1. INTRODUCTION AND PURPOSE OF AND NEED FOR AGENCY ACTION

Chapter 1 of this environmental impact statement (EIS) provides an overview of the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) proposal for consolidation and relocation of mission-critical chemistry and metallurgy research (CMR) capabilities currently located at the Los Alamos National Laboratory (LANL) CMR Building at Technical Area 3 (TA-3). Chapter 1 includes background information on CMR capabilities and on the CMR Building's physical condition, the purpose of and need for agency action, the scope of the *Environmental Impact Statement for the Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico* (*CMRR EIS*), and the alternatives analyzed in the EIS. Chapter 1 also discusses other National Environmental Policy Act (NEPA) documents related to the chemistry and metallurgy research replacement (CMRR) proposal, as well as the scoping and public comment period process used to obtain public input on the issues addressed in this *CMRR EIS*.

1.1 INTRODUCTION

NNSA, a separately organized agency within DOE, is responsible for providing the Nation with nuclear weapons, ensuring the safety and reliability of those nuclear weapons, and supporting programs that reduce global nuclear proliferation. NNSA is also responsible for the administration of LANL. LANL is located in north-central New Mexico and covers an area of about 40 square miles (104 square kilometers). LANL was originally established in 1943 as "Project Y" of the Manhattan Project, with a single-focused national defense mission – to build the world's first nuclear weapon. After World War II ended, Project Y was designated a permanent research and development laboratory (known first as the Los Alamos Scientific Laboratory, it acquired the LANL name in the 1980s) and its mission was expanded from defense and related research and development to incorporate a wide variety of new assignments in support of Federal Government and civilian programs. LANL is now a multi-disciplinary, multi-purpose institution engaged in theoretical and experimental research and development. The Federal agency with administrative responsibility for LANL has evolved from the post-World War II Atomic Energy Commission, to the Energy Research and Development Administration, and finally to DOE, NNSA. The University of California (UC at LANL) is the current LANL Management and Operating contractor and has served in this capacity since the laboratory's inception.

Current DOE, NNSA mission-support work provided by UC at LANL stems from its original purpose to build the world's first nuclear weapon. The work includes research and development performed for a variety of programs within DOE, as well as cost-reimbursable work identified as "work for others." This designation, "work for others," encompasses non-DOE-sponsored work

CMRR EIS Terminology

Missions: In this EIS, "missions" refers to the major responsibilities assigned to DOE and NNSA. DOE and NNSA accomplish their missions by assigning groups or types of activities to their national laboratories, production facilities, and other sites.

Programs: DOE and NNSA have program offices, each having primary responsibilities within the set of Administration and Department missions. Funding and direction for activities at DOE and NNSA facilities are provided through these program offices, and similar or coordinated sets of activities conducted to meet the mission responsibilities are often referred to as "programs." Programs generally are long-term efforts with broad goals or requirements.

Capabilities: "Capabilities" refers to the combination of facilities, equipment, infrastructure, and expertise necessary to undertake types or groups of activities and to implement mission assignments. Capabilities at LANL have been established over time, principally through mission-support work assignments and activities directed by program offices.

Projects: The term "projects" is used to describe activities with a clear beginning and end that are undertaken to meet a specific goal or need. Projects are usually relatively short-term efforts, and they can cross multiple programs and missions. Projects can range from very small efforts to major undertakings.

Campaign: "Campaigns" are composed of activities focused on science and engineering that address critical capabilities, tools, computations, and experiments needed to achieve certification, manufacturing, and refurbishment.

performed in support of other Federal agencies, universities, institutions, and commercial firms that is compatible with the DOE mission work conducted at LANL and that cannot reasonably be performed by the private sector. Within DOE, the NNSA mission is to: "(1) enhance U.S. national security through the military application of nuclear energy; (2) 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; (3) provide the U.S. Navy with safe, militarily effective nuclear propulsion plants and ensure the safe and reliable operation of those plants; (4) promote international nuclear safety and nonproliferation; (5) reduce global danger from weapons of mass destruction; and (6) support U.S. leadership in science and technology" [50 USC Chapter 41, § 2401(b)]. In the mid-1990s, DOE, in response to direction from the President and Congress, developed the Stockpile Stewardship and Management (SSM) Program to provide a single, highly integrated technical program for maintaining the continued safety and reliability of the nuclear weapons stockpile. Stockpile stewardship comprises the activities associated with research, design, development, and testing of nuclear weapons, and the assessment and certification of their safety and reliability. Stockpile management comprises operations associated with producing, maintaining, refurbishing, surveilling, and dismantling the nuclear weapons stockpile. Work conducted at LANL provides science, research and development, and production support to these NNSA missions, with a special focus on national security. Under the direction of DOE, UC at LANL has developed facilities, capabilities, and expertise at LANL to perform theoretical research (including analysis, mathematical modeling, and high-performance computing), experimental science and engineering ranging from bench-scale to multi-site, multi-technology facilities (including accelerators and radiographic facilities); and advanced and nuclear materials research, development, and applications (including weapons components testing, fabrication, stockpile assurance, replacement, surveillance, and maintenance including theoretical and experimental activities). These capabilities developed

under the direction of DOE (or its predecessor agencies) now allow UC at LANL to conduct research and development assignments at LANL for the new NNSA that include continued production of War-Reserve (WR) products, assessment and certification of the nuclear weapons stockpile, surveillance of WR components and weapons systems, ensuring safe and secure storage of strategic materials, and management of excess plutonium inventories. These LANL assignments are all conducted in support of the NNSA Stockpile Stewardship Program and funded as either Directed Stockpile Work (DSW), campaigns, or Readiness in Technical Base Facilities (RTBF) work activities. In addition, LANL supports actinide (actinides are any of a series of elements with atomic numbers ranging from actinium-89 through lawrencium-103) science missions ranging from the plutonium-238 heat source program undertaken for the National Aeronautics and Space Administration (NASA) to arms control and technology development. LANL's main role in NNSA mission objectives includes a wide range of scientific and technological capabilities that support nuclear materials handling, processing, and fabrication; stockpile management; materials and manufacturing technologies; nonproliferation programs; and waste management activities. Additional information regarding DOE and NNSA work assignments at LANL is presented in the 1999 LANL *Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory (LANL SWEIS)*. This document and other related documents can be found in the DOE Reading Rooms in Albuquerque, New Mexico (at the Government Information Department, Zimmerman Library, University of New Mexico), and in Los Alamos (at the Community Relations Office located at 1619 Central Avenue).

Nuclear Facilities Hazards Classification (DOE Order 411.1)

Hazard Category 1: Hazard analysis shows the potential for significant offsite consequences.

Hazard Category 2: Hazard analysis shows the potential for significant onsite consequences.

Hazard Category 3: Hazard analysis shows the potential for only significant localized consequences.

SNM Safeguards and Security (DOE Order 474.1-1A)

DOE uses a cost-effective, graded approach to provide SNM safeguards and security. Quantities of SNM stored at each DOE site are categorized into Security Categories I, II, III, and IV, with the greatest quantities included under Security Category I and lesser quantities included in descending order under Security Categories II through IV. Types and compositions of SNM are further categorized by their "attractiveness" to saboteurs, alphabetically with the most attractive materials for conversion of such materials into nuclear explosive devices being identified by the letter "A," and lesser attractive materials being designated progressively by the letters "B" through "E."

The capabilities needed to execute the NNSA mission activities require facilities at LANL that can be used to handle actinides and other radioactive materials in a safe and secure manner. Of primary importance are the facilities located within the CMR Building and the Plutonium Facility (located at TA-3 and -55, respectively), which are used for processing, characterizing, and storing special nuclear materials (SNM)[1]. Most of the LANL mission support functions previously listed require analytical chemistry, material characterization, and actinide research and development support capabilities and capacities that currently exist at facilities within the CMR Building and are not available elsewhere. The

[1]*Special nuclear material: plutonium, uranium enriched in the isotope 233 or in the isotope 235, and any other material that the U.S. Nuclear Regulatory Commission determines to be special nuclear material.*

Plutonium Facility houses other unique capabilities. Work is sometimes moved between the CMR Building and the Plutonium Facility to make use of the full suite of capabilities that these two facilities provide.

The CMR Building is over 50 years old and many of its utility systems and structural components are aged, outmoded, eroding, and generally deteriorating. Studies conducted in the late 1990s identified a seismic fault trace located beneath one of the wings of the CMR Building that greatly increases the level of structural integrity required at the CMR Building to meet current structural seismic code requirements for a Hazard Category 2[2] nuclear facility. Correcting the CMR Building's defects by performing repairs and upgrades and retrofitting utility systems for long-term use housing the mission-critical CMR capabilities would be extremely difficult and costly. Over the long term, NNSA cannot continue to operate the assigned LANL mission-critical CMR support capabilities in the existing CMR Building at an acceptable level of risk to public and worker health and safety without operational restrictions. These operational restrictions preclude the full implementation of the level of operation DOE decided upon through its Record of Decision for the *LANL SWEIS*. Mission-critical CMR capabilities at LANL support NNSA's SSM strategic objectives; these capabilities are necessary to support the current and future directed stockpile work and campaign activities conducted at LANL. The CMR Building is near the end of its useful life and action is required now by NNSA to assess alternatives for continuing these activities for the next 50 years.

1.2 HISTORY OF THE CMR BUILDING

Construction of the CMR Building at LANL within TA-3 was initiated in 1949, and operations began in 1952. The three-story CMR Building (Building 3-29) is supported by an adjacent radioactive liquid waste pump house (Building 3-154). The CMR Building has a central corridor and 8 wings, providing over 550,000 square feet (51,097 square meters) of working area. The original construction provided a main corridor with seven wings. In 1960, an additional wing (Wing 9) was added to accommodate activities that require hot cells for the remote handling of radioactive materials. Wings 6 and 8 were never constructed. The CMR Building is currently designated as a Hazard Category 2, Security Category III nuclear building.

The CMR Building's main function is to house research and development capabilities involving analytical chemistry, materials characterization, and metallurgic studies on actinides and other metals. These activities have been conducted almost continuously in the CMR Building since it became operational. Analytical chemistry and materials characterization (AC and MC) services performed in the CMR Building now support virtually every program at LANL. **Figure 1–1** shows the CMR Building.

The CMR Building was initially designed and constructed to comply with the Uniform Building Codes in effect at the time. Over the intervening years, a series of upgrades have been performed to address changing building and safety requirements (DOE 1997a). By the mid-1990s, the CMR Building had been operating continuously for over 40 years and was approaching its 50-year

[2] *A Hazard Category 2 nuclear facility is one in which the hazard analysis identifies the potential for significant onsite consequences. See box inset in Section 1.1 for additional information on hazard categories.*

Figure 1–1 CMR Building

design life. In 1992, DOE initiated planning and implementation of CMR Building upgrades to address specific safety, reliability, consolidation, and safeguards and security issues. These upgrades were intended to extend the useful life of the CMR Building for an additional 20 to 30 years. In 1997 and 1998, a series of operational, safety, and seismic issues surfaced regarding the long-term viability of the CMR Building. In responding to these issues, DOE determined that originally-planned extensive upgrades to the CMR Building would be expensive, time consuming, and only marginally effective in providing the required operational risk reduction and program capabilities to support DOE and NNSA missions. As a result, in 1999, the CMR Upgrades Project was downscoped to accommodate only upgrades necessary to ensure safe and reliable operations through 2010, consistent with an overall strategy for managing risk at the CMR Building. This risk management strategy recognized that the 50-year-old CMR Building could not continue mission support at an acceptable level of risk to public and worker health and safety without operational restrictions. It also committed NNSA and LANL to manage the CMR Building to a planned end of life in or about the year 2010, and to develop long-term facility and site plans to replace and relocate CMR capabilities. Since this strategy was adopted, CMR capabilities have been restricted substantially, both by planned NNSA actions and by unplanned facility outages that have included the operational loss of two of the eight wings of the CMR Building.

1.3 PURPOSE OF AND NEED FOR AGENCY ACTION

AC and MC are fundamental capabilities required for the research and development support of the DOE and NNSA missions at LANL. CMR capabilities have been present at LANL for the entire history of the site and are critical for future work conducted there.

CMR Building operations and capabilities are currently being restricted in scope due to safety constraints; the building is not being operated to the full extent needed to meet the DOE, NNSA operational requirements established in 1999 for the next 10 years. In addition, continued support of LANL's existing and evolving roles is anticipated to require modification of some capabilities, such as the ability to physically handle larger containment vessels (as compared to existing capabilities) in support of dynamic experimentation and subsequent cleanout. The facilitation and consolidation of like activities at LANL would enhance operational efficiency in terms of security, support, and risk reduction in handling and transportation of nuclear materials.

NNSA needs to act now to provide the physical means for accommodating the continuation of the CMR Building's functional, mission-critical CMR capabilities beyond 2010 in a safe, secure, and environmentally sound manner at LANL. At the same time, NNSA should also take advantage of the opportunity to consolidate like activities for the purpose of operational efficiency, and it might be prudent to provide extra space for future modifications or additions to existing capabilities.

1.4 THE PROPOSED ACTION AND SCOPE OF THE *CMRR EIS*

NNSA proposes to relocate LANL AC and MC, and associated research and development capabilities that currently exist primarily at the CMR Building, to a newly constructed facility, and to continue to perform those operations and activities at the new facility for the reasonably foreseeable future (for the purposes of this EIS, the operations are assessed for a 50-year operating period). As shown in **Figure 1–2**, the *CMRR EIS* evaluates construction of a new CMRR Facility at TA-55 as the Preferred Alternative, a "Greenfield" Site Alternative at TA-6, two "Hybrid" Alternatives, and the No Action Alternative.

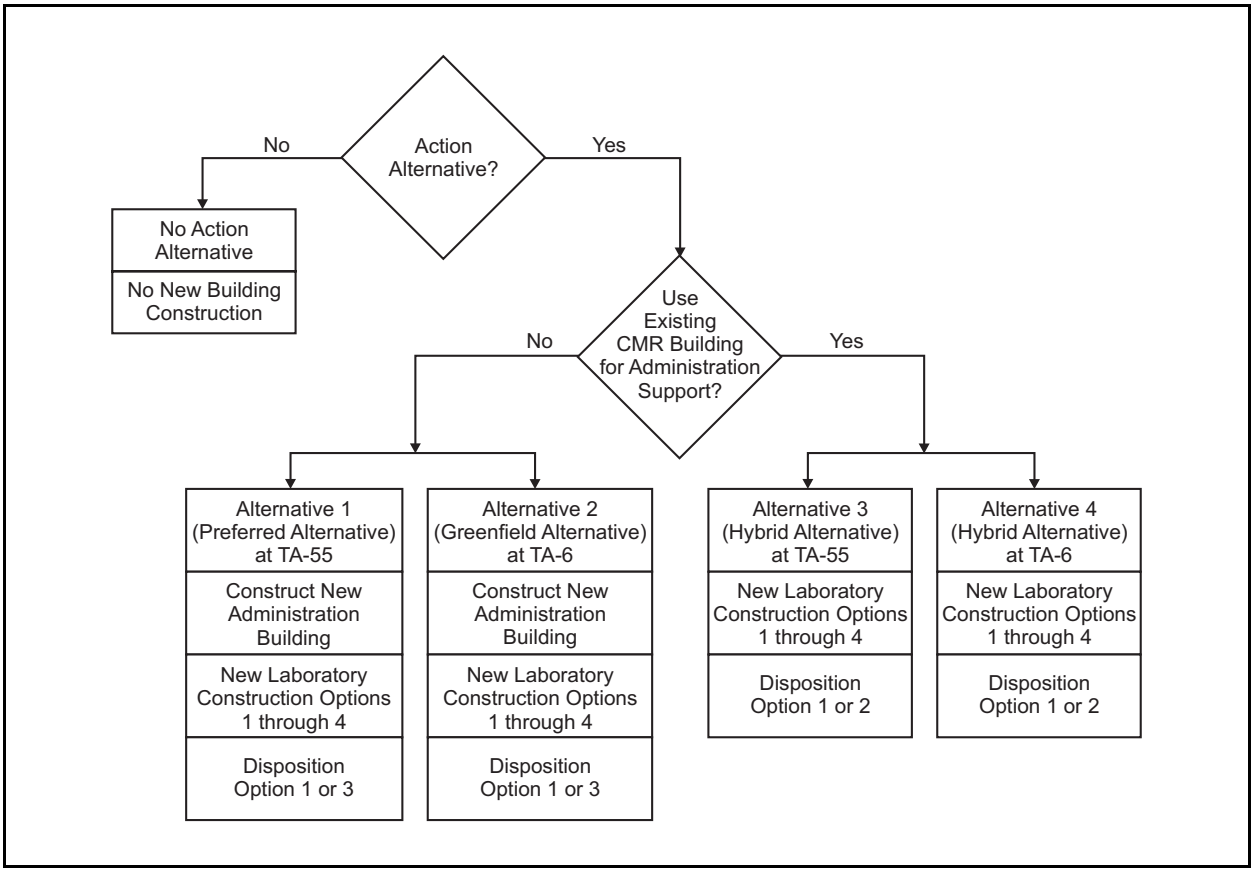


Figure 1–2 Alternatives and Options Evaluated in Detail in the *CMRR EIS*

NNSA's Preferred Alternative (Alternative 1) is to construct two new buildings (Construction Option 3) within TA-55 to house AC and MC capabilities and their attendant support capabilities that currently reside primarily in the existing CMR Building at the operational level identified by

the Expanded Operations Alternative in the 1999 *LANL SWEIS.* This alternative also includes construction of a parking area(s) and other infrastructure support facilities. AC and MC capabilities would be moved from the existing CMR Building into the new buildings using a phased approach, and operations would resume there in a staged manner (there would be a period of operational overlap between the old CMR Building and the new CMRR Facility), and the existing CMR Building would be dispositioned. One of the new buildings in TA-55 would provide administrative offices and house support activities. AC and MC activities would be conducted in either two separate laboratories (Construction Options 1 and 2) or in one new laboratory (Construction Options 3 and 4). The configuration of the laboratories has not been determined at this stage of the project, but would be driven by safety, security, cost and operational efficiency parameters to be evaluated during the conceptual design. As indicated in Figure 1–2, if an action alternative were selected for implementation, then construction of new laboratories would take place in either TA-55 or TA-6. The construction options are:

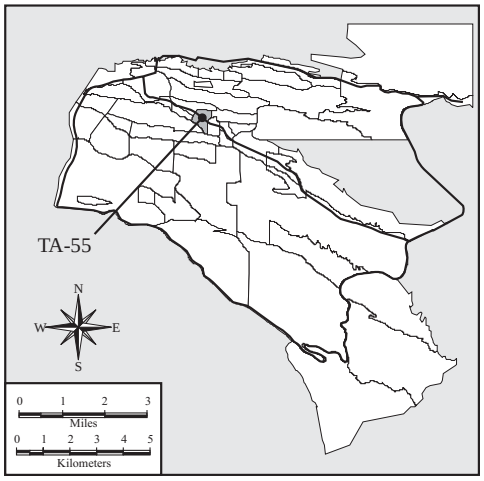
Construction Option 1: Build two separate laboratories above ground.

Construction Option 2: Build two separate laboratories, one below ground and one above ground.

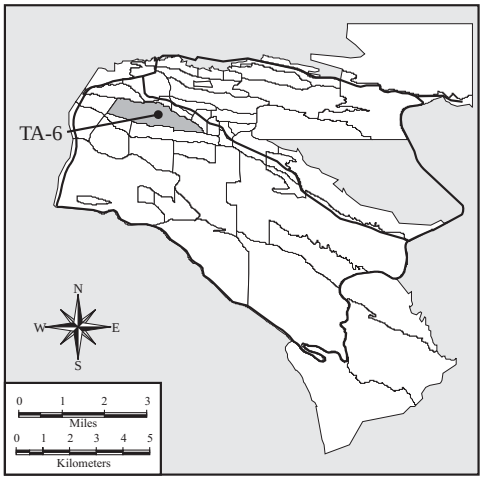
Construction Option 3: Build one consolidated laboratory above ground.

Construction Option 4: Build one consolidated laboratory below ground.

If a single new laboratory were constructed, it would be designated a Hazard Category 2 nuclear facility, and all AC and MC activities would be conducted in one building. If two new laboratories were constructed, one of the new buildings would be designated a Hazard Category 2 nuclear facility and the other designated a Hazard Category 3 nuclear facility. This EIS evaluates the environmental impacts that could result from constructing the Hazard Category 2 building aboveground and also belowground level. This EIS also includes an evaluation of environmental impacts that could result from construction of tunnels to connect the new buildings, SNM storage vaults, utility structures, security structures, and the construction of parking space for occupants of the new CMRR Facility.



TA-55 Site



TA-6 Site

An alternative site for the new CMRR Facility is also analyzed in this EIS – namely, constructing the new CMRR Facility within TA-6; this alternative is referred to as the "Greenfield" Site Alternative. The TA-6 site is a relatively undeveloped, forested area with some prior

disturbance in limited areas. The construction options are the same as those described for the Preferred Alternative.

Two other "Hybrid" Alternatives are analyzed in this EIS, in which the existing CMR Building would continue to house administrative offices and support functions for AC and MC capabilities (including research and development), and no new administrative support building would be constructed. Structural and systems upgrades and repairs to portions of the existing CMR Building would need to be performed and some portions of the Building could be decommissioned, decontaminated, or demolished. A new CMRR Facility laboratory building or buildings would be constructed in either TA-55 (Alternative 3) or TA-6 (Alternative 4) with the same construction options.

Disposition analyses for the existing CMR Building under each of the action alternatives shown in Figure 1–2 would include:

Disposition Option 1: Reuse of the building for administrative and other activities appropriate to the physical conditions of the structure, with the performance of necessary structural and systems upgrades and repairs.

Disposition Option 2: Decontamination, decommissioning, and demolition of selected parts of the existing CMR Building, with some portions of the Building being reused.

Disposition Option 3: Decontamination, decommissioning, and demolition of the entire existing CMR Building.

| The NNSA's Preferred Alternative for disposition of the CMR Building is Disposition Option 3. The No Action Alternative would involve the continued use of the existing CMR Building with minimal routine maintenance and necessary structural and systems upgrades and repairs. Under this alternative, AC and MC capabilities (including research and development), as well as administrative offices and support activities, would remain in the existing CMR Building. No new construction would be undertaken.

This EIS provides an evaluation of potential direct, indirect, and cumulative environmental impacts that could result from relocating existing AC and MC capabilities from the CMR Building to TA-55 (the Preferred Alternative). The *CMRR EIS* will also provide the analyses of direct and indirect impacts that could result from implementing the various action alternatives identified and the No Action Alternative. These alternatives were developed by a team of NNSA and LANL staff who evaluated various criteria and site locations at LANL. The selection criteria for siting considered security issues, infrastructure availability, environmental issues, safety and health infrastructure, and compatibility between sites and CMR capabilities. The alternatives analyzed in this EIS are described in greater detail in Chapter 2.

1.5 DECISIONS TO BE SUPPORTED BY THE *CMRR EIS*

The analyses of environmental impacts that could occur if NNSA implemented the Preferred Alternative evaluated in this *CMRR EIS* will provide NNSA's decision maker (in this case the

Administrator of NNSA) with important environmental information for use in the overall decision-making process. The decisions to be made by the NNSA decision maker regarding the CMRR Project are:

- Whether to construct a new CMRR Facility to house AC and MC capabilities at LANL
- Whether to construct a new building to house administrative offices and support functions in conjunction with the new laboratory facilities
- Whether to locate the new CMRR Facility building(s) at TA-55 next to the existing structures that house LANL plutonium capabilities, or to locate the CMRR Facility building(s) within TA-6, which is a "greenfield" site
- Whether to construct the new CMRR Facility with one large laboratory that would house both the Hazard Category 2 and 3 capabilities, or with two separate laboratory buildings, one to house Hazard Category 2 capabilities and one to house Hazard Category 3 capabilities
- Whether to construct the new Hazard Category 2 laboratory as an aboveground structure or a belowground structure
- What to do with the existing CMR Building if new CMRR Facility laboratories are constructed.

Other considerations, in addition to the environmental impact information provided by this EIS, that are not evaluated in this EIS, will also influence NNSA's final CMRR Project decisions. These considerations include cost estimate information, schedule considerations, safeguards and security concerns, and programmatic considerations of impacts. In accordance with the Council on Environmental Quality's (CEQ) NEPA-implementing regulations (40 CFR 1500 through 1508): "1500.1 Purpose. …(c) Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose."

There are decisions related to the CMR capabilities and activities at LANL that the NNSA Administrator will not make based on the Final *CMRR EIS* analysis. These include the following:

NNSA will not make a decision to remove mission support assignments of CMR capabilities from LANL or to alter the operational level of those capabilities. CMR capabilities were a fundamental component of Project Y during the Manhattan Project era, and the decision to facilitate these capabilities at the Los Alamos site was made originally by the U.S. Army Corps of Engineers, Manhattan District. DOE's predecessor agency, the Atomic Energy Commission, made the decision to continue supporting and to expand CMR capabilities at LANL after World War II; and the CMR Building was constructed to house these needed capabilities. DOE

considered the issue of maintaining CMR capabilities (along with other capabilities) at LANL in 1996 as part of its review of the SSM Program and made programmatic decisions at that time that required the retention of CMR capabilities at LANL (see later discussion of the *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* in Section 1.6.1.3 of this EIS). In 1999, DOE concluded in the *LANL SWEIS* that, due to the lack of information on the proposal(s) for replacement of the CMR Building to provide for its continued operations and capabilities support, it was not the appropriate time to make specific decisions on the project. With the support of the *LANL SWEIS* impact analyses, however, DOE made a decision on the level of operations at LANL that included the capabilities housed by the CMR Building. Having made these critical decisions within the past 7 years, NNSA will not revisit decisions at this time related to the maintenance of CMR capabilities at LANL to support critical NNSA missions.

NNSA will not make a decision on other elements or activities that have been recently undertaken associated with the LANL "Integrated Nuclear Planning" (INP) initiative. During the period from 2000 to 2001, NNSA initiated planning activities associated with the CMRR Project to address long-term AC and MC mission support beyond the year 2010, consistent with the strategy for managing the operation of the CMR Building. During this same timeframe, UC at LANL was implementing or initiating other activities, including identification of potential upgrades to the existing Plutonium Facility, campaigns for pit[3] manufacturing and certification, planned safeguards and security system upgrades, and the proposed relocation of TA-18 capabilities. Such actions were undertaken to address safeguards and security upgrades, operational inefficiencies, and long-term facilities infrastructure requirements related to or affecting LANL nuclear facilities. Recognizing the need for the CMRR Project to be integrated with other contemplated actions, near and long term, affecting the nuclear mission capabilities at LANL, NNSA and UC at LANL developed the INP process. INP is intended to provide an integrated, coordinated plan for the consolidation of LANL nuclear facility construction, refurbishment and upgrade, and retirement activities. As such, INP is a planning process, not an overarching construction project, and is a tool used by NNSA and UC at LANL to ensure effective, efficient integration of multiple distinct stand-alone projects and activities related to or affecting LANL nuclear facilities capabilities. As individual elements or activities associated with INP become mature for decision and implementation, each element and activity moves ahead in the planning, budgeting, and NEPA compliance process on its own merits.

NNSA's overall concept for TA-55 would have it contain all or at least most of the Security Category I nuclear operations needed for LANL operations. To that end, however, are the following considerations: the various potential LANL Security Category I nuclear facilities are independent of one another in terms of their programmatic utility to DOE and NNSA; these Security Category I nuclear facilities are also independent of one another in terms of their individual operations and the capabilities they house; the existing structures are of differing ages and therefore replacement of the aging structures would become necessary at different times; the construction of major facilities within a relatively tight area would require they be staggered so that the area could physically accommodate the necessary construction laydown sites and needed

[3] *The central core of a primary assembly in a nuclear weapon, typically composed of plutonium-239 and/or highly enriched uranium, and other materials.*

storage areas; and the additional security elements required for the construction and startup of operations in Hazard Category 2 nuclear facilities would predicate the need for their separate construction in terms of scheduling.

NNSA recently completed an EIS for relocating LANL's TA-18 capabilities and materials and decided to move Security Category I and II capabilities and materials to another DOE site away from LANL (see discussion in Section 1.6.1.13 regarding the *Final Environmental Impact Statement for the Proposed Relocation of Technical Area 18 Capabilities and Materials at the Los Alamos National Laboratory*). NNSA is separately considering the construction and operation of a pit manufacturing facility on a scale greater than can currently be accommodated in existing facilities at LANL, and is considering LANL's TA-55 as a possible site (though it is not currently identified as the preferred site location). (See additional discussion regarding this proposal and its associated NEPA compliance analyses in Section 1.6.2.1).

1.6 RELATED NATIONAL ENVIRONMENTAL POLICY ACT REVIEWS

This section explains the relationship between the *CMRR EIS* and other relevant NEPA compliance impact analyses documents and NNSA programs. Completed NEPA compliance analyses are addressed in Section 1.6.1; ongoing NEPA compliance analyses are discussed in Section 1.6.2; and the relationships to other LANL projects are discussed in Section 1.6.3.

1.6.1 Completed NEPA Compliance Actions

1.6.1.1 *Environmental Assessment for the Proposed CMR Building Upgrades at the Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1101)

In February 1997, DOE issued the *Environmental Assessment for the Proposed CMR Building Upgrades at the Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE 1997a). DOE prepared this environmental assessment (EA) to analyze the effects that could be expected from performing various necessary extensive structural modifications and systems upgrades at LANL's existing CMR Building. Changes to the Building included structural modifications needed to meet current seismic criteria and building ventilation, communications, monitoring, and fire protection systems upgrades and improvements. A Finding of No Significant Impact was issued on the CMR Building Upgrades project on February 11, 1997.

As mentioned earlier in this chapter, these upgrades were intended to extend the useful life of the CMR Building an additional 20 to 30 years. However, late in 1997 and on through 1998, a series of operational, safety, and seismic issues surfaced regarding the long-term viability of the CMR Building. In the course of considering these issues, DOE determined that the extensive upgrades originally planned for the Building would be much more expensive and time consuming than had been anticipated and would be marginally effective in providing the required operational risk reduction and program capabilities to support NNSA mission assignments at LANL. As a result, DOE reduced the number of CMR Building upgrade projects to only those needed to ensure safe and reliable operations through about the year 2010. CMR Building operations and capabilities are currently being restricted due to safety and security constraints; the Building is not operational to the full extent needed to meet DOE NNSA requirements established in 1999 for

the then foreseeable future over the next 10 years. In addition, continued support of LANL's existing and evolving mission roles is anticipated to require additional capabilities such as the ability to handle large containment vessels in support of dynamic experiments. The continued adequate, safe, and secure housing of these operational and capability requirements beyond the year 2010 is the subject of this EIS.

1.6.1.2 *Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement* (DOE/EIS-0240)

In June 1996, DOE issued the *Disposition of Surplus Highly Enriched Uranium Final Environmental Impact Statement* (DOE 1996a). DOE prepared this EIS because of the need to move rapidly to neutralize the proliferation threat of surplus highly enriched uranium and to demonstrate the U.S. commitment to nonproliferation. Alternatives considered included several approaches to blending down the highly enriched material to make it non-weapons-usable and suitable for fabrication into fuel for commercial nuclear reactors. In the Record of Decision, published in the *Federal Register* on August 5, 1996 (61 FR 40619), DOE stated that it would implement a program that would blend as much as 85 percent of the surplus highly enriched uranium to a uranium-235 enrichment level of approximately 4 percent for commercial use and blend the remaining surplus highly enriched uranium down to an enrichment level of about 0.9 percent for disposal as low-level radioactive waste. Highly enriched uranium used in support of ongoing CMR activities could be dispositioned, when necessary, using material management methods described in the *Highly Enriched Uranium EIS*.

1.6.1.3 *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* (DOE/EIS-0236)

In September 1996, DOE issued the *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management* (DOE 1996b). This Programmatic Environmental Impact Statement (PEIS) evaluated the potential environmental impacts resulting from activities associated with nuclear weapons research, design, development, and testing, as well as the assessment and certification of weapons' safety and reliability. The stewardship portion of the document analyzed the development of three new facilities to provide enhanced experimental capabilities. The Record of Decision was published in the *Federal Register* on December 26, 1996 (61 FR 68014). In the Record of Decision, DOE elected to downsize a number of weapons complex facilities, build the National Ignition Facility at Lawrence Livermore National Laboratory, and reestablish pit fabrication capability at LANL. A supplemental analysis (DOE/EIS-0236-SA, September 1999) was prepared to examine the plausibility of a building-wide fire at LANL's Plutonium Facility and to examine new studies regarding seismic hazards at LANL. The supplemental analysis concluded there was no need to prepare a supplemental EIS. The impacts of this action were included in the baseline assessment and are included in the potential cumulative impacts resulting from the *CMRR EIS* proposed action. In addition, as identified in the *CMRR EIS* Notice of Intent (67 FR 48160), CMR capabilities at LANL support the stockpile stewardship mission addressed in the *Stockpile and Stewardship Management EIS.*

1.6.1.4 *Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200-F)

In May 1997, DOE issued the *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE 1997b). This PEIS examined the potential environmental and cost impacts of strategic management alternatives for managing five types of radioactive and hazardous wastes resulting from nuclear defense and research activities at sites around the United States. The five waste types are low-level mixed waste, low-level radioactive waste, transuranic waste, high-level radioactive waste, and hazardous waste. This PEIS provided information on the impacts of various siting alternatives that DOE would use to decide at which sites to locate additional treatment, storage, and disposal capacity for each waste type. This information included the cumulative impacts of combining future siting configurations for the five waste types and the collective impacts of other past, present, and reasonably foreseeable future capabilities.

The selective waste management facilities considered for the five waste types were treatment and disposal facilities for low-level mixed waste, treatment and disposal facilities for low-level radioactive waste, treatment and storage facilities for transuranic waste (in the event that treatment is required before disposal), storage facilities for canisters of treated (vitrified) high-level radioactive waste, and treatment of nonwastewater hazardous waste by DOE and commercial vendors. In addition to the No Action Alternative, which included only existing or approved waste management facilities, the alternatives for each of the five waste type configurations included decentralized, regionalized, and centralized alternatives for using existing and operating new waste management facilities. However, the siting, construction, and operation of any new facility at a selected site would not be decided until completion of a sitewide or project-specific environmental review.

DOE published four decisions from this PEIS. In its Record of Decision for the Treatment and Management of Transuranic Waste published in the *Federal Register* (63 FR 3629) and subsequent revisions to this Record of Decision (65 FR 82985, 66 FR 38646, and 67 FR 56989, respectively), DOE decided (with one exception) that each DOE site that currently has or will generate transuranic waste would prepare its transuranic waste for disposal and store the waste onsite until it could be shipped to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico, for disposal.

In the second Record of Decision published in the *Federal Register* (63 FR 41810), DOE decided to continue using offsite facilities for the treatment of major portions of the nonwastewater hazardous waste generated at DOE sites. This decision did not involve any transfers of nonwastewater hazardous waste among DOE sites.

In the third Record of Decision, published in the *Federal Register* on August 26, 1999 (64 FR 46661), DOE decided to store immobilized high-level radioactive waste in a final form at the site of generation [Hanford Site, Idaho National Engineering and Environmental Laboratory (INEEL), Savannah River Site (SRS), and the West Valley Demonstration Project] until transfer to a geologic repository for ultimate disposal.

DOE addressed the management and disposal of low-level and mixed radioactive waste in a fourth Record of Decision, published in the *Federal Register* on February 25, 2000 (65 FR 10061). In this Record of Decision, DOE decided to perform minimal treatment of low-level radioactive waste at all sites and continue, to the extent practicable, disposal of onsite low-level radioactive waste at INEEL, LANL, the Oak Ridge Reservation, and SRS. DOE decided to treat mixed low-level radioactive waste at the Hanford Site, INEEL, the Oak Ridge Reservation, and SRS, with disposal at the Hanford Site and the Nevada Test Site (NTS). Radioactive and hazardous wastes generated by current and future CMR operations at LANL would continue to be managed in accordance with these and amended Records of Decisions.

1.6.1.5 *Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EIS-0238)

In January 1999, DOE issued the *LANL SWEIS* (DOE 1999a). This document assessed four alternatives for the operation of LANL: (1) No Action, (2) Expanded Operations, (3) Reduced Operations, and (4) Greener Alternative. The Record of Decision for the *LANL SWEIS* was published in the *Federal Register* on September 20, 1999 (64 FR 50797). In the Record of Decision, DOE selected the Expanded Operations Alternative with reductions to certain weapons-related work. The Expanded Operations Alternative described in the *LANL SWEIS* analyzed the impacts from the continuation of all present activities at LANL, at the highest level of activity. The Record of Decision states that operations at the CMR Building would continue and increase by approximately 25 percent over past No Action operational levels. The effects from the Expanded Operations Alternative level of activity at LANL are discussed in Chapter 4, "Environmental Consequences," of the *LANL SWEIS*, and have been included in the assessment of baseline conditions at LANL for the proposed action alternatives presented in this EIS.

The No Action Alternative assessed in this EIS is consistent with the Preferred Alternative identified in the *LANL SWEIS* and its associated Record of Decision. However, as a result of continued reductions in the CMR Building's operational capacity due to the structural deterioration caused by aging and the need to ensure compliance with safety requirements for that building, the No Action Alternative no longer allows UC at LANL to fully meet NNSA's CMR mission requirements at LANL. The No Action Alternative analyzed in the *CMRR EIS* reflects the current reduced level of operations at the CMR Building.

1.6.1.6 *Surplus Plutonium Disposition Final Environmental Impact Statement* (DOE/EIS-0283)

In November 1999, DOE issued the *Surplus Plutonium Disposition Final Environmental Impact Statement* (DOE 1999d), an EIS that was tiered from the *Storage and Disposition of Weapons-Usable Fissile Materials Programmatic Environmental Impact Statement* (DOE/EIS-0229). The Record of Decision for the PEIS, published in the *Federal Register* on January 14, 1997 (62 FR 3014), outlined DOE's approach to plutonium disposition and established the groundwork for the *Surplus Plutonium Disposition EIS*. The fundamental purpose of the program is to ensure that plutonium produced for nuclear weapons and declared excess to national security needs (now and in the future) will never again be used for nuclear weapons.

The *Surplus Plutonium Disposition EIS* evaluated reasonable alternatives for the siting, construction, and operation of facilities required to implement DOE's disposition strategy for up to 55 tons (50 metric tons) of surplus plutonium. The disposition facilities analyzed in the *Surplus Plutonium Disposition EIS* included pit disassembly and conversion, plutonium conversion and immobilization, and mixed oxide fuel fabrication. The *Surplus Plutonium Disposition EIS* also analyzed the potential impacts of fabricating a limited number of mixed oxide fuel assemblies for testing in a reactor.

In the Record of Decision, published in the *Federal Register* on January 11, 2000 (65 FR 1608), DOE decided to provide for the safe and secure disposition of surplus plutonium as mixed oxide fuel through immobilization. On April 19, 2002 (67 FR 19432) DOE/NNSA amended the Records of Decision for the *Storage and Disposition of Weapons-Usable Fissile Materials PEIS* and *Surplus Plutonium Disposition EIS*. This Amended Record of Decision announced the cancellation of the immobilization portion of the disposition strategy as well as changes to NNSA's strategy for long-term storage of surplus pit and nonpit plutonium. Plutonium used in support of ongoing CMR activities could be dispositioned, when necessary, using material management methods described in the *Surplus Plutonium Disposition EIS*.

1.6.1.7 *Special Environmental Analysis for the Department of Energy, National Nuclear Security Administration: Actions Taken in Response to the Cerro Grande Fire at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/SEA-03)

In September 2000, NNSA issued this special environmental analysis (SEA) to document their assessment of the impacts of emergency activities conducted at LANL in response to the Cerro Grande Fire. In May 2000, the wildfire burned 7,684 acres (3,110 hectares) within the boundaries of LANL and an additional 35,446 acres (14,345 hectares) in neighboring areas (DOE 2000b). As a result, NNSA took emergency action to protect the lives of its employees, contractors, and subcontractors, and other people living and working in the LANL region, their property, and the environment.

The urgent nature of the actions required in response to the Cerro Grande Fire precluded compliance with NEPA in the usual manner, so NNSA invoked the emergency circumstances clause of both the CEQ's NEPA-implementing regulations (40 CFR 1506.11) and DOE's NEPA-implementing regulations (10 CFR 1021.343). The SEA assessed the impacts that resulted from actions undertaken by NNSA (or on behalf of NNSA or with NNSA funding) to address the emergency situation. The SEA described actions and their impacts, mitigation measures taken for actions that rendered their impacts not significant or that lessened the adverse effects, and an analysis of cumulative impacts. Actions not included in the SEA will be the subject of other NEPA reviews and analyses. Actions taken in response to the SEA are discussed in Chapter 3, "Affected Environment," and have been included in the baseline conditions for the No Action Alternative in the *CMRR EIS*.

1.6.1.8 *Environmental Assessment for the Proposed Construction and Operation of a New Interagency Emergency Operations Center at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1376)

In July 2001, NNSA issued the *Environmental Assessment for the Proposed Construction and Operation of a New Interagency Emergency Operations Center at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE 2001). The purpose for this EA was to evaluate the impacts of the construction and operation of a new Interagency Emergency Operations Center (Center) at TA-69 at LANL. The new Center will include a 30,000-square-foot (2,700-square-meter) facility, a garage, a 130-car parking lot, and a 150-foot-tall (46-meter) fire suppression water storage tank with antenna attachments on about a 5-acre (2-hectare) site. The new Center will be designed as a state-of-the-art multi-use facility housing about 30 full-time UC and Los Alamos County (or their contractor) staff. Under normal operating conditions, the facility will serve as the County fire, police, and 911-dispatch center and the administrative offices for the LANL Emergency Management and Response staff. Up to about 120 Federal, state, local, and tribal representatives may also be accommodated at the Center in the event of an emergency on the general scale of the May 2000 Cerro Grande Fire. The new Center will be designed to meet and withstand, to the extent practical, any anticipated emergency such that emergency response actions will likely not be compromised by the emergency itself. The Finding of No Significant Impact was signed on July 26, 2001. The effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS*.

1.6.1.9 *Environmental Assessment of the Proposed Disposition of the Omega West Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1410)

In March 2002, NNSA issued the *Environmental Assessment of the Proposed Disposition of the Omega West Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE 2002a). This EA was prepared to analyze the environmental consequences of removing the Omega West Facility and the remaining support structures from Los Alamos Canyon. The Proposed Action included the characterization, decontamination of structures (the removal of radiological and chemical contamination to minimize the amount of waste disposed), and the demolition of structures (including the reactor vessel); the segregation, size reduction, packaging, transportation, and disposal of wastes; and removal of several feet of potentially contaminated soil from beneath the Omega West Facility. Under the Proposed Action, two waste disposal options were evaluated. One would involve the transportation of up to 330 covered truckloads [approximately 144,000 cubic feet (4,080 cubic meters)] of radioactive low-level waste to another disposal site or a commercial facility. The other option would involve managing the low-level waste onsite at LANL at TA-54, Area G.

A Phased Removal Alternative was also considered involving similar decontamination and demolition actions as the Proposed Action to ensure the safe removal and disposal of waste resulting from the immediate removal of the support buildings and structures. In the Phased Removal Alternative, the demolition of the reactor vessel and Room 101 of Building 2-1, which houses the empty reactor vessel, would be conducted at an undetermined time in the future before 2025. The Finding of No Significant Impact for the Proposed Action was signed on

March 28, 2002. The effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS*.

1.6.1.10 *Environmental Assessment for the Proposed Future Disposition of Certain Cerro Grande Fire Flood and Sediment Retention Structures at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1408)

In August 2002, NNSA issued the *Environmental Assessment for the Proposed Future Disposition of Certain Cerro Grande Fire Flood and Sediment Retention Structures at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE 2002c). This EA was prepared to analyze the environmental consequences resulting from future disposition of certain flood retention structures built within the boundaries of LANL in the wake of the Cerro Grande Fire. In May 2000, a prescription burn, started on Federally-administered land to the northwest of LANL, blew out of control and was designated as a wildfire. This wildfire, which became known as the Cerro Grande Fire, burned approximately 7,684 acres (3,110 hectares) within the boundaries of LANL. During the fire, a number of emergency actions were undertaken by DOE and NNSA to suppress and extinguish the fire within LANL. Immediately thereafter, NNSA undertook additional emergency actions to address the post-fire conditions. Due to hydrophobic soils (nonpermeable soil areas created as a result of very high temperatures often associated with wildfires) and the loss of vegetation from steep canyon sides caused by the fire, surface runoff and soil erosion on hillsides above LANL were greatly increased over prefire levels. The danger to LANL facilities and structures and homes located down-canyon from the burned area was magnified.

NNSA constructed certain flood and sediment detention structures in the wake of the Cerro Grande Fire as part of its emergency response actions. These structures were built to address the changes in local watershed conditions that resulted from the fire. The long-term disposition of these structures was not considered as part of the decision to undertake the construction actions. Watershed conditions are expected to return to a prefire status or approximate the prefire condition over the next 3 to 8 years. NNSA needs to take actions regarding the disposition of these structures when they are no longer necessary to protect LANL facilities and the businesses and homes located downstream. The structures addressed in this EA are: (1) a flood retention structure constructed of roller-compacted concrete located in Pajarito Canyon; (2) a low-head weir, constructed of rectangular rock-filled wire cages (gabions), and associated sediment detention basin in Los Alamos Canyon; (3) reinforcements of four road crossings, including a land bridge along Anchor Ranch Road in Two-Mile Canyon and State Road 501 embankment reinforcements at Two-Mile Canyon, Pajarito Canyon, and Water Canyon; and (4) a steel diversion wall upstream of TA-18 in Pajarito Canyon.

The Proposed Action is to remove part of the above ground portion of the flood retention structure, including gabions that are currently being installed along the downstream channel. Design studies would be performed at the time of removal to determine the channel width needed and the required slope. At the end of the partial flood retention structure removal, the streambed would be graded, the remaining sides of the flood retention structure would be stabilized, and the banks would be reseeded. The Proposed Action would also include removal of the access road in order for that part of the canyon wall to be recontoured and stabilized if TA-18 facilities remain

in place; if TA-18 facilities are relocated, this access road might remain in place. The area would be monitored and maintained to prevent erosion of the slopes and damage to the flood plain and downstream wetlands. The Proposed Action also includes removal of the entire above ground portions of the steel diversion wall at TA-18. Any removal of the two identified structures would not occur until after the Pajarito watershed has returned to prefire conditions, or the local ecosystem has recovered enough to approximate a prefire condition. The Proposed Action would leave the other subject structures in place with continued performance of routine maintenance activities. The Finding of No Significant Impact was signed on August 7, 2002. The effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS*.

1.6.1.11 *Environmental Assessment for Proposed Access Control and Traffic Improvements at Los Alamos National Laboratory*, Los Alamos, New Mexico (DOE/EA-1429)

In August 2002, NNSA issued the *Final Environmental Assessment for Proposed Access Control and Traffic Improvements at Los Alamos National Laboratory*, Los Alamos, New Mexico (DOE 2002d). This EA was prepared to analyze the environmental consequences resulting from the construction of eastern and western bypass roads around the LANL TA-3 area and the installation of vehicle access controls and related improvements to enhance security along Pajarito Road and in the LANL core area. This Proposed Action would modify the current roadway network and traffic patterns. It would also result in traversing Areas of Environmental Interest identified in the *LANL Habitat Management Plan*, demolition of part of an historic structure at Building 3-40, and traversing several potential release sites and part of the Los Alamos County landfill. The Finding of No Significant Impact was signed on August 23, 2002. The effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS*.

1.6.1.12 *Environmental Assessment for the Installation and Operation of Combustion Turbine Generators at Los Alamos National Laboratory*, Los Alamos, New Mexico (DOE/EA-1430)

In December 2002, NNSA issued a final EA and a Finding of No Significant Impact for a proposal to install and operate two new simple-cycle, gas-fired combustion turbine generators (CTGs), each with an approximate output of 20 megawatts of electricity, as stand-alone structures within the Building-22 Co-generation Complex at TA-3 (DOE 2002g). Installation of the CTGs will occur consecutively and will include installation of two new compressors to provide the gas pressure required for operation of the CTGs. The project will consider two options: (Option A) installation of two CTGs (CTG 1 and CTG 2) that would be used long term as simple-cycle, gas-fired turbine generators without cogeneration capabilities, and (Option B) installation and subsequent conversion of one or both of the installed CTGs from simple-cycle operation to combined-cycle cogeneration at some future date. In addition to these two options for installing and operating the proposed CTGs, the existing steam turbines in the TA-3 Cogeneration Complex will be maintained and refurbished and will continue to be operated long term with the CTGs. The contributory effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS*.

1.6.1.13 *Environmental Impact Statement for the Proposed Relocation of Technical Area 18 Capabilities and Materials at the Los Alamos National Laboratory* (DOE/EIS-319)

In August 2002, NNSA issued the *Final Environmental Impact Statement for the Proposed Relocation of Technical 18 Capabilities and Materials at the Los Alamos National Laboratory* (*TA-18 Relocation EIS*) (DOE 2002e). This EIS evaluated the potential impacts of relocating criticality experiment capabilities and SNM from TA-18, a facility at LANL that supports defense and national security missions. TA-18 is the Nation's only facility currently capable of performing general-purpose nuclear materials handling for a variety of experiments, measurements, nonproliferation safeguards and arms control, and training. The *TA-18 Relocation EIS* evaluated the potential environmental impacts associated with relocating TA-18 capabilities and materials to the following alternative locations: (1) LANL's TA-55; (2) the Device Assembly Facility at NTS (the Preferred Alternative); (3) TA-V at Sandia National Laboratories/New Mexico (SNL/NM); and (4) the Argonne National Laboratory-West (ANL-W), located near Idaho Falls, Idaho. In addition, the *TA-18 Relocation EIS* also evaluated the No Action Alternative of maintaining the capabilities and materials at the present TA-18 location as described in the *LANL SWEIS*, and upgrading these existing facilities to meet current and future DOE environmental safety and health requirements.

In the Record of Decision, published in the *Federal Register* on December 31, 2002 (67 FR 251), DOE decided to relocate TA-18 Security Category I and II capabilities and materials to the Device Assembly Facility at NTS. The contributory effects of ongoing activities at TA-18 have been included in the conditions described for LANL in Chapter 3, "Affected Environment," and are included in the potential cumulative impacts resulting from the *CMRR EIS* proposed action.

1.6.2 Ongoing NEPA Compliance Actions

1.6.2.1 *Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility* (DOE/EIS-0236-S2)

On September 23, 2002, NNSA issued a Notice of Intent in the *Federal Register* (67 FR 59577) to prepare a *Supplemental Programmatic Environmental Impact Statement on Stockpile Stewardship and Management for a Modern Pit Facility (MPF EIS)* in order to decide: (1) whether to proceed with the Modern Pit Facility (MPF); and (2) if so, where to locate the MPF. The draft *MPF EIS* was issued on May 28, 2003; the Notice of Availability was published in the *Federal Register* on June 6, 2003 (68 FR 33934). The final *MPF EIS* is planned for issuance in April 2004.

NNSA is responsible for the safety and reliability of the U.S. nuclear weapons stockpile, including protection of production readiness to maintain that stockpile. Since 1989, DOE has been without the capability to produce plutonium pits (the portion of a nuclear weapon that generates the fission energy to drive modern thermonuclear weapons). NNSA, the Department of Defense (DoD), and Congress have highlighted the lack of long-term pit production capability as a national security issue requiring timely resolution. While an interim capability is currently being established at LANL, classified analyses indicate that this capability will not suffice for

long-term maintenance of the nuclear deterrent that is a cornerstone of U.S. national security policy.

Consistent with the 1996 *SSM PEIS* Record of Decision (61 FR 68014) and the 1999 *LANL SWEIS* Record of Decision (64 FR 50797), NNSA has been reestablishing a small pit manufacturing capability at LANL. The establishment of the interim pit production capacity is expected to be completed in 2007. However, classified analyses indicate that the capability being established at LANL will not support either the projected capacity requirements (number of pits to be produced over a period of time), or the agility (ability to rapidly change from production of one pit type to another, ability to simultaneously produce multiple pit types, or the flexibility to produce pits of a new design in a timely manner) necessary for long-term support of the stockpile. In particular, any systemic problems that might be identified in an existing pit type or class of pits (particularly any aging phenomenon) could not be adequately addressed today nor with the capability being established at LANL. Although no such problems have been identified, the potential increases as pits age. NNSA's inability to respond to such issues is a matter of national security concern. NNSA is responsible for ensuring that appropriate pit production capacity and agility are available when needed, and this Supplement to the *SSM PEIS* is being undertaken to assist NNSA in discharging this responsibility.

The CMRR Facility would provide AC and MC capabilities for existing mission support assignments at LANL that are expected to continue for the long-term. Such AC and MC capabilities are needed independent of the proposed action that will be analyzed in the *MPF EIS* for constructing and operating a new MPF at one of five DOE and NNSA sites across the county. The CMRR Facility could provide AC and MC support capabilities for pit manufacturing at LANL if a decision were made not to construct a new MPF and, instead, to continue to use LANL's existing capabilities and facilities for pit manufacturing (this possibility was explicitly analyzed in the *LANL SWEIS* Expanded Operations Alternative and is implicitly analyzed in this *CMRR EIS*). However, should a decision be made to construct a new MPF at LANL, the level of AC and MC support capabilities required for pit production capacities associated with the new MPF would be beyond LANL's pit production level capacity as described in the LANL SWEIS Expanded Operations Alternative and would also be beyond the level of pit manufacturing AC and MC support that would be provided by the new CMRR Facility. The conceptual design for a new MPF includes locating necessary support capabilities for AC and MC work within the MPF itself – the MPF would be a self-contained facility in that respect. The *MPF EIS* will, accordingly, analyze the direct environmental impacts of AC and MC capabilities for pit manufacturing associated with a new MPF for the various operational level options under consideration for that facility. The cumulative impact section (Section 4.8 of this EIS) provides an assessment of the environmental impacts of constructing and operating both the CMRR Facility and a new MPF at LANL (to the extent those impacts are known or can be currently estimated).

1.6.2.2 *Environmental Assessment for the Proposed Issuance of a Special Use Permit to the Incorporated County of Los Alamos for the Development and Operation of a New Solid Waste Landfill at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1460)

In December 2002, NNSA determined the need to prepare an EA for a proposal by the Incorporated County of Los Alamos to develop and operate a new solid waste landfill within LANL for nonhazardous wastes. The wastes disposed of at this new landfill would be generated by LANL operations and by commercial and residential users within Los Alamos County. The existing Los Alamos County Landfill, also located within the LANL boundaries, would be closed and monitored. The existing landfill site would be used to recycle wastes and compact and bale wastes that could not be recycled. The baled wastes would be trucked periodically to the new landfill for disposal. The EA preparation has been placed on hold pending the development of additional project information. The contributory effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS* (to the extent environmental effects are known or can be currently estimated).

1.6.2.3 *Environmental Assessment for Partial Conversion of an Existing TA-55 Building into a Nondestructive Examination Facility at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EA-1428)

In March 2002, NNSA identified its intent to prepare an EA regarding the renovation of Building 55-41, located within TA-55 at LANL, to accommodate x-ray generators and associated support equipment needed to perform nondestructive examinations of nuclear items and components. Currently, nuclear components and items are shipped from TA-55 to radiography facilities at TA-8 over a distance of approximately 4 miles (6.4 kilometers). This requires implementation of a rolling roadblock when the materials are transported, and setup of a temporary material accountability area at TA-8 while the nondestructive examination procedures take place. The proposed action would provide a more efficient nondestructive radiography capability to support SSM programs at LANL, and eliminate the need for transport outside the security perimeters of TA-55 where nuclear items and components, including pits, are stored or managed. The contributory effects of this action are factored into the assessment of potential cumulative impacts at LANL in the *CMRR EIS* (to the extent that environmental effects are known or can be currently estimated).

1.6.3 Relationships to Other LANL Projects

DOE routinely conducts planning activities at its sites to identify long-term strategies and options for maintaining infrastructure in support of various missions. As part of these efforts, potential projects or actions are identified as options for future consideration. Many of these projects never go beyond the initial planning phases due to various factors such as insufficient justification or inadequate funding.

In order to perform the necessary long-term integrated planning for nuclear facilities capabilities at LANL, NNSA and LANL staff have established the INP effort. As previously stated in Section 1.5, INP is chartered to provide an integrated, coordinated plan for the consolidation of

LANL nuclear facility construction, refurbishment and upgrade, and retirement activities, including those of the proposed CMRR Facility. Security Category I nuclear operations at the CMR Building are discussed in Section 1.1. While proposals regarding CMR activities may fall within the scope of this plan along with other activities such as analytical chemistry, security, and pit manufacturing, NNSA has determined that the CMRR proposal must move forward independent of this broader planning effort to ensure continuous mission support. Many of the activities in this planning effort are in the preliminary phase of consideration and the efforts are too speculative at the present time for NEPA analysis and decision making. To the extent sufficient information is available, this *CMRR EIS* discusses the potential cumulative impacts from other reasonably foreseeable activities at LANL.

1.7 THE SCOPING PROCESS

As a preliminary step in the development of an EIS, regulations established by the CEQ (40 CFR 1501.7) and DOE require "an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action." The purpose of this scoping process is: (1) to inform the public about a proposed action and the alternatives being considered, and (2) to identify and/or clarify issues that are relevant to the EIS by soliciting public comments.

On July 23, 2002, NNSA published a Notice of Intent in the *Federal Register* (67 FR 48160) to prepare the *CMRR EIS*. In this Notice of Intent, NNSA invited public comment on the *CMRR EIS* proposal. During the NEPA process, there are several opportunities for public involvement (see **Figure 1–3**). The Notice of Intent listed the issues initially identified by NNSA for evaluation in the EIS. Public citizens, civic leaders, and other interested parties were invited to comment on these issues and to suggest additional issues that should be considered in the EIS. The Notice of Intent informed the public that comments on the proposed action could be communicated via the U.S. mail, a special DOE website on the Internet, a toll-free phone line, a toll-free fax line, and in person at public meetings to be held in the vicinity of LANL.

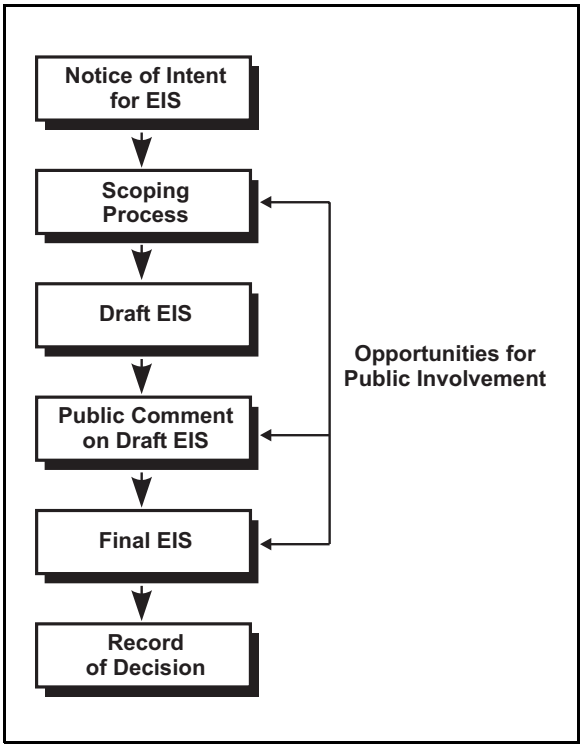


Figure 1–3 NEPA Process

Public scoping meetings were held on August 13, 2002, in Pojoaque, New Mexico and on August 15, 2002, in Los Alamos, New Mexico. As a result of previous experience and positive responses from attendees of other DOE NEPA public meetings and hearings, NNSA chose an interactive format for the scoping meetings. Each meeting began with a presentation by NNSA representatives who explained the proposed CMRR Facility project. Afterwards, the

floor was opened to questions, comments, and concerns from the audience. NNSA representatives were available to respond to questions and comments. The proceedings and formal comments presented at each meeting were recorded verbatim, and a transcript of each meeting was produced. The public was also encouraged to submit written or verbal comments during the meetings, or to submit comments via letters, the DOE website, toll-free phone line, or toll-free fax line, until the end of the scoping period. All comments received during the scoping period were reviewed for consideration by NNSA in preparing this EIS.

It should be noted that, for EIS public scoping purposes, a comment is defined as a single opinion concerning a specific issue. An individual commentor's public statement may contain several such comments. Most of the verbal and written public statements submitted during the EIS scoping period contained multiple comments on various specific issues. These issues are summarized in the following section.

Summary of Major Comments

Approximately 75 comments were received from citizens, interested groups, and local officials during the public scoping period. Many of the verbal and written comments received addressed the need to identify the decontamination and decommissioning of the existing CMR Building, including expected waste streams and volumes, its impact upon the Low-Level Radioactive Solid Waste Disposal Facility (TA-54), and the transportation and security risks that would be associated with transferring any existing inventories of SNM. Additional waste management concerns expressed by commentors included the need to identify the types and volumes of waste generated by the proposed action; the facilities available at each site to treat, store, or dispose of the waste; and compatibility of the proposed action with state and Federal regulations.

Many of the comments also addressed the need for NNSA to describe in detail the existing CMR Building capabilities and processes versus those of the proposed replacement building, as well as the specific NNSA mission requirements supporting the purpose and need for the proposed action. In particular, comments addressed the design and cost of any buildings to be constructed or modified, need for handling containment vessels, validity of experiments to evaluate aging effects on weapons materials, and controls to limit releases to the environment.

Several comments addressed the need for NNSA to describe the relationship of the proposed action to the Stockpile Stewardship Program, other existing DOE NEPA documentation, and proposed new plutonium pit production facilities. In particular, commentors expressed concern over the potential for improper segmentation of analyses and the possible need for an *"integrated TA-55 EIS."*

Commentors also expressed concern about environmental, health, and safety risks associated with the new CMRR Facility operations. They requested that NNSA evaluate the potential consequences of the proposed action on the health and safety of area residents and address environmental justice issues, including the potential impacts to environmental, aesthetic, and cultural resources of adjacent Pueblo lands. Comments also suggested that the EIS quantify all radionuclides and chemicals used and emitted from the proposed replacement building. Concerns were raised about the safety and security of the facilities, including how NNSA would

address possible acts of sabotage, and the risks associated with transferring SNM inventories between the existing CMR Building and the new CMRR Facility.

Major issues identified by NNSA during the scoping process were addressed in this EIS in the following areas:

- Land use and visual resources
- Site infrastructure
- Air quality and noise
- Water resources, including surface water and groundwater
- Geology and soils
- Ecological resources, including terrestrial resources, wetlands, aquatic resources, and threatened and endangered species
- Cultural and paleontological resources, including prehistoric resources, historic resources, and Native American resources
- Socioeconomics, including regional economic characteristics, demographic characteristics, housing and community services, and local transportation
- Environmental justice
- Radiological and hazardous chemical impacts during routine normal operations and accidents
- Waste management and pollution prevention
- Emergency preparedness and security

In addition to these areas, the EIS also addresses monitoring and mitigation, unavoidable impacts and irreversible and irretrievable commitment of resources, and impacts of long-term productivity.

1.8 Issues Raised During the Public Comment Period on the Draft EIS

In April 2003, NNSA published the *Draft Environmental Impact Statement for the Proposed Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico* (DOE/EIS-0350) (*CMRR Draft EIS*). A Notice of Availability and notification of public hearing times and locations was published in the *Federal Register* on May 15, 2003 (68 FR 26296). The regulations implementing NEPA mandate a minimum 45-day public comment period after publication of a draft EIS to provide an opportunity for comment on the draft EIS. In addition, CEQ regulations for implementing NEPA (40 CFR 1503.1), require NNSA to invite affected Federal, state and local governmental agencies; affected American Indian Tribes; and other interested parties and members of the public to comment on the draft EIS. DOE regulations implementing NEPA also require at least one public hearing be held during the public comment period for the purposes of soliciting public comment (10 CFR 1021.313).

The public comment period on the *CMRR Draft EIS* began on May 16, 2003, and ended on June 30, 2003. The public comment period began when the U.S. Environmental Protection Agency (EPA) published its Notice of Availability of the *CMRR Draft EIS* in the *Federal Register*

(68 FR 26606). Public hearings were held on June 3, 2003, at Fuller Lodge in Los Alamos, New Mexico and on June 4, 2003, at the Pablo Roybal Elementary School in Pojoaque, New Mexico. A court reporter and Spanish-language translator were present at the hearings to facilitate and record oral comments. In addition, the public was encouraged to submit written comments via the U.S. mail, e-mail, or by facsimile. A toll-free telephone number was also provided for persons who wished to make oral comments on the *CMRR Draft EIS* during the public comment period.

During the public comment period, 222 comments were received. Most of the comments focused on the following: opposition to all nuclear weapons related activities; opposition to construction and operation of a new CMRR Facility; and suggested revisions to the draft EIS. The reasons cited by commentors for their positions and NNSA's general response to these issues are summarized below.

- *Reasons cited for opposition to all nuclear weapons related activities that could be conducted by NNSA, including those nuclear weapons stockpile mission support activities that could be performed at a new CMRR Facility, included perceived violations of international treaties, philosophical opposition to the possession of or use of nuclear weapons, and a lack of justification for needing AC and MC, and other weapons-related capabilities, based on potential plutonium aging affects.*

- *Reasons cited for opposition to construction and operation of a new CMRR Facility included high cost and potential high radiological accident risks to the general public and adjacent Pueblo lands.*

- *Reasons cited for revising the CMRR Draft EIS included the use of a wildfire, such as the Cerro Grande Fire of May 2000, as an accident initiator, calculation of radiological risks resulting from a criticality accident, and more detailed explanation of liquid low-level radiological waste treatment and disposal.*

While the manufacture, stockpiling and use of nuclear weapons is a subject of continuing national and international debate, this debate is beyond the scope of the *CMRR EIS*, which focuses on evaluating the potential environmental impacts of the proposed action and alternatives. The U.S. Congress and the President ultimately direct the NNSA's national security missions, including AC and MC capabilities and activities. AC and MC mission support capabilities at LANL are conducted in compliance with state, Federal, and international laws and regulations, including the provisions of international treaties. Nuclear weapons are not constructed in the existing CMR Building and would not be constructed in the new CMRR Facility. Activities performed in a new CMRR Facility would support maintenance of the Nation's nuclear weapons stockpile, among other NNSA mission support functions. The need for a new facility to replace the 50-year old aging structure is independent of consideration of potential plutonium aging effects within nuclear weapons.

Although cost is one of several factors that will be considered by NNSA decision makers during preparation of the Record of Decision, it is beyond the scope of the *CMRR EIS*, which focuses on evaluating the potential impacts of the proposed action and alternatives. Detailed cost estimates

for such a construction project have not yet been prepared as it is too early in the planning process. An estimated range of costs (a "ball park" figure) has been prepared that places potential construction costs between $420 million to $955 million, consistent with DOE Order 413.3 requirements for this phase of a project. A detailed cost estimate for the project would be established at Critical Decision 2 (Approval of Performance Baseline) if project planning is allowed to proceed to that stage.

The facility accident impact analysis conducted for the *CMRR EIS* includes analyses of the unmitigated consequences that could result from severe accidents. These unmitigated accidents were included to bound the accident consequences. Such accidents are unlikely to occur, and would, in practice, be mitigated by safety features of and operating procedures for the new CMRR Facility. As discussed throughout Chapter 4 and Appendix C, radiological risks to the public and adjacent Pueblo of San Ildefonso lands would be small.

As discussed in Chapter 3 of this EIS, the Cerro Grande Fire of May 2000 burned approximately 7,684 acres (3,110 hectares) of forested area within the LANL boundary. Buildings at TA-55 were not burned by the fire, and no other key facilities at LANL were burned. The *CMRR EIS* analyzes the consequences of a fire in the main vault as well as a structure-wide fire. The consequences of these accident scenarios would be the same regardless of the initiating event(s) and no changes to the text of the EIS have been made. Criticality accidents were not presented in the *CMRR Draft EIS*, because such accidents are considered to be highly unlikely and would pose little risk to the public. Additional discussion about criticality accidents has been included in the final EIS in response to public comment (see Section C.3.3 of Appendix C). Also, as a result of public comment on the draft EIS, estimates of the volume and descriptive information about the treatment and disposal of liquid low-level radioactive waste generated by CMR operations were revised.

In total, 222 comments were received on the *CMRR Draft EIS* via public comment forms, letters, e-mail, and verbal comments provided at the public hearings. The Environmental Protection Agency (EPA) is required to review and publically comment on environmental impacts by Federal Agencies; the EPA reviewed the draft *CMRR EIS* and classified the project and the document as an "LO", Lack of Objection. Appendix E of this *CMRR EIS* provides copies of the actual comments received, including the EPA's classification letter, and NNSA's individual comment responses.

The following section identifies changes made to the *CMRR EIS* due, in part, to comments received on the draft *CMRR EIS*.

1.9 CHANGES SINCE THE PUBLICATION OF THE DRAFT EIS

In response to comments on the *CMRR Draft EIS*, the final EIS contains some revisions. These revisions are indicated by a double underline for minor word changes or by a side bar in the margin text additions that are a sentence or more in length. Appendix E contains the comments received on the *CMRR Draft EIS* and NNSA's responses to those comments. The most important changes included in the final EIS are listed below.

Issues raised on the draft EIS

A new Section 1.8 was added to summarize the issues raised during the public comment period.

Changes since the issuance of the draft EIS

A new section 1.9 was added to list the changes included in the final EIS.

Other related NEPA reviews

Section 1.6 was revised to include recent information from NEPA documents issued since the issuance of the *CMRR Draft EIS*. Since the issuance of the *CMRR Draft EIS*, the *Modern Pit Facility Draft EIS* was issued.

Nuclear Materials Operational Capabilities and Space for non-LANL Users

Section 2.4.6 was revised to exclude the option of relocating and consolidating Lawrence Livermore National Laboratory Hazard Category 2 operations at the new CMRR Facility.

Summary of Environmental Consequences for the CMRR Replacement Project

The estimated volume of low-level radioactive waste generated by each of the alternatives was revised in Table 2–3 to account for additional solid low-level radioactive waste generated by the treatment of liquid low-level radioactive wastes generated by CMR operations.

Air Quality

Sections 4.3.3, 4.4.3, 4.5.3, and 4.6.3 were revised to discuss the "General Conformity" rule and explained that no conformity analysis would be required, because LANL is located in an attainment area for all criteria pollutants and ambient air quality standards would not be exceeded by the proposed action alternatives. In addition, a paragraph was added to the discussion of the Clean Air Act in Section 5.3 that explains the purpose of conformity reviews.

Groundwater

Section 3.6.2 was revised to clarify the requirements for sources of drinking water beneath LANL per New Mexico Water Quality Control Commission Ground and Surface Water Protection Regulations (NMAC 20.6.2.3000).

Threatened and Endangered Species

Section 3.7.4 was revised to remove the whooping crane (*Gras americana*) from the list of Federal endangered species at LANL. The U.S. Fish and Wildlife Service determined that there are no natural populations of whooping cranes in the LANL area.

Cultural Resources

Sections 3.8.1, 4.3.7.1, and 4.5.7.1 were revised to note the existence of a prehistoric site, eligible for listing on the National Register of Historic Places, located a short distance outside the boundary of TA-55. The prehistoric site near TA-55 could potentially be impacted by the construction and operation of a new CMRR Facility. If demolition of the CMR Building were to occur, it would be an adverse affect on a register-eligible property. Sections 3.8.2, 4.2.7, 4.5.7.2, 4.6.7.2, and 4.7.2 were revised to address the CMR Building's probable eligibility for listing on the National Register of Historic Places.

Radioactive Liquid Waste

Sections 3.12, 3.12.4, and 4.3.11.1 were revised to clarify the treatment of liquid low-level radioactive waste generated by CMR operations at the TA-50 Radioactive Liquid Waste Treatment Facility (RLWTF). The estimated volume of low-level radioactive waste generated by CMR operations was revised in Tables 2–2, 3–15 and 4–16 to account for additional solid low-level radioactive waste generated by the treatment of liquid low-level radioactive wastes. Table 3–16 was also revised to include the RLWTF and its capacity for treating liquid low-level radioactive waste.

Criticality Accident

Section C.3.3 was revised to explain why a criticality accident was excluded from analysis in the draft EIS.

Cumulative Impacts

Section 4.8 was revised to include the cumulative and contributory effects of constructing and operating a proposed MPF at LANL based on information in the *MPF Draft EIS*.

Health Effects Risk Factors

In response to guidance issued by the DOE's Office of NEPA Policy and Compliance (DOE 2003a), health effects risk factors used to calculate radiological health impacts on the public were increased from 0.0005 latent cancer fatalities per rem or per person rem to 0.0006 latent cancer fatalities per person or per person rem. For workers, the risk factors were changed from 0.0004 latent cancer fatalities per rem or per person rem to 0.0006 latent cancer fatalities per rem or person rem. Radiological risks shown in the Summary, Chapter 2, Chapter 4, Appendix B, and Appendix C reflect the increased risk factors.