working in a number of different areas including medical research initiatives, study of disease transmission, and defense against biological threat. Efforts include modeling the potential impact of a pandemic on the United States and tracking genetic codes for influenza strains worldwide. LANL scientists also are exploring the genomes of two nonlethal bacteria that are closely related to anthrax. This research will contribute significantly to studies of the means of transmission of such bacteria and their ability to cause disease. LANL scientists are also studying the molecular functions of human proteins to understand how proteins play a role in health and disease and to promote the development of new medicines.

2.4 Modernization of the Nuclear Weapons Complex

Issue:

Several different types of comments about modernizing the nuclear weapons complex were received. These comments included requests for NNSA to delay completion of the LANL SWEIS until the Complex Transformation SPEIS (DOE/EIS-0236-S4) is completed because the Complex Transformation SPEIS has a broader view of the need for and level of pit manufacturing. Comments also included requests to address environmental impacts from implementation of the Reliable Replacement Warhead (RRW) Program in the SWEIS because RRWs would be produced at TA-55 within the next 5 years. Commentors stated that (1) the purpose of the RRW Program is to enable the design and production of new-design nuclear weapons; (2) the higher pit production rate proposed in the Expanded Operations Alternative in the SWEIS is being used to establish a de facto modern pit facility at LANL without identifying and analyzing it as such; and (3) all references to the modern pit facility should be removed from the SWEIS because the Congress has repeatedly rejected funding for it.

Response:

DOE's NEPA Implementing Procedures require preparation of a SWEIS for certain large multiple-facility sites such as LANL, followed by an evaluation at least every 5 years (10 CFR 1021.330(c) and (d)). As described in Chapter 1, Section 1.0, of the SWEIS, in early 2004, NNSA undertook the required 5-year review of the *1999 LANL SWEIS* by initiating preparation of a Supplement Analysis. In late 2004 and early 2005, NNSA determined there were significant new changes and circumstances in LANL operations and the environment that warranted preparation of a supplement to the *1999 LANL SWEIS* (as discussed in Section 2.2 of this CRD, consistent with public scoping comments, NNSA later decided to prepare a new LANL SWEIS). The Draft LANL SWEIS was issued before NNSA finalized and issued its NOI to prepare the *Complex Transformation SPEIS* (71 FR 61731). The LANL SWEIS focuses on continuing site-specific activities and new projects at LANL that may be initiated within about the next 5 years. The *Draft Complex Transformation SPEIS*, addresses modernization activities and consolidation of nuclear materials activities over a longer timeframe and across the entire weapons complex. As such, the timing of and the analyses presented in the *LANL SWEIS* are largely independent of the *Complex Transformation SPEIS*. An exception is the nuclear facility portion of the Chemical and Metallurgy Research Replacement Project; NNSA is reconsidering whether to construct this facility based on evaluations in the *Complex Transformation SPEIS*.

The proposed pit production level of up to 80 per year is unrelated to a modern pit facility. The decision to re-establish a limited pit fabrication capability at LANL was announced in the Record of Decision (61 FR 68014) following the *Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* (DOE/EIS-0236) (DOE 1996). This programmatic EIS analyzed an 80-pit-per-year maximum production level. Pit production is needed now to protect national security options with regard to a nuclear deterrent and to repair or replace existing stockpile components. Supporting these needs with up to an 80-pits-per-year production level was evaluated in both the *1999 LANL SWEIS* and this LANL SWEIS. The *Complex Transformation SPEIS* evaluates a consolidated plutonium center and a consolidated nuclear production center with baseline production capacities of 125 pits per year (DOE 2007). Once the *Complex Transformation SPEIS* alternatives have been evaluated, NNSA will determine whether subsequent NEPA documentation such as a supplement to the LANL SWEIS is required. Therefore, it is not necessary to delay completion of the LANL SWEIS to incorporate information from the *Complex Transformation SPEIS*. Chapter 1, Section 1.0, of the SWEIS was revised to discuss the *Complex Transformation SPEIS*, including its relevance to LANL and the SWEIS. Chapter 5, Section 5.13, was revised to incorporate the impacts from the *Draft Complex Transformation SPEIS* into the cumulative impacts analysis in the SWEIS.

The alternatives analyzed in the LANL SWEIS are independent of any decision to produce an RRW. Capabilities such as production of plutonium components are required regardless of such a decision. If an RRW is approved by the President and funded by the Congress as part of the national strategy for providing a nuclear deterrent, it would enable a shift to production that requires fewer hazardous operations. The environmental impacts analyzed in the LANL SWEIS are based on the existing stockpile stewardship program and corresponding life extension programs. Since the RRW design is expected to reduce the use of radioactive and hazardous materials, analysis of the current stockpile should reasonably bound the potential impacts of the RRW.

When NNSA announced its intent to prepare a supplement to the *Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* in October 2006, it also announced cancellation of plans for a modern pit facility. Consequently, the impacts of a modern pit facility were not included in the SWEIS.

2.5 Water Resources

Issue:

Commentors expressed concerns about the impacts of LANL operations on groundwater in the regional aquifer and surface water, including the Rio Grande, and consequently, the quality of the water for local and downstream users. The following concerns were expressed by commentors:

1. *Poor well construction, well completion, and sampling methods may affect water quality monitoring results.*

2. *LANL may not have the required monitoring well network for compliance with the Resource Conservation and Recovery Act (RCRA), DOE Orders, and the March 2005 Consent Order.*

3. *Hexavalent chromium, neptunium-237, plutonium-239, plutonium-240, and strontium-90 may have been detected in the regional groundwater.*

4. *Polychlorinated biphenyls (PCBs) have been detected in the Rio Grande.*

5. *LANL does not use the most recent and restrictive maximum concentration limit for americium and plutonium in groundwater (0.15 picocuries per liter) adopted by the State of Colorado.*

6. *Water levels in the regional aquifer continue to drop.*

Response:

1. *Poor well construction, well completion, and sampling methods may affect water quality monitoring results.*

Groundwater monitoring has been performed at numerous locations within and around LANL for many decades. Monitoring locations include natural springs, drinking water supply wells, shallow monitoring wells, intermediate-depth monitoring wells, and a variety of regional aquifer monitoring well types. The information presented in the SWEIS relies on the best data available, primarily data from the types of wells and screens that have high-quality results. Note that in Appendix F, Table F–1, 11 different data sets are presented for groundwater. Only one of the data sets, Number 9, comes from wells that are the subject of the analysis of drilling fluids impacts.

Some of the groundwater data, particularly those associated with certain multi-screen Hydrogeologic Workplan characterization wells constructed after 1999, are being reassessed due to potential residual drilling fluid effects. The drilling fluid effects are quantitatively assessed in

the *Well-Screen Analysis Report* (LANL 2005c). As described in this report, about half (52 percent) of the well screens evaluated produce water quality samples that are not significantly impacted by residual drilling fluids. For those well screens that have been impacted by residual drilling fluids, LANL has initiated a program to better evaluate the wells and to rehabilitate the R-Wells that may be producing suspect groundwater monitoring results. This program is described in the *Work Plan for R-Well Rehabilitation and Replacement* (LANL 2006e). A pilot study has been conducted and results are being used to develop a proposed course of action for approval by the New Mexico Environment Department. As well quality issues are clarified and resolved through additional sampling, well rehabilitation, or well replacement, the set of groundwater data will increase in size and improve in quality to support ongoing monitoring, investigations, and decisionmaking.

Well screen depths are selected in consultation with the New Mexico Environment Department. In some cases, well screens are purposefully set in low-permeability strata to collect information on the hydrologic properties of the confining layers. In other cases, water levels have changed over time, and resulted in well screens that are now partially above the water table.

Under normal aquifer conditions, the Westbay System allows groundwater sampling at an in-situ pressure without purging before a sample is collected. This system allows samples to be collected from multiple depths within the same well. As described in the *Work Plan for R-Well Rehabilitation and Replacement* (LANL 2006e), no acceptable sampling system currently exists as an alternative to Westbay for situations where more than two screens per well are needed for the monitoring system. Therefore, for many wells, LANL will opt for conversion of wells with three or more screens to single- or dual-screen completions by plugging and abandoning some of the deeper screens, taking into consideration the technical needs for monitoring and characterization. This option will allow purging of stagnant water from the well before sampling.

2. *LANL may not have the required monitoring well network for compliance with RCRA, DOE Orders, and the March 2005 Consent Order.*

LANL is performing monitoring of all wells required by the New Mexico Environment Department Consent Order. This monitoring is conducted in accordance with a New Mexico Environment Department-approved monitoring plan (*Interim Facility-Wide Groundwater Monitoring Plan*) (LANL 2006d). As periodic watershed monitoring continues, LANL, in consultation with the New Mexico Environment Department, will continue a phased approach to determining which wells are needed and in what locations to satisfy long-term monitoring needs. The process is established by and in compliance with the Consent Order.

3. *Hexavalent chromium, neptunium-237, plutonium-239, plutonium-240, and strontium-90 may have been detected in the regional groundwater.*

Hexavalent chromium has been found in the regional aquifer; neptunium, plutonium-239, plutonium-240, and strontium-90 have not been found. It is important to distinguish between detection of contaminants in groundwater and the values used for analysis in the SWEIS. The LANL environmental surveillance program uses statistical criteria to determine whether a particular radioisotope is actually detected in a sample. For a radioisotope to be detected, the

sample measurement (the number of radioactive emissions counted in a given time period by a detector) must be equal to or greater than the minimum detectable activity and also must be equal to or greater than three times the total propagated uncertainty, which accounts for both the measurement instrumentation uncertainty as well as the sample background uncertainty. These criteria, which have been used for groundwater, sediment, surface water, and soil from 2001 through 2005, provide a high degree of confidence (99.7 percent) that a measurement result classified as detected is not simply the result of random fluctuation in background radiation level or detector sensitivity. The number of detected measurements for each analyte is reported in the annual environmental surveillance reports (http://www.lanl.gov/environment/all/esr.shtml). For purposes of analyses in the SWEIS, a different method was used to select environmental sample results for analysis. This method provides conservative estimates for use in health impacts assessments in Appendix C of the SWEIS and allows comparison with the environmental surveillance data presented in the *1999 LANL SWEIS* (DOE/EIS-0238), which used a similar statistical approach to select usable measurements. A sample result is considered a usable measurement, if it is greater than zero and the detected activity in the sample exceeds the minimum detectable activity of the analytical method plus two standard deviations. A usable measurement for SWEIS purposes does not indicate that the analyte actually exists in the sample at a level greater than background, but only that the measurement meets criteria used in the analysis.

Appendix F of the SWEIS describes the results of monitoring for contamination of environmental media around LANL. Contamination detected in these samples reflects worldwide fallout of radioactive particles from nuclear weapons testing; nuclear accidents such as Chernobyl; releases from industrial, commercial, medical, and household uses of chemicals and radionuclides; and releases from decades of activities at LANL. It is true that some contaminants are present onsite at levels above applicable standards and guidelines. Elevated levels are investigated to confirm the validity of the results, determine the source and extent of the contamination, and evaluate needed control and cleanup technologies. Chapter 4, Section 4.3, and Appendix F in the Final SWEIS were updated to include data from *Environmental Surveillance at LANL in 2005* (LANL 2006g) and additional discussion and interpretation of the monitoring results.

The Draft SWEIS labeled many laboratory results, including some neptunium results, as detections. These sample results did not meet the criteria for being detections as discussed above, but were usable measurements for SWEIS purposes. Revisions in Appendix F were made to distinguish between detections and usable measurements. Although these results are not true detections, they were included in the SWEIS Appendix F evaluations to increase the conservatism of these SWEIS evaluations. Neptunium-237 is not present in any samples from the Los Alamos County water supply wells. Plutonium-239, plutonium-240, and strontium-90 were detected in samples from these wells taken on only one or two of the numerous dates and were not repeated by follow-up sampling, and therefore indicate an error by the analytical laboratory which is typical for a small percentage of samples. This conclusion was confirmed by reanalysis of numerous samples and contradictory results from field and laboratory duplicate samples. These conclusions also apply to the Santa Fe water supply well samples.

As described in Chapter 4, Section 4.3.2, of the Final SWEIS, in 2005 chromium concentrations between 375 and 404 parts per billion were detected in Well R-28 in the regional aquifer below Mortandad Canyon. Additional sampling in 2006 indicates that chromium contamination is present in the regional aquifer in a limited area beneath Sandia and Mortandad Canyons and in perched groundwater beneath Mortandad Canyon. Chromium contamination was not detected in water supply wells. In recognition of these results, LANL prepared an *Interim Measures Work Plan for Chromium Contamination in Groundwater* (LANL 2006a). The goals of the Work Plan are:

- Determine the primary sources of chromium contamination and the nature of operations associated with the releases;
- Characterize the present-day spatial distribution of chromium and related constituents;
- Collect data to evaluate the geochemical and physical/hydrologic processes that govern chromium transport; and
- Collect and evaluate data to help guide subsequent investigations and remedy selection.

To accomplish these goals, Work Plan activities include:

- Conducting quarterly sampling of selected regional aquifer and intermediate groundwater wells;
- Investigating surface water and alluvial groundwater loss in Sandia Canyon;
- Installing six core holes in lower Sandia Canyon;
- Installing five alluvial wells in lower Sandia Canyon;
- Determining chromium distributions in the upper vadose zone from archival and new cores collected from Los Alamos, Sandia, and Mortandad Canyons;
- Rehabilitating well R-12 in lower Sandia Canyon;
- Refining the understanding of background concentrations and speciation of chromium in groundwater; and
- Collecting and synthesizing data and information to support conceptual model development and remedy selection.

These activities will be summarized in an investigation report that will provide the basis for follow-on work. Chapter 4, Section 4.3.2, and Appendix F of the SWEIS were updated to reflect the latest information on the chromium contamination.

4. PCBs have been detected in the Rio Grande.

On January 2, 2006, the New Mexico Environment Department issued a fish consumption advisory for PCB-contaminated fish in the Abiquiu and Cochiti Reservoirs, as well as for parts of the Rio Grande from Frijoles Canyon to Pojoaque Creek, citing the EPA do-not-eat guidance

level (NMED 2006). Despite the detection of PCBs in stormwater runoff within the LANL site boundaries, available data show no discernible impacts on PCBs concentrations in the Rio Grande. Three independent types of measurements show that PCBs concentrations downstream of LANL to Cochiti Reservoir are indistinguishable from concentrations upstream of LANL. Mean total PCBs concentrations in fish from the Abiquiu Reservoir are statistically similar to mean total PCBs concentrations in fish from the Cochiti Reservoir. The statistical similarity in PCBs upstream and downstream of LANL also exists for dissolved water concentrations. Additional sampling of the Rio Grande surface water by the New Mexico Environment Department and LANL shows that concentrations of PCBs are similar upstream and downstream of LANL. These results indicate that there are sources of PCBs other than LANL that contribute to contamination of the Rio Grande. A preliminary analysis indicates that PCB concentrations greater than 0.1 nanogram per liter can be ascribed to background fallout levels of PCBs. This is within the magnitude of some values measured in the Rio Grande water column (LANL 2006g). The LANL contractor continues to monitor PCB contaminants in the canyons as part of its environmental surveillance activities and would address any situations determined to be an imminent hazard to the public or environment.

5. *LANL does not use the most recent and restrictive maximum concentration limit for americium and plutonium in groundwater (0.15 picocuries per liter) adopted by the State of Colorado.*

The Colorado standards have not been adopted by the U.S. Environmental Protection Agency (EPA) or the State of New Mexico. EPA's drinking water regulations specify a 15-picocurie-per-liter limit for alpha-emitting radionuclides and a 4-millirem-per-year total dose limit for beta- and photon-emitting radionuclides in drinking water (40 CFR 141.66). New Mexico has adopted the EPA drinking water standards (20.7.10.100 NMAC). DOE Order 5400.5, "Radiation Protection of the Public and Environment," prescribes that protection of drinking water will adhere to EPA's 4-millirem per year dose limit and lists specific values for each isotope. The 4-millirem per year equivalent values are 1.6 picocuries per liter for plutonium-238, 1.2 picocuries per liter for plutonium-239 and plutonium-240, and 1.2 picocuries per liter for americium-241. These activities were derived using procedures specified by the International Commission on Radiological Protection.

6. *Water levels in the regional aquifer continue to drop.*

As described in Chapter 4, Section 4.3.2, of the SWEIS, the water table has been dropping recently at a rate of 1 to 2 feet (0.3 to 0.6 meters) per year. As described in Section 4.8.2.3, from 1999 to 2005, LANL water use decreased from 453.1 to 359.3 million gallons per year, while Los Alamos County water use increased from 880.3 to 1,033.9 million gallons per year. Full implementation of the Expanded Operations Alternative would result in the largest water use by LANL, but it would not exceed DOE's water rights and overall use would remain within the Los Alamos County-managed water rights. Los Alamos County is working to lessen its dependence on the regional groundwater aquifer and is studying the possible use of its San Juan-Chama surface water allotment. Use of the San Juan-Chama allotment would likely reduce groundwater withdrawals, which could stabilize water levels in the regional aquifer.

A reduction in water levels in the regional aquifer would not necessarily correlate to a decrease in water quality. Many other factors influence water quality, including aquifer base flow and recharge rates, the volume of contaminated water entering the aquifer, the concentration of contaminants entering the aquifer, and the degree of mixing of contaminated and clean water in the water supply wells. In addition, groundwater treatment can reduce concentrations of contaminants in the aquifer, and treatment of potable water can remove contaminants, rendering the water safe to drink.

In a few cases (for example, chromium), contamination is present in the regional aquifer that could endanger the water supply. LANL and the New Mexico Environment Department are working to evaluate the source of the contamination, the potential for future increases in contamination, and the actions necessary to alleviate any danger to public health.

2.6 Offsite Contamination

Issue:

Commentors expressed concern about offsite contamination from past, present, and proposed LANL operations. Some commentors were concerned that increased activities would lead to new contamination. They questioned increasing pit production when LANL had not controlled releases in the past. Other commentors stated concerns that contaminants could appear outside LANL boundaries and affect residents of nearby communities or those living downwind or downriver from LANL. Specific comments addressed the New Mexico Environment Department report of a finding of elevated americium-241 in a fruit sample from northern New Mexico. Other comments were related to potential contamination in the Rio Grande in light of the possibility that the City of Albuquerque will at some time draw drinking water from the river. Some commentors also stated that use of a 50-mile radius to assess environmental impacts in the SWEIS is unjustified, arbitrary, and capricious.

Response:

Many activities and operations at LANL use or produce liquids, solids, and gases that may contain nonradioactive hazardous or radioactive materials. Experiments and mission activities result in the release of some materials as airborne emissions and liquid discharges. These releases have the potential to affect people, air, water, plants, or animals by one or more pathways such as inhaling contaminants or coming into close proximity or contact with hazardous materials. It is possible, through facility design or modification and through emission and effluent treatment, to minimize these releases.

A number of Federal laws have been enacted to protect human health and the environment. Under some of these laws, certain environmental requirements are delegated to state authorities for enforcement and implementation. In addition, state legislatures have adopted laws to protect human health and safety and the environment. It is NNSA policy to conduct operations in a manner that ensures the protection of public health and safety and the environment through compliance with applicable Federal, state, and local laws and regulations, DOE Orders, and other requirements. LANL operations are subject to all of these requirements. Chapter 6 of the SWEIS describes the environmental laws and regulations that apply to LANL operations. As

specified by the terms of its air quality permit and effluent discharge permits, LANL demonstrates compliance through environmental monitoring and reporting. Chapter 4 describes the current environment and presents recent data for resource areas with annually measurable parameters that show LANL's compliance status with respect to regulations and permits. Compliance status is based on data contained in the publicly available annual environmental surveillance reports that are required for DOE sites.

Some LANL operations may result in the release of radioactive materials to the air through a stack or other forced air release point (called point sources). Limits or requirements for these emissions are set forth in the Clean Air Act, specifically the National Emissions Standards for Hazardous Air Pollutants for DOE facilities. Under these regulations, radioactive air emissions from LANL must be controlled to ensure that no member of the public receives an effective dose equivalent of 10 millirem per year. The concentration of radionuclides from each point-source release is measured or estimated based on knowledge of the materials used and the activities performed. If an estimate shows that emissions from a point source may result in a member of the public receiving as much as 0.1 millirem in a year, the point source must be sampled. During 2005, 28 point sources were sampled and monitored. NNSA also operates an ambient-air-sampling network, AIRNET, which measures environmental levels of airborne radionuclides that may be released from LANL (LANL 2006g). AIRNET monitoring stations are located at regional and Pueblo sites, at the LANL perimeter, near TA-54, and at other sites within LANL. The annual ambient air concentrations calculated from AIRNET sample measurements for publicly accessible locations are compared to environmental compliance standards (10 millirem equivalent concentration). The 2005 dose to the hypothetical maximally exposed individual was calculated to be 6.5 millirem, below the 10-millirem per year limit for the air pathway.

Impacts on surface water can be caused by industrial outfalls, stormwater runoff, dredge and fill activities, or sediment transport. LANL has one sanitary outfall and 20 industrial outfalls; effluents from LANL facilities are discharged in accordance with a National Pollutant Discharge Elimination System permit that establishes limits on the volume and quality of the discharge. These outfalls are sampled weekly, monthly, or quarterly, as specified in the permit, to analyze effluents for compliance with permit levels. Over the past 5 years, LANL has maintained an average rate of compliance with industrial permit conditions of 99.75 percent. LANL also had a 93 percent compliance rate with National Pollutant Discharge Elimination System stormwater requirements at its permitted construction sites (LANL 2006g).

Contamination in Foodstuffs

Because ingestion of foodstuffs constitutes an important pathway by which radionuclides and other contaminants can be transferred to humans, a wide variety of domestically produced edible vegetables, fruits, grains, and animal products is sampled from the area surrounding LANL and analyzed for a variety of radionuclides. These samples are used to compare the levels of radioactive and nonradioactive contaminants in foodstuffs at onsite and perimeter locations to regional levels, to determine trends over time, and to estimate the radiation doses and chemical exposures to individuals who consume them. According to the analyses discussed in Appendix C of the SWEIS, the dose to a hypothetical offsite resident whose diet consists entirely of foodstuffs and game harvested locally around LANL is about 2.7 millirem per year in addition

to the dose from air emissions of about 6.5 millirem. This dose can be compared to the approximately 400 millirem per year that a LANL resident would receive from all sources of background radiation.

The New Mexico Environment Department also collects and analyzes foodstuff samples as part of its surveillance program. In May 2006, the New Mexico Environment Department reported detecting americium in a single fruit sample collected in Dixon, New Mexico, one of the sites where LANL collects regional samples. LANL scientists evaluated New Mexico Environment Department data and concluded that this was likely a "false positive." Americium is a heavy radioactive element that is found as a contaminant in the plutonium used for research and pit fabrication and is one of the radionuclides for which LANL routinely monitors. Low concentrations of americium are found throughout the environment, mainly as a result of past releases to the atmosphere from aboveground nuclear weapons tests.

Scientists who perform sensitive analyses of radionuclide concentrations in environmental media use blanks (media free of the contaminant) to establish a specific instrument reading (for example, the number of radioactive emissions detected from a sample in a certain period) to represent a "positive" result. That instrument reading or measured value is selected with full knowledge that, for some small fraction of analyses, the value may be exceeded solely due to random variation, even though no radioactive material is present above the background level (thus the term "false positive"). However, any analytical result that exceeds the predetermined "positive" value is always examined closely to determine whether there is any other evidence to suggest that it reflects a real increase in the environmental radioactivity levels. The presence of another radionuclide above its respective detection limit, positive samples from other foodstuffs, and elevated levels in environmental media (air, soil, water) are examples of information that would be used to assess the significance of a single analytical result that barely exceeds its detection limit. LANL scientists reviewed the data from the single fruit sample along with other available data in this manner and judged it to be false positive.

LANL Impact on the Rio Grande

As many commentors noted, the city of Albuquerque is implementing a strategy to transition from sole reliance on the regional aquifer to renewable drinking water supplies, including San Juan water. This water would be channeled into the Rio Grande Basin and stored at the Heron Reservoir. Stored water from the reservoir makes its way into the Rio Chama and then to the Rio Grande. The Albuquerque water utility has monitored the Rio Grande by collecting and testing samples at various sites from the Heron Reservoir along the river to Albuquerque for metals, minerals, nutrients, organic substances, and radionuclides (City of Albuquerque 2006). The river water meets EPA drinking water standards for all of these substances (specifically, the levels of radionuclides are far below the EPA standards).

LANL's *2005 Environmental Surveillance Report* (LANL 2006g) describes impacts to the Rio Grande from LANL operations. Waters and sediments along the Rio Grande have shown relatively small impacts from LANL operations according to three separate risk assessments performed in the 2000-2002 timeframe. Results for 2005 were consistent with those findings. All base flow samples from the Rio Grande had pollutant concentrations below drinking water standards and standards for the protection of aquatic life, wildlife habitat, and irrigation.

Radioactivity in these samples was low. None of the radionuclides commonly associated with LANL operations was detected, except uranium. Uranium concentrations (0.5 to 2 milligrams per liter) were consistent with naturally occurring levels in regional waters and were well below the Federal drinking water standard of 30 milligrams per liter.

The SWEIS uses the data from the *2005 Environmental Surveillance Report* (LANL 2006g) to calculate the radiation dose to a hypothetical member of the public who consumed only water from the Rio Grande River. The analysis uses the 95 percentile upper confidence limit values of measured radioisotope concentrations, which would be expected to overestimate the amount ingested. The calculated annual drinking water radiation dose from radioisotopes measured at locations upstream and downstream from LANL in the Rio Grande River were comparable, and all were less than 10 percent of the EPA drinking water limit of 4 millirem per year.[1] The specific radioisotopes present in the Rio Grande both upstream and downstream of LANL are naturally occurring and are not indicative of any releases from LANL.

In 2005, radionuclide concentrations in bottom sediments from the Cochiti Reservoir, the first reservoir on the Rio Grande downstream from LANL, were lower than in other post-Cerro Grande Fire years. Plutonium-239, plutonium-240, and cesium-137 concentrations showed increases for 1 to 2 years following the Cerro Grande Fire, but concentrations in 2005 were comparable with pre-fire levels. Plutonium-239 and plutonium-240 concentrations in 2005 were near or below analytical detection limits. Metals concentrations in the bottom sediments were not sufficiently different from background concentrations to warrant discussion. The residual high-explosives organic compound 2, 4-dinitrotoluene was detected in Cochiti Reservoir bottom sediments at an estimated concentration of 2.8 milligrams per kilogram, considerably below the EPA Region VI soil screening level of 120 milligrams per kilogram. This compound was not detected in earlier analyses.

Use of 50-Mile Radius Region of Influence

NNSA disagrees with the statement that the 50-mile radius region of influence is arbitrary and capricious. A 50-mile radius is commonly used in EISs because this distance has been shown to encompass the significant impacts to the public. Samples measured at varying distances from emissions sources show that the concentration of radionuclides decreases with the distance from the source. Appendix C, Evaluation of Human Health Impacts from Normal Operations, was revised to include an analysis that shows how emissions from the Los Alamos Neutron Science Center (LANSCE) decrease dramatically with distance. The 50-mile radius is accepted by regulatory agencies such as the Nuclear Regulatory Commission and DOE because, at this distance, the concentration of airborne radionuclides and toxic chemicals is very small.

The accident calculation methodology used in the SWEIS estimates the total population dose (sum of the individual doses to all members of the affected population) within a 50-mile radius of LANL. The accident that would result in the largest population dose for a 50-mile radius region of influence, the TA-54 waste storage dome wildfire, also was analyzed using a 100-mile

[1] *The EPA Safe Drinking Water Act limit of 4 millirem per year is based only on beta- and photon-emitters. The analysis performed to evaluate the impact from drinking Rio Grande water is conservative because it also includes the dose from alpha-emitters.*

radius region of influence. The analysis shows that extending the region of influence out another 50 miles increases the affected population by 300 percent, while the population dose increases by only 13 percent. This shows that the radiation dose to individuals in the 50- to 100-mile range (which includes the City of Albuquerque) is very small relative to the dose to individuals within 50 miles of LANL because the sum of all of the individual doses within 100 miles is only a little larger than the sum of the individual doses within 50 miles. This comparison has been added to Appendix D, Evaluation of Human Health Impacts from Facility Accidents.

2.7 Waste Management

Issue:

Commentors expressed concerns about the large quantities of wastes projected in the SWEIS, particularly for the Expanded Operations Alternative. Commentors questioned the continued generation of waste, particularly when significant legacy waste remains onsite and remediation work is incomplete; the location where ultimate disposition of the waste would occur; and the impacts associated with waste storage and disposal, including the impacts from potential accidents. Commentors also questioned the continued practice of onsite disposal of low-level radioactive waste in unlined trenches, citing impacts on water resources and their general opposition to onsite disposal.

Response:

Although LANL has instituted a pollution prevention and waste minimization program (see Chapter 4, Section 4.9, of the SWEIS), operation of LANL does generate radioactive and other wastes. Wastes are managed in a manner that minimizes environmental and human health impacts and complies with regulatory requirements and DOE procedures.

Waste generation projected under the No Action Alternative and the Reduced Operations Alternative is based on projected volumes from the *1999 LANL SWEIS* (DOE 1999a) that have been updated using new information and analyses of past performance (see Chapter 5, Section 5.9, of the SWEIS). Estimates of wastes generated from expanded pit production, new facility construction, facility decontamination, decommissioning and demolition, and environmental restoration are responsible for the higher volumes of wastes projected under the Expanded Operation Alternative. The largest increases in projected waste generation would be associated with decontamination, decommissioning, demolition, and cleanup efforts, including those associated with compliance with the Consent Order, in particular implementation of the removal option evaluated in Appendix I of the SWEIS. These projections are conservative (tend to overestimate the volume of waste that could be generated), and are subject to great uncertainty. Actual volumes would depend on a number of factors including cleanup decisions made by the New Mexico Environment Department and NNSA and effectiveness of volume reduction activities. Waste volumes are also affected by the proposed expansion of plutonium pit production. In addition to showing the collective impacts of the Expanded Operations Alternative in the SWEIS, the impacts on waste generation of expanded pit production and implementing the Consent Order are shown separately. This makes it possible to compare the impacts of the alternatives separate from other activities.

Based on these conservative projections, the environmental impacts associated with the generation and storage of radioactive and chemical wastes are evaluated in the SWEIS. The SWEIS also analyzes the impacts of shipping all solid, chemical, and radioactive wastes for disposal at offsite facilities, as well as the impacts of transport of all low-level and mixed low-level radioactive wastes for onsite disposal (see Appendix K of the SWEIS). (Note: Disposal of mixed low-level radioactive waste at LANL is neither authorized nor proposed, but was evaluated for NEPA purposes.) The analysis of impacts from potential accidents in the SWEIS includes seven radiological accident scenarios involving waste transportation and storage. The wildfire accident analysis includes two waste management facilities (see Chapter 5, Section 5.12, and Appendix D, Section D.5, of the SWEIS).

Wastes will be safely stored until they can be safely shipped to facilities that are designed, operated, and permitted to accept them. Programmatic decisions regarding the disposal of wastes generated across the DOE complex were made through the Records of Decision following the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200) (DOE 1997a). In accordance with these Records of Decision, mixed low-level radioactive waste and solid and chemical wastes generated at LANL are shipped to offsite treatment or disposal facilities. Disposal capacity is adequate for these wastes. Low-level radioactive waste may be disposed of at onsite, commercial, or other DOE disposal facilities; transuranic waste is disposed of at the Waste Isolation Pilot Plant (WIPP).

Low-level radioactive waste is currently disposed of at LANL in Area G within TA-54. The impacts of onsite low-level radioactive waste disposal were considered in the previously discussed programmatic EIS, as well as in the Area G Performance Assessment and Composite Analysis required by DOE Order 435.1 (discussed later in this section). Because of space and regulatory considerations, low-level waste disposal operations will be expanded into Zones 4 and 6 of TA-54; and other waste management activities at Area G will be transferred to other LANL locations. The environmental impacts of expanding low-level radioactive waste disposal operations into Zones 4 and 6 were evaluated in the *1999 LANL SWEIS*. The environmental impacts from waste management transition activities are addressed in Appendix H, Section H.3, of the SWEIS.

Sufficient capacity exists at LANL and at offsite facilities to dispose of all of the projected low-level radioactive waste. Decisions about the extent to which onsite or offsite disposal capacity will be used will depend on the quantities of wastes that are actually generated, which will be governed by future decisions by NNSA, the State of New Mexico, and other factors.

Future use of lined rather than unlined pits for low-level radioactive waste disposal at LANL is being evaluated as part of the required review and update of the Area G Performance Assessment and Composite Analysis. The SWEIS considers the impacts from the use of unlined pits as its No Action Alternative baseline; this impact analysis therefore bounds possible actions with lesser potential environmental consequences, such as the use of alternate pit construction methods and operational techniques.

Legacy transuranic waste is stored in aboveground and belowground configurations in TA-54. Most of the aboveground transuranic waste was originally stored below grade, but was retrieved

so that it could be readily inspected as required by the State of New Mexico hazardous waste regulations. NNSA is working to prepare all stored and newly generated transuranic waste for shipment to WIPP. LANL has instituted a program to give the highest priority to shipping transuranic waste to WIPP for disposal; continued aboveground transuranic waste storage at LANL presents the greatest health and environmental risk in the event of an accident. Recent process improvements have increased the annual volumes of transuranic waste shipped from LANL to WIPP, including 684 cubic yards (523 cubic meters) in FY 2006 and 823 cubic yards (629 cubic meters) in 2007 (see Chapter 4, Section 4.9.4). NNSA is proposing to further increase shipment rates (see Appendix H, Section H.3.2.2.3). The amount of transuranic waste at LANL is therefore expected to decrease.

Sufficient capacity exists at WIPP to dispose of all of the legacy waste currently stored at LANL as well as all of the newly generated waste projected from LANL operations. However, the transuranic waste volume projected from postulated removal of all of the material disposal areas at LANL could increase the total volume beyond that assumed to come from LANL in the *Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement* (DOE/EIS-0026-S-2) (DOE 1997b). Decisions about disposal of this transuranic waste, if generated, would be made within the context of the needs of the entire DOE complex. If generated, this transuranic waste would be prepared and safely stored until disposal capacity becomes available.

The LANL management and operating contractor will continue to manage some wastes (including new wastes) that cannot be accepted at WIPP or other operating facilities, including DOE sealed sources containing transuranic isotopes in concentrations exceeding 100 nanocuries per gram that are not defense wastes, as well as commercial sealed sources containing radionuclides in concentrations exceeding the Class C limits in 10 CFR Part 61 (see Appendix J, Section J.3). These wastes will be safely stored until they can be disposed of. DOE has issued an NOI to prepare an *Environmental Impact Statement for the Disposal of Greater-Than-Class-C Low-Level Radioactive Waste* (72 FR 40135) to address disposal of Greater-Than-Class-C waste and DOE waste having similar characteristics. Several options for disposing of this waste are being considered, including disposal at LANL.

2.8 Water Use

Issue:

Commentors expressed concerns that implementation of the Expanded Operations Alternative would use too much water and could exceed available water rights.

Response:

NNSA takes its resource stewardship and conservation responsibilities seriously and continues to work with Los Alamos County to implement water conservation measures. Chapter 4, Section 4.8.2.3, of the SWEIS describes current water use and the water utility infrastructure for LANL and the Los Alamos region. Total and consumptive water use at LANL has actually decreased since 1999, in part due to water conservation efforts. DOE transferred 70 percent of its water rights for LANL to Los Alamos County and leases the remaining 30 percent to the county.

DOE is now a county water customer; as such, DOE is billed and pays for the water it uses in accordance with a water service contract. For water use planning purposes, DOE has established a target ceiling quantity for water use equal to the water rights it still owns (542 million gallons [2,050 million liters] per year).

Los Alamos County recently completed the conversion of its water contract with the Bureau of Reclamation to access San Juan-Chama project water, which will enable the county to move forward with this water diversion project. This project, coupled with implementation of the measures outlined in the Los Alamos County August 2006 Long-Range Water Supply Plan, should enable it to meet regional water demands for the next 40 years (Stephens 2006).

Utility demand projections were updated in the Final SWEIS. As discussed in Chapter 5, Section 5.8.2.3, under the Expanded Operations Alternative, LANL operational water demands would remain within DOE's water use target ceiling quantity. Water demands at LANL, combined with the larger and growing demands of other Los Alamos County users, could require up to 98 percent of the currently available water rights. These estimates are based on the latest trend analysis and projections that include calendar year 2005 water usage data for LANL and other Los Alamos County users.

2.9 Compliance Order on Consent (Consent Order) and Environmental Restoration Activities

Issue:

Noting that activities to implement the March 2005 Consent Order were included only under the Expanded Operations Alternative, commentors were concerned that NNSA considered compliance with the Consent Order optional. Commentors doubted that cleanup was being addressed and thought that cleanup should be completed before NNSA contemplated increased pit production or generated additional waste at LANL. Commentors doubted the adequacy of cleanup technologies or called for the development of new cleanup technologies. Commentors questioned the adequacy of a possible cleanup remedy that would cover existing waste or contamination with soil, and proposed that rigorous cleanup standards, such as returning the land to a pristine condition, be applied to all locations at LANL. Some commentors were concerned that wastes would be disposed of without packaging. Others questioned whether wastes from remediation could be safely disposed of.

Response:

NNSA does not consider compliance with the Consent Order (http://www.nmenv.state.nm.us/hwb/lanl/OrderConsent/03-01-05/Order_on_Consent_2-24-05.pdf) optional and is not linking its Consent Order compliance with decisions about pit production, proposed new projects or activities, other increased operational levels, or waste generated from other LANL activities. NNSA could choose to implement alternatives analyzed in the SWEIS either wholly, in part, or in combinations. NNSA intends to implement actions necessary to comply with the Consent Order regardless of whether it implements other actions analyzed in the SWEIS. NNSA includes the Consent Order impact analysis in the SWEIS to support collateral decisions that NNSA may make to facilitate implementation of Consent Order activities.

NNSA intends to continue conducting the environmental restoration program at LANL in conjunction with its stockpile stewardship mission. Chapter 2, Section 2.2.6, of the SWEIS summarizes progress made in environmental restoration since 1999. The LANL management and operating contractor identified over 2,000 sites in the early 1990s that potentially required environmental restoration; however, due to remediation and consolidation, only about 800 sites remain to be addressed.

There are many technologies available for remediating contaminated sites. Several of the more applicable technologies are summarized in Appendix I. DOE sponsors millions of dollars of research on remediation technologies for metal- and radionuclide-contaminated sites, in addition to partnering with EPA and the Department of Defense on research programs for sites contaminated with organic chemicals, metals, and explosive residues. DOE applies successful environmental technologies to its field sites based on these research initiatives.

Although the SWEIS evaluates the environmental impacts associated with potential remedial action alternatives, remediation decisions for contaminated sites will be made in accordance with established regulatory processes and standards, including those of the New Mexico Environment Department for the Consent Order. To arrive at a decision about remediating a contaminated site, several alternative remedies may be considered as needed. Any selected remedy must protect human health and the environment and meet applicable cleanup standards, including those for groundwater, surface water, and soil. If a site is to remain under DOE ownership, cleanup standards commensurate with a restricted type of land use may be used, provided offsite areas are protected. If a site is to be released for unrestricted public access, that site would need to meet cleanup standards for unrestricted access that, for example, potentially would allow farming. As discussed in Chapter 2, Section 2.2.6, decisions about cleanup levels for sites subject to the Consent Order will be made by the New Mexico Environment Department using standards documented in Section VIII of the Consent Order.

Waste generated from environmental restoration would be safely stored until it can be disposed of. Waste would be packaged and transported in compliance with Federal regulations and the waste acceptance criteria of the facilities receiving the waste. Packaging requirements for hazardous (including radioactive) materials are progressively more stringent as the hazards represented by the shipped materials increase. Experience in the DOE complex indicates that most radioactive waste from environmental restoration activities contains so little radioactive material that it can be safely shipped in bulk (for example, contained within lift liners that are shipped within reusable intermodal containers).

The SWEIS considers the impacts of transporting all solid, chemical, and radioactive wastes for disposal at offsite facilities, as well as the impacts of transporting all low-level radioactive wastes to onsite disposal facilities. The projected transuranic waste volume from full implementation of the Removal Option for the material disposal areas could cause LANL's transuranic waste volume to exceed the volume assumed to come from LANL in the *Waste Isolation Pilot Plant Disposal Phase Final Supplemental Environmental Impact Statement* (DOE/EIS-0026-S2) (DOE 1997b). Decisions about disposal of this transuranic waste, if generated, would be made within the context of the needs of the entire DOE complex. If generated, transuranic waste from material disposal areas would be packaged and safely stored until disposal capacity becomes available.

2.10 Depleted Uranium and the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility

Issue:

Commentors expressed concern about open burning of uranium and the potential effect of this activity on air, water, soil, and the health of the citizens of New Mexico. Some commentors stated that large amounts of depleted uranium have been used in the past and might remain in the environment. Commentors requested that NNSA implement a more comprehensive monitoring program to monitor open burning and detonation sites. Specific comments addressed the proposal to process "87,000 pounds of high explosives and up to 6,900 pounds of depleted uranium" in open detonation hydrodynamic experiments. A commentor stated that NNSA had not met its commitments in the phased containment of testing at DARHT; others questioned the use of foam and its effect on emissions.

Response:

Depleted uranium is used in dynamic and hydrodynamic testing performed with high explosives. The testing takes place at the DARHT Facility in TA-15 and at other firing sites. All of the firing sites are in remote locations. High explosives are detonated in close proximity to depleted uranium to observe the impact of detonation on depleted uranium. Depleted uranium is dense, much denser than lead, and is therefore deposited mostly near the firing point when it is fragmented by the force of the high explosives detonation. Mock explosives (material that will not explode easily that is used to simulate one or more properties of high explosives) do not consist of depleted uranium.

No experiments or activities at LANL involve the burning of depleted uranium. State of New Mexico open burning permits that would allow a variety of experiments and testing have been withdrawn. High explosives and explosives-contaminated materials (not including depleted uranium) are burned or detonated in accordance with a RCRA permit as a hazardous waste treatment to render the materials safe for disposal.

Monitoring of the environment in and around LANL generally includes air, water, soil, and foodstuffs. All LANL activities are performed in accordance with applicable state (New Mexico Air Quality Control Act) and Federal laws (Clean Air Act, Toxic Substances Control Act), as well as regulations, Executive Orders, and permits, as described in Chapter 6 of the SWEIS. Specifically, monitoring of soils, invertebrates, birds, mammals, and nearby cultural resources is required for the area potentially affected by the DARHT Facility. Experiments at the DARHT Facility are subject to specific monitoring requirements. Numerous samples, using various techniques, are taken within 250 meters of the firing point. This sampling is performed to better understand the levels of contamination (beryllium and depleted uranium) at the firing sites, the success of decontamination efforts, and the success of mitigation techniques that are applied to specific experiments.

Independent of the DARHT Facility monitoring requirements, airborne radionuclide emissions at the LANL site perimeter, as well as at onsite and regional locations, are monitored continually by AIRNET. These results are available both online and in the annual environmental surveillance

reports. Onsite LANL AIRNET locations are used to help quantify emissions from particular sources. The number of operating AIRNET stations remains relatively constant; in 2005, 50 stations were in use, an increase of 4 from the number of stations in 2004. Data from stations located near DARHT were tracked for several years to determine whether a trend or impact in the airborne radionuclide emissions existed that warranted further analysis. The only impact noted during that time was higher readings caused by a known source (contaminated soil) under one of the AIRNET stations, not airborne emissions from any LANL facility. Since the data collected from stations near DARHT did not indicate a trend, some of the AIRNET stations were redeployed. Predominant wind patterns were used to help determine the best locations for these stations to provide a better estimate of potential offsite impacts.

In addition to monitoring by AIRNET, air-sampling programs at LANL include ambient nonradiological air monitoring programs and stack sampling for radionuclides. Soils, foodstuffs, and biota (plants and animals) are also collected within and around LANL to help determine whether there are any impacts from LANL operations on human health and the human food chain. A public health assessment of LANL operations concluded that no harmful exposures due to chemical or radioactive contamination detected in groundwater, surface soil, surface water and sediment, or biota are occurring or are expected to occur in the future, as described in Chapter 4, Sections 4.4.2.3, 4.4.3.1, and 4.6.1.2.

Although toxic and radioactive air emissions can potentially have detrimental impacts, past emission levels analyzed through the existing LANL monitoring programs and those projected in the SWEIS would not be expected to cause adverse impacts on human health or the environment, as stated in Chapter 5, Sections 5.4 and 5.6. The No Action and Expanded Operations Alternatives descriptions indicate that high explosives processing activities would use up to 82,700 pounds of explosives in a year (the Reduced Operations Alternative would use 20 percent less). Both this amount and the amount of depleted uranium used in high explosives testing remain unchanged from the quantities analyzed in the *1999 LANL SWEIS* (DOE 1999a). The annual amount of depleted uranium in experiments is used as the basis for calculating upper-bound annual emissions rates for these activities. Using these upper-bound annual emission rates, the calculated dose from depleted uranium would be less than 1 millirem per year to an individual at the offsite location of greatest impact (see Appendix C). The dose from depleted uranium to an individual at other locations near the site boundary would be less, and the dose to an individual located away from the site would be much less.

In the interest of limiting the spread of contamination, in the ROD following the *Final Environmental Impact Statement (EIS), Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility* (DOE 1995a) DOE selected the Phased Containment Option, which calls for a phased approach to containment for tests and experiments at the DARHT Facility. The materials to be contained are beryllium, depleted uranium, and RCRA characteristic metals. In Phase I (1999-2004), a prototype vessel system and portable cleanout unit were to be installed. While a vessel system was not installed at DARHT during this period, vessel system design continued, prototype vessels were tested at other firing sites, and the use of aqueous foam was implemented at DARHT to reduce the amount of particulates released. The use of foam meets the emission reduction goal of at least 5 percent compared to the releases from the testing program without containment. The Vessel Preparation Building was constructed during this phase and should be fully operational in the near future. Use of foam similar to that used for firefighting was

implemented at DARHT for tests using certain hazardous materials such as beryllium. A NEPA review of foam use was completed and a Notice of Intent to Discharge was submitted to the New Mexico Environment Department regarding the foam. The foam mitigation technique is designed to capture finely divided materials, thereby reducing emissions. The amount of reduction achieved depends on the specific shot and a wide range of parameters. Emission of fine particulates was estimated to be reduced by 50 to 95 percent depending on the individual shot. The foam breaks down and is rinsed to a sump from which it is pumped and sent to the Radioactive Liquid Waste Treatment Facility for treatment. This additional, nonhazardous waste was included in the waste analysis in the SWEIS.

2.11 Environmental Justice

Issue:

Commentors expressed concerns about the adequacy of the Environmental Justice analysis in the SWEIS, stating their opinion that it does not meet the requirements of Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. Commentors questioned the definition used for low-income populations and whether low-income and minority populations were properly identified and considered in the analyses. They also were concerned that environmental justice was not properly addressed in the cumulative impacts analyses and that the special pathways were not adequately analyzed. Some commentors took exception to statements in the SWEIS that low-income and minority populations are not disproportionately impacted by LANL operations. A number of commentors were also concerned that public meetings on the Draft SWEIS were held on or during preparations for Pueblo Feast Days, making it difficult or impossible for some members of regional Pueblos to attend.

Response:

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of Federal programs, policies, and activities on minority and low-income populations. The Order also requires agencies to ensure greater public participation in their decisionmaking practices. DOE is committed to implementing the requirements of this Executive Order and has instituted a number of activities to ensure consideration of and participation by members of minority and low-income populations surrounding LANL and its other facilities.

NNSA acknowledges that different approaches can be used to assess the environmental justice impacts of continuing to operate LANL. Some groups may view any impacts as significant, while others may consider varying levels of risk as acceptable or unacceptable. As demonstrated in Chapter 5, Section 5.11, NNSA has met the objectives of Executive Order 12898 to investigate environmental justice impacts that potentially would be high and adverse and would disproportionately affect one group over another.

Chapter 4 describes the affected environment around LANL. Section 4.11 contains population statistics based on the 2000 U.S. Census, definitions, and other information needed for the

environmental justice analysis. Chapter 5 contains the impact analyses by resource area. Section 5.11 provides definitions for minority and low-income individuals and populations and describes methods of determining affected populations in order to assess the potential for disproportionately high and adverse human health or environmental effects from implementing the alternatives evaluated in the SWEIS. As explained in Section 5.11, these definitions and methods are based on Federal guidance and widely accepted methodologies. The potential for environmental justice impacts is assessed by comparing the impacts for each resource area to the impacts on affected minority and low-income populations (for the SWEIS, generally those residing within a 50-mile [80-kilometer] radius of LANL).

For the purposes of the SWEIS, minority individuals are defined as those who identified themselves in the 2000 U.S. Census as Hispanic or Latino, Asian, Black or African-American, Native American or Alaska Native (hereafter referred to as Native American), Native Hawaiian or Other Pacific Islander, or Multiracial (with at least one race designated as minority). Minority populations are identified where either: (1) the minority population of the affected area exceeds 50 percent, or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis.

The area immediately surrounding LANL in Los Alamos County is mainly populated by whites, while the area outside of Los Alamos County is primarily populated by minorities. Minorities comprise about 18 percent of Los Alamos County's population. Hispanics are the largest minority group in Los Alamos County, at approximately 12 percent of the population. As discussed in Chapter 4, Section 4.11, approximately 55 percent of the population within a 50-mile (80-kilometer) radius area of LANL belong to a minority group. The largest minority group in this area is the Hispanic or Latino population (about 46 percent), followed by Native Americans (about 6 percent).

No standard has been developed for Federal agencies to use in determining low-income populations for environmental justice analyses. Both DOE and EPA use the Federal poverty threshold to identify low-income populations. Low-income populations in an affected area are identified using the annual statistical poverty thresholds from the U.S. Census Bureau's Current Population Reports, Series P60, on Income and Poverty. Low-income populations are defined for SWEIS analyses as communities in which a greater percent of the population is characterized as living in poverty than the New Mexico state average. In the 2000 U.S. Census, approximately 18 percent of the population of New Mexico was identified as living below the Federal poverty threshold. Therefore, for the SWEIS analysis, low-income populations were identified as those census block groups residing within a 50-mile (80-kilometer) radius of LANL with greater than 18 percent of the population living below the Federal poverty threshold.

As discussed in Chapter 4, Section 4.11, approximately 16 percent of the total population living within a 50-mile (80-kilometer) radius of LANL lives below the poverty threshold. This is about 2 percent lower than the state average. Within this area, however, there are a number of census block groups with at least 18 percent of the population living below the poverty threshold. The total impacts projected in the SWEIS were compared against the impacts on these census block groups to determine whether there were disproportionate adverse impacts to any low-income populations.

An environmental justice analysis considers whether impacts identified for other resource areas, such as human health, represent disproportionately high and adverse impacts to minority or low-income populations. Chapter 5, Section 5.11, identifies the potential impacts for resource areas that are important to the environmental justice analysis for LANL and evaluates whether those impacts (analyzed in other sections of Chapter 5) represent disproportionately high and adverse impacts to minority or low-income populations. This analysis did not identify any disproportionately high and adverse human health or environmental impacts on minority or low-income populations under any of the actions or alternatives analyzed in the SWEIS. Specifically, as discussed in Section 5.4.1, the impacts of nonradiological air pollutants resulting from LANL operations on the public would likely be small. As discussed in Sections 5.6.1 and 5.6.2, the radiological and hazardous chemical risks to the public from normal operations would be small. As discussed in Section 5.10, the risk associated with transporting radioactive waste offsite for disposal would result in less than 1 excess LCF among the exposed general population along the shipping routes. To the extent that there is a potential for adverse impacts, the analyses determined that most of the impacts would affect all populations in the area similarly. Section 5.11 was expanded in the Final SWEIS to include more detailed discussion of the environmental justice analysis.

As discussed in Chapter 5, Section 5.11, and Appendix C, NNSA considered potential exposure through special pathways as part of its human health impacts analyses. The special pathways analysis considers ingestion of native vegetation, locally grown produce and farm products, groundwater, surface water, fish, game animals, other foodstuffs and incidental consumption of soils and sediments (on produce, in surface water, and ingestion of inhaled dust); absorption of contaminants in sediments through the skin; and inhalation of plant materials. For LANL, the special pathways are important to the environmental justice analysis because some of these pathways are important or viable to the traditional or cultural practices of certain members of minority populations in the area. In considering these special pathways, NNSA did not find disproportionately high and adverse health impacts on minority or low-income populations. While such a lifestyle may result in a slightly higher dose (up to 4.5 millirem annually) to the individual than that of the average person living near LANL, the overall risk associated with this lifestyle increases by approximately 1 percent compared to the annual risks associated with living in the area surrounding LANL, where the average individual receives a dose of approximately 400 millirem from natural background radiation. This increased risk is not considered significant.

In response to comments on the Draft LANL SWEIS, additional discussion was added to Chapter 5, Section 5.13, Cumulative Impacts, to address the potential for cumulative environmental justice-related impacts.

NNSA appreciates that holding the public meetings on the Draft SWEIS immediately preceding and during Pueblo Feast Days may have interfered with the ability of Pueblo members to attend those meetings. However, NNSA believes that the process implemented for public input on the Draft LANL SWEIS provided reasonable accommodation for such events. For those unable to attend any of the three hearings on the Draft LANL SWEIS, other means of providing comments on the SWEIS were provided, including submitting comments through the U.S. mail, e-mail, and toll-free telephone and fax lines. The comment period was extended from 60 to 75 days, and

members of the northern New Mexico Pueblos were invited to a special briefing on the Draft LANL SWEIS on July 26, 2006, about 3 weeks after the document was made available. This briefing provided an opportunity for Pueblo members to talk with NNSA and LANL staff who are knowledgeable about the alternatives and the projects included in the LANL SWEIS.

2.12 Comparison to Rocky Flats Plant

Issue:

Commentors opposed to continued or expanded levels of pit production and associated activities at LANL cited past performance at the now-closed Rocky Flats Plant in Colorado as indicative of NNSA's continued and future operations, inferring that similar activities at LANL would result in comparable environmental contamination and human health effects in New Mexico.

Response:

The LANL SWEIS evaluates the potential impacts of continued operation of LANL. Environmental contamination, human health impacts, and legal issues related to operation, shutdown, or cleanup of the Rocky Flats Plant are not within the scope of the SWEIS. Because pit production was transferred to LANL when the Rocky Flats Plant was closed, this response addresses why performance of these activities at LANL would not result in the level of environmental contamination or perceived human health impacts at the Rocky Flats Plant.

A number of factors such as much lower pit production levels, a heightened awareness of safety and environmental issues, newer facilities and technologies, more stringent environmental and nuclear safety regulations, a higher level of scrutiny by regulators and independent oversight organizations, and more controlled operational and management practices support the conclusion that LANL operations are not comparable to operations at the Rocky Flats Plant. The Rocky Flats Plant could produce thousands of pits per year until it ceased operation in 1989. Under the SWEIS Expanded Operations Alternative, LANL would produce a maximum of 80 pits per year. LANL is not operated as a pit production facility; pits are produced one at a time on an "as needed" basis, and pit production is only one component of LANL's many activities and operations.

When the Rocky Flats Plant was closed in 1989 for safety and environmental reasons, it had a history of operational problems. Allegations regarding compliance with RCRA and the Clean Water Act led to a 1989 raid by agents from the Federal Bureau of Investigation, the Department of Justice, and EPA. Other issues surfaced regarding safety violations and plutonium contamination that occurred over many years, mostly before there was an awareness of environmental issues and the promulgation of stringent environmental regulations.

Today's nuclear weapons complex is much different than it was when Rocky Flats was operating. Lessons learned from past operations have resulted in a smaller, safer, more efficient complex. Today's complex conforms to current national policies and stricter environmental regulations and oversight, as well as more rigorous management processes and controls. NNSA facilities are required to operate in compliance with Federal and other government regulations and to adhere to DOE environmental and safety requirements that may be more stringent than some external

regulations. Sites such as LANL must implement DOE Orders and policies related to the detailed management of projects to protect public health and the environment and to ensure appropriate safety and design standards are met. Project management activities conform to national standards and industrial practices that were not in place throughout much of the operation of the Rocky Flats Plant. Safety documentation is regularly reviewed and corrective action plans are used to address any deficiencies that may be discovered. Regulatory and independent oversight agencies monitor activities that occur at NNSA facilities, including LANL. The level of oversight and interaction with stakeholders has increased substantially since the Rocky Flats Plant was operating, both throughout the nuclear weapons complex and at LANL specifically.

The Plutonium Facility in TA-55 is a newer facility than those at the Rocky Flats Plant. The Plutonium Facility has increased safety margins, stronger structural components, firebreaks and automatic fire suppression systems, and more automatic alarms and process controls. Specifically regarding filtration of process emissions and the problems with the Rocky Flat design, the Plutonium Facility has implemented structural designs for fire containments, multiple stages of high-efficiency particulate air filtration, and firebreaks to prevent, isolate, and confine potential fires from spreading through air filtration systems, thus minimizing potential releases to the environment. Additional upgrades, repairs, and replacements of equipment and components are proposed under the TA-55 Refurbishment Project as part of the SWEIS Expanded Operations Alternative to ensure the facility safety envelope is maintained as the facility and its systems and components age. A description of the proposed upgrades and an evaluation of this project are in included in Appendix G, Section G.7.

Chapter 4, Table 4–19, of the SWEIS summarizes the range of annual nonradiological emissions from LANL from 1999 to 2005. The consequences of these and projected future emissions are evaluated in Chapter 5, Section 5.6, of the SWEIS and are very small. Additionally, implementation of improved operational methods, environmental monitoring and surveillance, material and waste handling, a much more rigorous safety program, and a formal lessons learned program contribute to lower environmental, safety and health impacts. These operational improvements and routine environmental monitoring and surveillance are intended to ensure that activities occurring at LANL will not result in contamination of the environment or impacts on the health and safety of employees or the public from either routine or accidental releases. As discussed in Chapter 1, Section 1.3, of the SWEIS, NNSA, the LANL contractor, and the State of New Mexico entered into a Consent Order in 2005 that requires investigation and remediation of environmental contamination from past operations at LANL. NNSA and its contractor are committed to remediating existing contamination and protecting public health and safety and the environment.

2.13 Recommendations of the Defense Nuclear Facilities Safety Board

Issue:

Commentors expressed their opinion that LANL is not in compliance with DOE and DNFSB safety regulations and recommendations. Some commentors claimed that certain LANL facilities are up to 6 years behind in preparing and submitting their required safety documentation to DOE. Other commentors stated that such lack of compliance poses an unacceptable risk to

workers, the public, and the environment. Commentors also stated that the Draft SWEIS should fully incorporate, analyze, consider, and resolve the serious safety issues raised by the DNFSB.

Response:

The Congress created DNFSB in 1988 as an independent oversight organization within the Executive Branch to provide advice and recommendations to the Secretary of Energy regarding protection of public health and safety at defense nuclear facilities. As such, DNFSB independently oversees activities affecting nuclear safety at defense nuclear facilities. DNFSB reviews safety issues and formally reports its findings and recommendations regarding the safety of nuclear weapons complex facilities to the highest levels of NNSA. DNFSB may conduct investigations, issue subpoenas, hold public hearings, gather information, conduct studies, and establish reporting requirements for NNSA. DNFSB is required to report to the Congress each year about its oversight activities, its recommendations to NNSA, and improvements in safety at defense nuclear facilities resulting from its activities. Procedures are in place for NNSA to review and respond to DNFSB recommendations and to implement those recommendations at the sites as appropriate.

NNSA and its operating contractors have internal organizations dedicated to safe operation of its nuclear facilities. DOE has issued regulations, standards, and guidance for nuclear facility operation, including requirements for performance of the safety evaluations and risk assessments that become the basis for development of facility operating parameters. With respect to DNFSB concerns, NNSA and the LANL contractor have reviewed DNFSB reports and responded with commitments to update and improve safety basis documentation. The Los Alamos Site Office Safety Authorization Basis Team assures the development and approval of adequate controls in support of safe operations at LANL. Safety documentation for some LANL facilities does not meet current standards and the LANL contractor and NNSA are in the process of revising these documents to achieve compliance. Nonetheless, LANL nuclear facility operations are authorized and approved by NNSA based on its evaluation of the acceptability of existing relevant safety documentation.

The environmental impacts of potential accident scenarios, including accidents caused by human error during the performance of high hazard operations and other types of initiating events, are analyzed in the SWEIS. Safe operation is an intrinsic part of the activities proposed and analyzed in the SWEIS. Nonetheless, NNSA identifies possible operational accidents, natural events, or intentional destructive acts and analyzes their impacts as part of the NEPA process so that this information is available to NNSA in deciding whether to proceed with a proposed action. NNSA recently revised its oversight practices at LANL to focus its resources more specifically on nuclear safety and security.