Tab 1 - Mello aff 3, par 8, ref 5

Bingaman Seeks Funds For Design of Weapons Facility

4/15/1999

BY IAN HOFFMAN
Journal Staff Writer

Sen. Jeff Bingaman is pressing for design of the nation's first new plutonium- and weapons-research facility in more than 20 years.

Bingaman, D-N.M., is seeking $5 million in year 2000 defense funds to design a replacement for Los Alamos National Laboratory's troubled Chemistry and Metallurgical Research building.

Nuclear-disarmament advocates are likely to mount vigorous opposition. They argue a new weapons lab for Los Alamos is just as unnecessary now in the wake of the Cold War as in 1990, when Congress killed lab plans for a $385 million Special Nuclear Materials Laboratory.

"It's like a horror movie: It keeps coming back," said Greg Mello, head of the Santa Fe-based Los Alamos Study Group. "There's nev-

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Bingaman Seeks Funds for Design of Weapons Facility

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er a stake through the heart. When will we wake from the 'Night of the Living Dead' ideas?"

So far, the lab's owners at the U.S. Department of Energy are undecided on seeking a new nuclear-weapons lab for Los Alamos and plan to study the issue for another year. Meanwhile, the DOE plans to continue spending $125 million to keep the CMR, as the building is called, running through 2010.

Inside CMR, scientists and engineers work on nuclear-weapons parts, as well as perform tests for the lab's environmental and cleanup programs. At times, CMR has hosted high-level nuclear waste, tests on nerve gases and a variety of other defense projects.

"There are problems with that building," said Bingaman spokeswoman Kristen Ludecke. "It's not an emergency, but it's a question of whether it would be cost-effective to build a new facility."

With the $5 million, engineers and architects could begin sketching out a rough size and design for the new lab, she said.

"This would not be a Taj Mahal but a scaled-down, streamlined facility that would meet the needs of the lab at a lower cost than they are met now," Ludecke said.

The 1950s-vintage CMR, once the largest building in New Mexico, is a massive holdover of the Cold War that has frustrated efforts to extend its working life. Besides outdated systems — electricity, fire and ventilation — CMR is more contaminated than lab managers once thought. Renovations in 1996 and 1997 ran at least $15 million overbudget and, combined with unsafe building operations, caused lab managers to shut down work at CMR for months.

Last year, geologists found yet another problem: An earthquake fault lies under a third of the building.

Officials of the Defense Nuclear Facilities Safety Board, an oversight agency for the nuclear-weapons complex, say the U.S. Department of Energy should find a new place for its work with weapons-grade plutonium and uranium at the CMR building.

Energy Department and Los Alamos executives say CMR's primary work — analytical chemistry on nuclear-weapons materials — is a unique function that must be replaced.

Critics such as Mello counter that CMR is mostly empty, a building in search of work to justify its existence.

"We've never seen what is going on in the CMR building that needs to be replaced. It's a collection of empty space and projects that don't need to be there," he charges.

Before building a new weapons lab, Mello said, the government should evaluate its current plutonium facilities as well as new ones proposed for Savannah River Site.

In 1990, Bingaman actually had a hand in the demise of LANL's Special Nuclear Materials Laboratory. He wrote a bill amendment requiring the DOE first to report on its need and supply of nuclear materials labs. The DOE never submitted its report, and a House-Senate conference committee killed funds for the Los Alamos project.

"There's a lot of uncertainty because we don't know what the Energy Department's overall approach to plutonium processing is," Bingaman said at the time.

By then, the Energy Department and Los Alamos had 100 people working on the project and already had spent $32 million. Ludecke said Bingaman isn't necessarily committed to building the new lab but wants to "begin the conversation."

"It doesn't lock us into building a new structure," she said. "It shouldn't be taboo to talk about a new building. If the current structure is continuing to deteriorate and cost a great deal to repair, we should be able to examine whether a new building makes sense."

$5 million requested for new LANL complex

4/15/1999

By BARBARA FERRY
The New Mexican

Sen. Jeff Bingaman is seeking federal money to replace a problem-plagued research facility at Los Alamos National Laboratory that sits atop an earthquake fault.

Bingaman, D-New Mexico, has requested $5 million to begin designing a replacement for the Chemistry and Metallurgy Research Building, a 550,000-square-foot research complex which was built in the early 1950s.

Researchers at the complex do chemical studies on plutonium, uranium and other radioactive materials. The building, which employs 350 people, was shut down twice in 1997 because of safety problems.

Money for a new building is not included in President Clinton's budget request, an aide to Bingaman said.

"This is something Sen. Bingaman has decided to push for," said spokeswoman Jude McCartin. "The (CMR) Building is old. It doesn't have proper ventilation. We can continue to make upgrades, but eventually the long-term answer is to get a new building."

Researchers at the complex do chemical studies on plutonium, uranium and other radioactive materials.

She said there have been no estimates of how much a new building would cost, though a DOE official estimated the price would be at least $500 million.

LANL spokesman Jim Danneskiold said the laboratory has "no plans, no drawings for a new building." He referred all other questions about the budget request to the Department of Energy. Al Stotts, a spokesman for the DOE in Albuquerque said the department plans to decide this year what to do with the building.

A Santa Fe disarmament activist said the lab wants to expand its capacity to produce plutonium "pits," or triggers for

Please see LANL, Page B-4

LANL

Continued from Page B-1

nuclear weapons.

"The seismic and other issues surrounding the CMR building provide a public-relations opportunity but not a reason for a new facility," said Greg Mello of the Los Alamos Study Group, who asked, "Why is it that the public is continually asked to fund expansions of nuclear programs or new nuclear facilities under the guise of increasing 'safety?' "

Current DOE plans call for the lab to have the capacity to produce 50 plutonium pits a year by 2005. The CMR building is one of the facilities planned to be used for pit production.

Bruce Hall of Peace Action, a disarmament group headquartered in Washington, D.C., said activists would fight any attempt to spend public money on a new nuclear-production facility at LANL.

"It's pure pork for the lab," Hall said. "With the Cold War over, we have to question why we need to spend more money on nuclear weapons."

In 1980s, a proposal to build a $450 million Special Nuclear Materials Laboratory at LANL sparked community opposition. In 1990, Congress rejected the plan as too expensive.

Safety concerns — including worker accidents — including an explosion that caused $100,000 in damage, safety violations and defects in the complex's fire alarm and ventilation systems led Los Alamos officials to halt work at the CMR building twice. Among other concerns, a federal oversight board, along with lab critics — fear that a catastrophic accident such as a fire could release plutonium into the atmosphere.

DOE already has spent about $62 million on safety upgrades at the building. Renovations were temporarily halted by DOE in 1997 after cost overruns for the first phase of the project reached $15 million. A senior DOE official blamed the overruns on "weak management and poor design effort."

DOE's Stotts said the renovations have resumed and are expected to keep the building running until 2010.

But renovations were further complicated by geologists' discovery of a seismic fault underneath last spring. The 45-year-old building is too old for seismic upgrades, lab officials said in a report.

Tab 2 - Mello aff 3, par 10, ref 8

Alternatives/Options	*Facility Strategies*	*Related Projects*
Facility Upgrades to TA-55. Facility upgrades include refurbishment of existing facilities for plutonium component manufacturing and construction of new space. Additional capabilities include a high energy x-radiography capability and other complimentary NDE techniques as well as cold support laboratory space and changing rooms and offices.	Prepare Pajarito Corridor West Area Master Plan to establish program space requirements and identify suitable sites for facility upgrades.	
Replacement of CMR building functions commensurate with support to future DOE program missions.	Define the requirements of the replacement facility, including location and floor space. Facility should be sized to support all Laboratory analytical chemistry needs (e.g., waste mgmt, non-nuclear components, etc.) Design, build, and operate as a nuclear Cat III, or less, facility. Identify the reuse potential for CMR building. Absent a suitable reuse, estimate cost for D&D and removal.	CMR replacement
Upgraded Sigma building or a new facility to support non-nuclear component manufacturing. A new facility, the Non-nuclear Pit Component Facility (NPCF) has been proposed for construction adjacent to the Sigma building. This facility will include aspects of SM-39, the Laboratory machine shop, and manufacturing capabilities commensurate with limited WR pit production. Potential reuse of the Antares Hall and surrounding facilities at TA-35 for potential manufacturing facilities.	Identify the location, space, and capability requirements for the new NPCF. Determine the affect of new construction on necessary ongoing operations in existing facilities. Can existing buildings at TA-35 currently used for Atlas be reconfigured for NPCF?	
Consolidation of TA-21 capabilities to WETF.	Establish relocation space for TA-21 functions to WETF and define the cost for D&D and removal of TA-21 buildings. Transfer of capability from TA-21 to building 16-450, an addition to the WETF facility. Installation of a third NTT loader in building 450. Reconfigure the basement of building 450 for R&D space.	WETF - roof upgrades **TSE office building**

Tab 3

04-D-125, Chemistry and Metallurgy Research Building Replacement (CMRR) Project, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project Data Sheet (PDS) is for Construction

1. Significant Changes

The CMRR project will construct two principal structures in three project phases. The first phase provides funding to construct the Radiological Laboratory/Utility/Office Building (RLUOB). The second phase, the RLUOB Equipment Installation (REI) effort, procures and installs the Special Facility Equipment (SFE) for the RLUOB. The third phase constructs the Nuclear Facility (NF). The FY 2011 data sheet is restructured to present the budget, costs, baselines and activities for each of the three phases more clearly.

RLUOB: The most recent DOE O 413.3A approved Critical Decision (CD) is CD-3, Approve Start of Construction on October 21, 2005 with a TPC of $164,000,000 and a CD-4 date of February 28, 2010. Construction of the building structure and related systems has been successfully completed.

REI: The most recent DOE O 413.3A approved CD is CD-2/3, Approve Performance Baseline and Start of Construction on July 17, 2009 with a TPC of $199,400,000 and a CD-4 date of April 30, 2013. This phase of the project is currently underway.

NF: The most recent DOE O 413.3A approved CD is CD-1, Approve Alternative Selection and Cost Range. CD-1 was approved on May 18, 2005. After advancement of the design effort, changes in the assumptions for site seismic data, incorporation of lessons learned from previous nuclear projects in nuclear quality assurance construction, resolution of safety concerns identified by the Defense Nuclear Facilities Safety Board, and incorporation of commercial data on material costs and estimated escalation assumptions, the current preliminary cost estimate is over $2,000,000,000 and estimated start of operations by FY 2022.

A Federal Project Director at the appropriate level has been assigned to this project.

This PDS is an update of the FY 2010 PDS.

2. Design, Construction, and D&D Schedule

	(fiscal quarter or date)							
	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete[a]
FY 2004	7/16/2002	1QFY2004	3QFY2006		2QFY2004	1QFY2011	N/A	N/A
FY 2005	7/16/2002	3QFY2004	3QFY2007		3QFY2005	3QFY2012	N/A	N/A
FY 2006	7/16/2002	2QFY2005	1QFY2007	4QFY2005	1QFY2006	4QFY2010	N/A	N/A
FY 2007	7/16/2002	9/30/2005	2QFY2007	1QFY2006	1QFY2006	1QFY2013	TBD	TBD
FY 2008	7/16/2002	9/30/2005	2QFY2009	10/21/2005	1QFY2006	1QFY2013	TBD	TBD

[a] CMR D&D will not be initiated until final start-up of CMRR Nuclear Facility operations, currently projected to occur no earlier than FY 2020. Inclusion of CMR D&D in the FY 2011 budget request is premature. Approval of CD-0 provides formal recognition by DOE/NNSA of the requirement for D&D of the existing CMR Building.

DEPARTMENT OF ENERGY

National Nuclear Security Administration; Notice of Intent To Prepare an Environmental Impact Statement for the Proposed Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, NM

AGENCY: Department of Energy, National Nuclear Security Administration.

ACTION: Notice of intent.

SUMMARY: Pursuant to the National Environmental Policy Act ((NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*), and the DOE Regulations Implementing NEPA (10 CFR part 1021), the National Nuclear Security Administration (NNSA), an agency within the U.S. Department of Energy (DOE), announces its intent to prepare an environmental impact statement (EIS) to assess the consolidation and relocation of mission critical chemistry and metallurgy research (CMR) capabilities at Los Alamos National Laboratory (LANL) from degraded facilities such that these capabilities would be available on a long-term basis to successfully accomplish LANL mission support activities or programs. DOE invites individuals, organizations, and agencies to present oral or written comments concerning the scope of the EIS, including the environmental issues and alternatives that the EIS should address.

DATES: The public scoping period starts with the publication of this Notice in the **Federal Register** and will continue until August 31, 2002. DOE will consider all comments received or postmarked by that date in defining the scope of this EIS. Comments received or postmarked after that date will be considered to the extent practicable. Public scoping meetings will provide the public with an opportunity to present comments, ask questions, and discuss concerns regarding the EIS with NNSA officials. The locations, dates and times for the public scoping meetings are as follows:

August 13, 2002, from 4–8 p.m., Cities of Gold Hotel, Pojoaque, New Mexico

August 15, 2002, from 4–8 p.m., Fuller Lodge, Los Alamos, New Mexico

The DOE will publish additional notices on the dates, times, and locations of the scoping meetings in local newspapers in advance of the scheduled meetings. Any necessary changes will be announced in the local media. Any agency, state, pueblo, tribe, or units of local government that desire to be designated a cooperating agency should contact Ms. Elizabeth Withers at the address listed below by August 16, 2002.

ADDRESSES: Written comments or suggestions concerning the scope of the CMRR EIS or requests for more information on the EIS and public scoping process should be directed to: Ms. Elizabeth Withers, EIS Document Manager, U.S. Department of Energy, National Nuclear Security Administration, Office of Los Alamos Site Operations, 528 35th Street, Los Alamos, New Mexico, 87544; facsimile at (505) 667–9998; or E-mail at *ewithers@doeal.gov.* Ms. Withers may also be reached by telephone at (505) 667–8690.

In addition to providing comments at the public scoping meetings, all interested parties are invited to record their comments, ask questions concerning the EIS, or request to be placed on the EIS mailing or document distribution list by leaving a message on the EIS Hotline at (toll free) 1–877–491–4957. The Hotline will have instructions on how to record comments and requests.

FOR FURTHER INFORMATION CONTACT: For general information on NNSA NEPA process, please contact: Mr. James Mangeno (NA–3.6), NNSA NEPA Compliance Officer, U.S. Department of Energy, 1000 Independence Ave, SW., Washington, DC 20585, or telephone 202–586–8395. For general information about the DOE NEPA process, please contact: Ms. Carol Borgstrom, Director, Office of NEPA Policy and Compliance (EH–42), U.S. Department of Energy, 1000 Independence Avenue SW, Washington, DC 20585, (202) 586–4600, or leave a message at 1–800–472–2756.

SUPPLEMENTARY INFORMATION: Los Alamos National Laboratory (LANL) is located in north-central New Mexico, 60 miles north-northeast of Albuquerque, 25 miles northwest of Santa Fe, and 20 miles southwest of Española in Los Alamos and Santa Fe Counties. It is located between the Jemez Mountains to the west and the Sangre de Cristo Mountains and Rio Grande to the east. LANL occupies an area of about 27,800 acres or approximately 43 square miles and is operated for DOE NNSA by a contractor, the University of California. It is a multidisciplinary, multipurpose institution engaged in theoretical and experimental research and development. LANL has been assigned science, research and development, and production NNSA mission support activities that are critical to the accomplishment of the NNSA national security objectives (as reflected in the Stockpile Stewardship and Management Programmatic EIS (DOE/EIS–0236). Specific LANL assignments for the foreseeable future include production of War-Reserve (WR) products, assessment and certification of the stockpile, surveillance of the WR components and weapon systems, ensuring safe and secure storage of strategic materials, and management of excess plutonium inventories. In addition, LANL also supports actinide (actinides are any of a series of elements with atomic numbers ranging from actinium-89 through lawrencium-103) science missions ranging from Plutonium-238 heat-source program 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.

The capabilities needed to execute the NNSA mission activities require facilities at LANL that can be used to handle actinide 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 Technical Areas (TAs) 3 and 55, respectively), which are used for processing, characterizing and storage of special nuclear material. 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. Other unique capabilities are located at the Plutonium Facility. 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.

Mission critical CMR capabilities at LANL support NNSA's stockpile stewardship and management 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 over 50 years old and many of its systems and structural components are in need of being upgraded, refurbished, or replaced. Recent studies conducted in the late 1990s have identified a seismic fault trace located beneath the CMR Building, which greatly enhances the level of structural upgrades needed at the CMR

Building to meet current structural seismic code requirements for a Hazard Category 2 nuclear facility. Performing the needed repairs, upgrades and systems retrofitting for long-term use of the aging CMR Building to allow it to adequately house the mission critical CMR capabilities would be extremely difficult and cost prohibitive. 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 would preclude the full implementation of the level of operation DOE decided upon through its Record of Decision for the 1999 LANL Site-wide Environmental Impact Statement for the Continued Operation of Los Alamos National Laboratory (DOE/EIS–0238). CMR capabilities are necessary to support the current and directed stockpile work and campaign activities at LANL. The currently estimated end-of-life for the existing CMR Building is about 2010. The CMR Building is near the end of its useful life and action is required by NNSA to assess alternatives for continuing these activities for the next 50 years.

Currently, NNSA expects that the CMR Building Replacement Project EIS (CMRR EIS) will evaluate the environmental impacts associated with relocating the CMR capabilities at LANL to the new buildings sited at the following alternative locations: (1) Next to the Plutonium Facility at Technical Area 55 (TA–55) at LANL (the Proposed Action), or (2) a ''greenfield'' site(s) at or near TA–55. NNSA will evaluate performing minimal necessary structural and systems upgrades and repairs to portions of the existing CMR Building and continuing the use of these upgraded portions of the structure for office and light laboratory purposes, as well as evaluating the potential decontamination and demolition of the entire existing CMR Building as disposition options coupled with the alternatives for construction and operation of new nuclear laboratory facilities at the two previously identified locations. The EIS would also consider the performance of minimal necessary structural and systems upgrades and repairs to the existing CMR Building as a no-action alternative with continued maintenance of limited mission critical CMR capabilities at the CMR Building. It is possible that this list of reasonable alternatives may change during the scoping process.

The CMR Building contains about 550,000 square feet (about 51,100 square meters) of floor space on two floors divided between a main corridor and seven wings. It was constructed to 1949 Uniform Building Codes in the late 1940s and early 1950s. DOE has maintained and upgraded the building over time to provide for continued safe operations. In 1992, DOE initiated planning and implementation of CMR Building upgrades intended to address specific safety, reliability, consolidation and safeguards issues (these were the subject of DOE/EA–1101). These upgrades were intended to extend the useful life of the CMR Building an additional 20 to 30 years. However, in 1997 and 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, the DOE determined that the originally planned extensive upgrades to the building would be much more expensive and time-consumptive than had been identified. Furthermore, the planned upgrades would be marginally effective in providing the required operational risk reduction and program capabilities to support NNSA mission assignments at LANL. As a result, in January 1998, the DOE directed the down-scope of the CMR Building upgrade projects to only those upgrades needed to ensure safe and reliable operations through about the year 2010. CMR Building operations and capabilities are currently being restricted in scope due to safety and security constraints; it is not being operated to the full extent needed to meet the DOE NNSA operational requirements established in 1999 for the foreseeable future over the next 10 years. In addition, continued support of LANL's existing and evolving missions roles are anticipated to require additional capabilities such as the ability to handle large containment vessels in support of Dynamic Experiments.

In January 1999, the NNSA approved a strategy for managing operational risks at the CMR Building. The strategy included implementing operational restrictions to ensure safe operations. These restrictions are impacting the assigned mission support CMR activities conducted at the CMR Building. This management strategy also committed NNSA to developing long-term facility and site plans to relocate the CMR capabilities elsewhere at LANL by 2010, as necessary to maintain continuing LANL support of national security and other NNSA missions.

Purpose and Need: NNSA needs 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 is prudent to provide extra space for future anticipated capabilities or activities requirements.

Proposed Action and Alternatives: The Proposed Action (Preferred Alternative) is to construct a new facility at TA–55 composed of two or three buildings to house the existing CMR Building capabilities. One of the new buildings would provide space for administrative offices and support activities; the other building(s) would provide secure laboratory spaces for research and analytical support activities. Construction of the laboratory building(s) at above ground level would be considered. Tunnels may be constructed to connect the buildings. At a minimum, the buildings would operate for the next 50 years. A parking lot or structure would also be constructed as part of the Proposed Action.

Reasonable alternatives to the proposed action have not been definitively identified, but could include construction of a new CMR facility at a nearby location to TA–55 within an undeveloped ''greenfield'' area. Another alternative could consider continuing use of portions of the existing CMR Building with the implementation of minimal necessary structural and systems upgrades and repairs for office and light laboratory purposes, together with the construction of new nuclear laboratory facilities at the two previously identified locations. If either of the two alternatives were chosen that would completely remove CMR activities from the existing CMR Building, options for the disposition of the existing CMR Building could include an option for continuing use of the existing CMR Building with the implementation of minimal necessary structural and systems upgrades and repairs for offices or other purposes appropriate to the condition of the structure, and an option for complete decontamination and demolition of the entire CMR Building with subsequent waste disposal. As required by the Council on Environmental Quality NEPA regulations, a No Action alternative will also be evaluated. The No Action alternative would be to continue the current use of the CMR Building for CMR operations with minimal structural and equipment component replacements and repairs so that it could continue to function,

although the CMR capabilities would likely be restricted to minimal levels.

Potential Issues for Analysis: NNSA has tentatively identified the following issues for analysis in this EIS. Additional issues may be identified as a result of the scoping process.

1. Potential human health impacts (both to members of the public and to workers) related to the proposed new facility and anticipated LANL nearby activities during normal operations and reasonably foreseeable accident conditions.
2. Potential impacts to air, water, soil, visual resources and viewsheds associated with constructing new buildings, relocating and continuing CMR operations.
3. Potential impacts to plants and animals, and to their habitats, including Federally-listed threatened or endangered species and their critical habitats, wetlands and floodplains, associated with constructing new buildings, relocating and continuing CMR operations.
4. Potential impacts from geologic site conditions and land uses associated with constructing new buildings, relocating and continuing CMR operations.
5. Potential impacts from irretrievable and irreversible consumption of natural resources and energy associated with constructing new buildings, relocating and continuing CMR operations.
6. Potential impacts to cultural resources, including historical and prehistorical resources and traditional cultural properties, from constructing new buildings, relocating and continuing CMR operations.
7. Potential impacts to infrastructure, transportation issues, waste management, and utilities associated with constructing new buildings, relocating and continuing CMR operations.
8. Potential impacts to socioeconomic conditions from constructing new buildings, relocating and continuing CMR operations.
9. Potential environmental justice impacts to minority and low-income populations as a result of constructing new buildings, relocating and continuing CMR operations.
10. Potential cumulative impacts from the Proposed Action and other past, present, and reasonably foreseeable actions at LANL.

NNSA anticipates that certain classified information will be consulted in the preparation of this CMRR EIS and used by decision-makers to decide where and how to relocate the CMR capabilities from the existing CMR Building. This EIS may contain a classified appendix. To the extent allowable, the EIS will summarize and present this information in an unclassified manner.

Related NEPA Reviews: Following is a summary of recent NEPA documents that may be considered in the preparation of this EIS and from which this EIS may be tiered, and of future EISs that may be in preparation simultaneously with the CMRR EIS. The CMRR EIS will include relevant information from each of these documents.

- The Final Stockpile Stewardship and Management Programmatic Environmental Impact Statement (SSM PEIS) (DOE/EIS–0236). The SSM PEIS addressed the facilities and missions to support the stewardship and management of the U.S. nuclear stockpile. The Record of Decision (ROD) was issued in 1996 and identified stewardship and management mission support activities assigned to LANL, in particular, the reestablishment of DOE's plutonium pit production capability.
- The Final Los Alamos National Laboratory Site-Wide Environmental Impact Statement (SWEIS) (DOE/EIS–0238). The SWEIS analyzed four levels of operations alternatives for LANL to meet its existing and potential future program assignments: The No Action Alternative, the Expanded Operations Alternative, the Reduced Operations Alternative, and the Greener Alternative. The SWEIS also provided project specific analysis for two proposed projects: The Expansion of TA–54/Area G Low Level Waste Disposal Area; and Enhancement of Plutonium Pit Manufacturing. The SWEIS Record of Decision identified the Expanded Alternative with reduced pit manufacturing capabilities as the level of operations DOE would undertake at LANL over the next ten years.
- The Draft Environmental Impact Statement for the Proposed Relocation of Technical Area 18 Capabilities and Materials at Los Alamos National Laboratory (TA–18 EIS) (DOE/EIS–0319). The TA–18 EIS considers relocating the TA–18 criticality mission activities to another location at LANL; to the Nevada Test Site near Las Vegas, Nevada; to Sandia National Laboratory at Albuquerque, New Mexico; or to the Argonne National Laboratory—West near Idaho Falls, Idaho. If retained at LANL, the TA–18 activities could be housed in new buildings constructed next to the Plutonium Facility at TA–55; could remain in the current facilities without any upgrades; or could remain in upgraded facilities at TA–18.
- The NNSA is considering initiation of the preparation of an EIS on the proposed Modern Pit Facility. As the analysis for this new facility progresses it will be incorporated, if applicable, into the CMRR EIS to the extent practicable.

Public Scoping Process: The scoping process is an opportunity for the public to assist the NNSA in determining the alternatives and issues for analysis. The purpose of the scoping meetings is to receive oral and written comments from the public. The meetings will use a format to facilitate dialogue between NNSA and the public and will be an opportunity for individuals to provide written or oral statements. NNSA welcomes specific comments or suggestions on the content of these alternatives, or on other alternatives that could be considered. The above list of issues to be considered in the EIS analysis is tentative and is intended to facilitate public comment on the scope of this EIS. It is not intended to be all-inclusive, nor does it imply any predetermination of potential impacts. The CMRR EIS will describe the potential environmental impacts of the alternatives, using available data where possible and obtaining additional data where necessary. Copies of written comments and transcripts of oral comments will be available at the following locations: Los Alamos Outreach Center, 1350 Central Avenue, Suite 101, Los Alamos, New Mexico, 87544; and the Zimmerman Library, University of New Mexico, Albuquerque, New Mexico 87131.

Issued in Washington, DC, this 15th day of July, 2002.

Linton Brooks,

Acting Administrator, National Nuclear Security Administration.

[FR Doc. 02–18552 Filed 7–22–02; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP02–259–001]

Algonquin Gas Transmission Company; Notice of Compliance Filing

July 17, 2002.

Take notice that on July 10, 2002, Algonquin Gas Transmission Company (Algonquin) tendered for filing as part of its FERC Gas Tariff, Fourth Revised Volume No. 1, Sub Second Revised Sheet No. 641, to be effective on July 1, 2002.

Algonquin states that the purpose of this filing is to comply with the directives of the Commission's Letter

Tab 5 - Mello aff 3, par 11, ref 13 & 14

FY 2003 PED design projects are described below. While not anticipated, some changes may occur due to continuing conceptual design studies or developments occurring after submission of this data sheet. These changes will be reflected in subsequent years. Preliminary estimates for the cost of Title I and II design and engineering efforts for each subproject are provided, as well as very preliminary estimates of the Total Estimated Cost (including physical construction) of each subproject.

FY 2003 Proposed Design Projects

03-01: Chemistry and Metallurgy Research Building Replacement (CMRR) Project, LANL

Fiscal Quarter				Total Estimated Cost (Design Only ($000)	Preliminary Full Total Estimated Cost Projection ($000)
A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
3Q 2003	4Q 2006	2Q 2005	TBD	55,000	350,000-500,000

Fiscal Year	Appropriations	Obligations	Costs
2003	10,000	10,000	8,000
2004	25,000	25,000	24,500
2005	20,000	20,000	20,500
2006	0	0	2,000

This subproject includes the preliminary and final (Title I and Title II) design for the proposed Chemistry and Metallurgy Research Building Replacement (CMRR) Project at Los Alamos National Laboratory. The existing Chemistry and Metallurgy Research (CMR) Building is a Hazard Category 2 nuclear facility that is over fifty years old. CMR actinide chemistry research capabilities are vital to fulfil several critical LANL missions, including but not limited to, pit rebuild, pit surveillance and pit certification. In January 1999, DOE approved a strategy for managing risks at the CMR facility. This approval committed DOE and LANL on a course to upgrade and temporarily continue to operate the CMR facility through approximately 2010 with operational limitations. This approval also committed DOE and LANL to develop long-term facility and site plans to ensure continuous mission support beyond the year 2010. It was acknowledged that mission support beyond 2010 may require new facilities. The design project includes the preliminary and final (Title I and Title II) design for the proposed Chemistry and Metallurgy Research Building Replacement (CMRR) Project.

Tab 6 - Mello aff 3, par 86, ref 62

04-D-125, Chemistry and Metallurgy Research Facility Replacement, Los Alamos National Laboratory Los Alamos, New Mexico

The Total Estimated Cost for design of the Chemistry and Metallurgy Research Facility Replacement (CMRR) project has been decreased by $40,500,000 from the original Project Engineering and Design (PED) estimate (03-D-103) due to a revised acquisition strategy, whereby a design-build approach will be utilized. Under this approach, the design funding decrement has been moved out of PED and is requested within the construction part of this line item project.

1. Construction Schedule History

	Fiscal Quarter				Total Estimated Cost ($000)	Total Project Cost ($000)
	A-E Work Initiated	A-E Work Completed	Physical Construction Start	Physical Construction Complete		
FY 2004 Budget Request *(Preliminary Estimate)*.	1Q 2004	3Q 2006	2Q 2004 [a]	1Q 2011	500,000 [b]	600,000

An estimate of two-thirds of this amount ($400 million) is associated with CMRR-NF, and $200 million with RLUOB, in the table in paragraph 86. This 2:1 cost ratio between the two buildings is used in the table from FY2003 to FY 2007.

[a] Physical Construction Start: 2Q 2004 for light lab/office buildings and 3Q 2006 for Hazard Category II and III/IV buildings.

[b] The TEC includes the cost of design activities ($14,500,000) appropriated in 03-D-103, Project Engineering and Design (PED) to support design-build acqusition. This is a preliminary baseline estimate. The performance baseline will be established following completion of preliminary design and Critical Decision 2.

Project Engineering and Design funding provided in FY 2003 ($10,000,000) and FY 2004 ($4,500,000) will be used for preliminary design activities for both the Light Laboratory/Office Building and Nuclear Laboratory(s) elements of the project. FY 2004 construction funding requested in this line item will be used for initiation of design and construction for the light laboratory/office building component of CMRR and initiation of design activities for nuclear laboratory(s).

Scope

The scope for this project was developed through joint LANL/NNSA Integrated Nuclear Planning (INP) activities and workshops. The major CMRR scope elements resulting from INP activities are:

- Relocate existing CMR analytical chemistry and material characterization (AC/MC) capabilities at LANL.
- Special nuclear material storage for CMR AC/MC working inventory and overflow capacity for PF-4.

In addition to these two major elements, the following elements will be evaluated during conceptual design through the completion of option studies:

- Contingency space to accommodate future mission requirements.
- Large vessel containment and processing capabilities.
- Non-LANL user space requirements.
- Consolidation of LANL PF-4 AC/MC capabilities.

Net space requirements for the above listed scope elements within CMRR were developed through a LANL/NNSA INP workshop conducted in July 2001. The following space requirements were identified:

- 60,000 gross square feet of Hazard Category II space for AC/MC, large vessel containment and processing, material storage, and contingency space.
- 60,000 gross square feet of Hazard Category III/IV space for AC/MC and contingency space.
- 90,000 gross square feet for a light laboratory/office building.

Project Milestones

Light Lab/Office Building (design-build)

FY 2004	Initiate Design	1Q
FY 2004	Initiate Construction	2Q

Nuclear Laboratory(s)

FY 2004	Complete Conceptual Design	4Q
FY 2005	Complete Title I – Preliminary Design	1Q
FY 2006	Complete Title II – Final Design	3Q
FY 2011	Complete Title III – Construction	1Q
FY 2012	Complete Transition/Closeout	1Q

Construction Option 1: For the purpose of this EIS analysis, Construction Option 1 was considered to be the option that would bound the potential environmental impacts resulting from construction activities. Thus, Construction Option 1 is the reference case for estimating the impacts for all action alternatives. This construction option includes separate SNM-capable Hazard Category 2 and 3 laboratories constructed above ground with a separate administrative offices and support functions building also constructed above ground. The requirements for each facility are as follows:

- Hazard Category 2 Building: Total square footage of approximately 100,000 square feet (9,290 square meters), with total disturbed construction site of approximately 2.5 acres (1 hectare). The maximum depth of excavation for construction would be no more than 50 feet (15.2 meters).

- Hazard Category 3 Building: Total square footage of approximately 100,000 square feet (9,290 square meters), with total disturbed construction site of approximately 2.25 acres (0.9 hectares). The maximum depth of excavation for construction would be no more than 50 feet (15.2 meters).

- Administrative Offices and Support Functions Building: Total square footage of approximately 200,000 square feet (18,580 square meters) dispersed over several stories, with a total disturbed construction site of approximately 4.0 acres (1.6 hectares). One or more floors could be constructed below ground with a maximum depth of excavation approximately 50 feet (15.2 meters). The building would contain a lite laboratory capable of handling materials up to a Hazard Category designation of Radiological Facility (less than 8.4 grams of plutonium-239 equivalent radioactive material), and would also include a utility structure housing utility equipment and services for all elements of the CMRR Facility. This utility structure would house power, hot water, heat, sanitary sewer, and chilled water services for the entire CMRR Facility. The utility structure [approximately 25,000 square feet (2,323 square meters)] is included in the total estimated square footage for the administrative offices and support functions building. This building aboveground would be a maximum height of three stories, or approximately 35 feet (10.7 meters) aboveground level.

In implementing this construction option with either Alternative 1 (Preferred Alternative) or Alternative 3, connecting tunnels would be constructed. These tunnels would be used for belowground linkage of the CMRR Facility as well as linkage with the Plutonium Facility at TA-55. In Alternative 1, the estimated length of tunnels would be approximately 1,200 feet (366 meters), and depth of excavations would be no more than 50 feet (15 meters). In Alternative 3, the estimated length of tunnels would be approximately 750 feet (229 meters), with a depth of excavation of approximately 50 feet (15 meters). These tunnels would be constructed utilizing cut-and-cover construction methods requiring specialized safety, security, and waterproofing methods. Alternatives 2 and 4 would require slightly larger facility support space requirements for such capabilities as shipping and receiving of materials into and out of the CMRR Facility. This space would be no more than one percent of the total 200,000 square foot (18,580 square meters) total.

Construction Option 2: This construction option includes the same building elements as Construction Option 1, with the exception that the SNM-Capable Hazard Category 2 building would be constructed below grade. For the Hazard Category 2 building, the maximum depth of excavation would increase to approximately 75 feet (23 meters). Excavated materials would be stockpiled onsite and would be used for regrading and constructing berms for the PIDAS around the facility. All other assumptions for the Hazard Category 3 and the administrative offices and support functions building would be the same as described in Construction Option 1.

Construction Option 3: This construction option includes a single consolidated SNM-capable Hazard Category 2 laboratory and a separate administrative offices and support functions building.

In this option, all Hazard Category 2 and 3 operations would be housed in the single Hazard Category 2 laboratory. The Hazard Category 2 building would contain a total of approximately 200,000 square feet (18,580 square meters) and be constructed with one floor below grade containing the Hazard Category 2 operations, and one floor above grade containing Hazard Category 3 operations. All assumptions for the administrative offices and support functions building would be the same as described in Construction Option 1.

In implementing this construction option with Alternatives 1 and 3 (at TA-55), connecting tunnels between the CMRR Facility and the Plutonium Facility would be excavated to a maximum depth of 50 feet (15 meters), with the estimated total length of tunnels approximately 1,200 feet (366 meters) for Alternative 1, and 500 feet (152 meters) for Alternative 3.

Construction Option 4: This option includes a single consolidated SNM-capable Hazard Category 2 laboratory constructed below grade and a separate administrative offices and support functions building.

As with Construction Option 3, all Hazard Category 2 and 3 operations would be housed in the single Hazard Category 2 laboratory constructed below grade. Maximum depth of excavation would be 75 feet (23 meters). All assumptions for the administrative offices and support functions building would be the same as described in Construction Option 1. Assumptions with respect to the connecting tunnels between facility elements would the same as Construction Option 3.

General Construction Requirements for All Construction Options: Construction methods and materials employed on the CMRR project would be typical conventional light[3]-industrial for the administrative offices and support functions building and heavy-industrial, nuclear facility construction for the CMRR project nuclear laboratory elements. Information that is common to all the construction activities encompassed by the four construction options and four action alternatives is presented in the following paragraphs. A summary of construction requirements is presented in **Table 2–1**.

[3]*Light industry refers to the use of small-scale construction machinery.*

Construction methods and materials employed on the CMRR Project would be typical conventional light[6] industrial for the administrative offices and support functions building, and heavy-industrial, nuclear facility construction for the CMRR nuclear laboratory elements. **Table S–1** provides a summary of construction requirements.

Table S–1 Summary of CMRR Construction Requirements

Building/Material Usage	*Hazard Category 2 Building*	*Hazard Category 3 Building*	*Administrative Offices and Support Functions Building*	*Other Construction Elements*
Land (acres)	2.5	2.25	4.0	18 [a]
Water (gallons)	757,300	670,500	1,354,500	963,000
Electricity (megawatt-hours)	88.75	88.75	135	Not applicable
Concrete (cubic meters)	1,375	1,067	2,340	Not applicable
Steel (metric tons)	136	106	265	Not applicable
Peak construction workers	300			
Waste (non-hazardous) (metric tons)	130	99	295	10
Construction period (months)	17	17	26	6

[a] The land affected by other construction elements would include: parking (5 acres), laydown area (2 acres), concrete batch plant (5 acres) at either TA-55 or TA-6. Additionally 6 acres of land would be affected at TA-55 due to road realignment. An equal area (6 acres) at TA-6 would be affected for extensive trenching for utilities (1.5 acres), radioactive liquid waste pipeline (3 acres), and new road (1.5 acres).

Project Schedule: For the purpose of the analysis in the *CMRR EIS*, it was estimated that construction under any of the alternatives would start late in 2004 and would last approximately 5 years. The new facilities would be designed for a lifetime performance of 50 years; therefore, operations are projected to range from 2010 to 2060. It is also anticipated that simultaneous operation of the existing CMR Building and the new CMRR Facility would last a maximum of 4 years, between about 2010 and 2014.

Operational Characteristics: The operational characteristics of the CMRR Facility are based on the level of operations identified by the Expanded Operations Alternative in the 1999 *LANL SWEIS* and are presented in **Table S–2**.

Transportation: Radioactive and SNM shipments would be conducted within the LANL site. Transport distances would vary across alternatives, from a very short distance [about 100 to 300 feet (30 to 90 meters)] in Alternative 1, at TA-55, to about 3 to 5 miles (5 to 8 kilometers) in Alternative 2, at TA-6. Movement of materials would occur on DOE-controlled roads. DOE procedures and U.S. Nuclear Regulatory Commission regulations would not require the use of certified Type B casks within DOE sites. However, DOE procedures require closing the roads and stopping traffic for shipment of material (fissile or SNM) in noncertified packages. Shipment using certified packages, or smaller quantities of radioactive materials and SNM, could be performed while site roads are open. As part of current security implementation procedures at LANL, the roads used to transport radioactive and SNM materials under the *CMRR EIS* would have limited public access. The proposed action would include a one-time transport of some or all of the equipment at the CMR Building to the new CMRR Facility at TA-55 or TA-6. This movement would occur over a period of 2 to 4 years on open or closed roads.

[6] *Light industry refers to the use of small-scale construction machinery.*

Tab 9 - Mello Aff #1, par 7, ref 2: http://edocket.access.gpo.gov/2004/pdf/04-3096.pdf

now be consistent with the approach currently used for applications for certification of natural gas facilities. The attached document provides an overview for starting the process. Additional information is available on the Commission's Web site at *http://www.ferc.gov/industries/hydropower/enviro/third-party/tpc.asp.*

Magalie R. Salas,

Secretary.

Office of Energy Projects; Third-Party Contracting Program

The Office of Energy Project's voluntary ''third-party contracting'' (3–PC) program enables applicants seeking certificates for natural gas facilities or licenses for hydroelectric power projects to fund a third-party contractor to assist the Commission in meeting its responsibilities under the National Environmental Policy Act of 1969.

The 3–PC program involves the use of independent contractors to assist Commission staff in its environmental review and preparation of environmental documents. A third-party contractor is selected by, and works under the direct supervision and control of Commission staff, and is paid for by the applicant. Prospective applicants considering participation in this 3–PC program should meet with Commission staff to discuss their proposals, and to answer any questions they might have relative to the program itself.

Applicants electing to participate in the 3–PC program will be required to prepare a draft Request for Proposal (RFP) for review and approval by the Commission staff before it is issued. The RFP will be required to include screening criteria, and an explanation of how the criteria will be used to select among the contractors who respond to the RFP. Subsequently, applicants would issue the approved RFP and screen all proposals received for technical adequacy and Organizational Conflict of Interest (OCI). The applicant is responsible for reviewing carefully all OCI materials (submitted for the prime and each proposed subcontractor as part of each proposal) to determine whether the candidate is capable of impartially performing the environmental services required under the third-party contract. The applicant will then submit to Commission staff the technical and cost proposals and OCI statements of their three best qualified candidates.

Final contractor selection will be made by Commission staff based on an evaluation of the technical, managerial, and personnel aspects of the candidates' proposals as well as OCI considerations. While bid fees will not necessarily be the controlling factor in the selection of the third-party contractor, relative cost levels will be considered. Commission staff will send the applicant an approval letter clarifying any details and/or resolving any issues that remain outstanding following review of the selected third-party contractor's proposal.

As soon as practical, the applicant will award a contract to the third-party contractor letter. The applicant and the contractor will determine the appropriate form of agreement for payment of the contractor by the applicant. Because the applicant will actually award the contract to the third-party contractor, it will be the applicant's responsibility to answer questions from candidates not selected.

The information provided above is intended to give a quick overview of the 3–PC program and how to get started. Detailed guidance specific to the gas and hydro process will be available soon. In the interim, applicants with specific questions about the 3–PC program can contact the following Commission staff:

Gas Certificate 3–PC program: Richard R. Hoffmann, Director, Division of Gas—Environment and Engineering, telephone (202) 502–8066, Office of Energy Projects, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426; *http://www.ferc.gov/industries/gas/enviro/third-party/tpc.asp.*

Hydropower Licensing 3–PC program: Ann F. Miles, Director, Division of Hydropower—Environment and Engineering, telephone (202) 502–6769, Office of Energy Projects, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426; *http://www.ferc.gov/industries/hydropower/enviro/third-party/tpc.asp.*

Inquiries regarding OCI should be directed to: David R. Dickey, Staff Attorney, General and Administrative Law (GC–13), telephone (202) 502–8527, Office of General Counsel, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426.

Inquiries regarding ex parte *should be directed to:* Carol C. Johnson, Staff Attorney, General and Administrative Law (GC–13), telephone (202) 502–8521, Office of General Counsel, Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426.

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DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP04–51–000]

Paiute Pipeline Company; Notice of Rescheduling of Technical Conference

February 4, 2004.

In its Order issued December 4, 2003,[1] the Commission directed that a technical conference be held to better understand several aspects of Paiute Pipeline Company's November 7, 2003 tariff filing pertaining to segmentation and backhaul transportation.

Take notice that the technical conference has been rescheduled for Wednesday, February 25, 2004 at 10 a.m., in a room to be designated at the Regulatory Commission, 888 First Street, NE., Washington, DC 20426.

All interested persons and staff are permitted to attend. Parties that wish to participate by phone should contact Sharon Dameron at (202) 502–8410 or at *sharon.dameron@ferc.gov* no later than Wednesday, February 18, 2004.

Magalie R. Salas,

Secretary.

[FR Doc. E4–261 Filed 2–11–04; 8:45 am]

BILLING CODE 6717–01–P

[1] Paiute Pipeline Company, 105 FERC ¶ 61,271

DEPARTMENT OF ENERGY

National Nuclear Security Administration

Record of Decision: Final Environmental Impact Statement for the Chemistry and Metallurgy Research Building Replacement Project, Los Alamos National Laboratory, Los Alamos, NM

AGENCY: National Nuclear Security Administration, Department of Energy.

ACTION: Record of decision.

SUMMARY: The U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA) is issuing this record of decision on the proposed replacement of the existing Chemistry and Metallurgy (CMR) Building at Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico. This record of decision is based upon the information contained in the ''Environmental Impact Statement for the Proposed Chemistry and Metallurgy Research Building Replacement Project, Los Alamos National Laboratory, Los Alamos, New Mexico'', DOE/EIS–0350 (CMRR EIS), and other factors, including the programmatic and technical risk, construction requirements, and cost. NNSA has decided to implement the preferred alternative, alternative 1, which is the construction of a new CMR Replacement (CMRR) facility at LANL's Technical Area 55 (TA–55). The new CMRR facility would include a single, above-ground, consolidated special nuclear material-capable, Hazard Category 2 laboratory building (construction option 3) with a separate administrative office and support functions building. The existing CMR building at LANL would be decontaminated, decommissioned, and demolished in its entirety (disposition option 3). The preferred alternative includes the construction of the new CMRR facility, and the movement of operations from the existing CMR

building into the new CMRR facility, with operations expected to continue in the new facility over the next 50 years.

FOR FURTHER INFORMATION CONTACT: For further information on the CMRR EIS or record of decision, or to receive a copy of this EIS or record of decision, contact: Elizabeth Withers, Document Manager, U.S. Department of Energy, Los Alamos Site Office, 528 35th Street, Los Alamos, NM 87544, (505) 667–8690. For information on the DOE National Environmental Policy Act (NEPA) process, contact: Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (EH–42), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–4600, or leave a message at (800) 472–2756.

SUPPLEMENTARY INFORMATION:

Background

The NNSA prepared this record of decision pursuant to the regulations of the Council on Environmental Quality for implementing NEPA (40 CFR parts 1500–1508) and DOE's NEPA implementing procedures (10 CFR part 1021). This record of decision is based, in part, on information provided in the CMRR EIS.

LANL is located in north-central New Mexico, about 60 miles (97 kilometers) north-northeast of Albuquerque, and about 25 miles (40 kilometers) northwest of Santa Fe. LANL occupies an area of approximately 25,600 acres (10,360 hectares), or approximately 40 square miles (104 square kilometers). NNSA is responsible for the administration of LANL as one of three National Security Laboratories. LANL provides both the NNSA and DOE with mission support capabilities through its activities and operations, particularly in the area of national security.

Work at LANL includes operations that focus on the safety and reliability of the nation's nuclear weapons stockpile and on programs that reduce global nuclear proliferation. 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. LANL supports actinide (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.

The capabilities needed to execute NNSA mission activities require facilities at LANL that can be used to handle actinide 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 in TAs 3 and 55, respectively). Most of the LANL mission support functions require analytical chemistry (AC) and materials characterization (MC), and actinide research and development support capabilities and capacities that currently exist within facilities at the CMR building and that are not available elsewhere. Other unique capabilities are located within the plutonium facility. Work is sometimes moved between the CMR building and the plutonium facility to make use of the full suite of capabilities they provide.

The CMR building is over 50 years old and many of its utility systems and structural components are deteriorating. Studies conducted in the late 1990s identified a seismic fault trace located beneath one of the wings of the CMR building that increases the level of structural integrity required to meet current structural seismic code requirements for a Hazard Category 2 nuclear facility (a Hazard Category 2 nuclear facility is one in which the hazard analysis identifies the potential for significant onsite consequences). Correcting the CMR building's defects by performing repairs and upgrades would be difficult and costly. 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 1999 record of decision for the ''Site-wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory'' (DOE/EIS–0238) (LANL SWEIS). Mission-critical CMR capabilities at LANL support NNSA's stockpile stewardship and management 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. NNSA needs to act now to provide the physical means for accommodating continuation of the CMR building's functional, mission-critical CMR capabilities beyond 2010 in a safe, secure, and environmentally sound manner.

Alternatives Considered

NNSA evaluated the environmental impacts associated with the proposed relocation of LANL AC and MC, and associated research and development capabilities that currently exist primarily at the CMR building, to a newly constructed facility, and the continued performance of those operations and activities at the new facility for the next 50 years. The CMRR EIS analyzed four action alternatives: (1) The construction and operation of a complete new CMRR facility at TA–55; (2) the construction of the same at a ''greenfield'' location within TA–6; (3) and a ''hybrid'' alternative maintaining administrative offices and support functions at the existing CMR building with a new Hazard Category 2 laboratory facility built at TA–55, and, (4) a ''hybrid'' alternative with the laboratory facility being constructed at TA–6. The CMRR EIS also analyzed the no action alternative. These alternatives are described in greater detail below.

Alternative 1 is to construct a new CMRR facility consisting of two or three new buildings within TA–55 at LANL 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 for LANL operations in the 1999 LANL SWEIS. Alternative 1 would also involve construction of a parking areas(s), tunnels, vault area(s), and other infrastructure support needs. AC and MC activities would be conducted in either two separate laboratories (constructed either both above ground (construction option 1) or one above and one below ground (construction option 2)) or in one new laboratory (constructed either above ground (construction option 3) or below ground (construction option 4)). An administrative office and support functions building would be constructed separately.

Alternative 2 would construct the same new CMRR facility within TA–6; the TA–6 site is a relatively undeveloped, forested area with some prior disturbance in limited areas that is referred to as a ''greenfield'' site.

Alternatives 3 and 4 are ''hybrid'' alternatives 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 might be dispositioned. New laboratory facilities (as described for alternative 1) would be constructed either at TA–55 (alternative 3) or at TA–6 (alternative 4).

Under any of the alternatives, disposition of the existing CMR building could include a range of options from no demolition (disposition option 1), to partial demolition (disposition option 2), to demolition of the entire building (disposition option 3).

The no action alternative would involve the continued use of the existing CMR building with some minimal 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 building construction would be undertaken. AC and MC operational levels would continue to be restricted and would not meet the level of operations determined necessary for the foreseeable future at LANL in the 1999 SWEIS record of decision.

Preferred Alternative

In both the draft and the final CMRR EIS, the preferred alternative for the replacement of the existing CMR building is identified as alternative 1 (construct a new CMRR facility at TA–55). The preferred construction option would be the construction of a single consolidated special nuclear material (SNM) capable, Hazard Category 2 laboratory with a separate administrative offices and support functions building (construction option 3). (Special nuclear materials include actinides such as plutonium, uranium enriched in the isotope 233 or 235, and any other material that the U.S. Nuclear Regulatory Commission determines to be special nuclear material.) NNSA's preferred option for the disposition of the existing CMR building is to decontaminate, decommission and demolish the entire structure (disposition option 3). Based on the CMRR EIS, the environmental impacts of the preferred alternative, although minimal, would be expected to be greater than those of the no action alternative. Construction option 3 would have less impact on the environment that implementing construction options 1 or 2; and disposition option 3 would have the greatest environmental impact of the disposition options analyzed.

Environmentally Preferable Alternative

The Council on Environmental Quality (CEQ), in its ''Forty Most Asked Questions Concerning CEQ's NEPA Regulations'' (46 FR 18026, 2/23/81) with regard to 40 CFR 1505.2, defined the ''environmentally preferable alternative'' as the alternative ''that will promote the national environmental policy as expressed in NEPA's section 101''. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. The CMRR EIS impact analysis indicates that there would be very little difference in the environmental impacts among the action alternatives analyzed and also that the impacts of these action alternatives would be small. After considering impacts to each resource area by alternative, NNSA has identified the no action alternative as the environmentally preferable alternative. The no action alternative was identified as having the fewest direct impacts to the physical environment and to cultural and historic resources. This is because no construction-related disturbances would exist and none of the CMR building would be demolished, as would be the case under any of the action alternatives analyzed for the proposed action, including the preferred alternative. Therefore, the no action alternative would have the fewest impacts.

Environmental Impacts of Alternatives

NNSA analyzed the potential impacts that might occur if any of the four action alternatives or the no action alternative were implemented for land use and visual resources; site infrastructure; air quality and noise; geology and soils; surface and groundwater quality; ecological resources; cultural and paleontological resources; socioeconomics; human health impacts; environmental justice; waste management and pollution prevention. NNSA considered the impacts that might occur from potential accidents associated with the four action alternatives, and the no action alternative as well, on LANL worker and area residential populations. NNSA considered the impacts of each alternative regarding the irreversible or irretrievable commitments of resources, and the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. The CMRR EIS analyses identified minor differences in potential environmental impacts among the action alternatives including: Differences in the amount of land disturbed long term for construction and operations, ranging between about 27 and 23 acres disturbed during construction and between 10 and 15 acres disturbed permanently during operations; and differences in the potential to indirectly affect (but not adversely affect) potential habitat for a federally-listed threatened species and the potential to have no affect on sensitive habitat areas; differences in the potential to affect human health during normal operations and during accident events; differences in waste volumes generated and managed; and differences in transportation accident dose possibilities. A comparison of impacts is discussed in the following paragraphs.

Construction Impacts

Alternative 1 (Construct New CMRR Facility at TA–55; Preferred Alternative): The construction of a new SNM-capable Hazard Category 2 laboratory, an administrative offices and support functions building, SNM vaults and other utility and security structures, and a parking lot at TA–55 would affect 26.75 acres (10.8 hectares) of mostly disturbed land, but would not change the area's current land use designation. The existing infrastructure resources (natural gas, water, electricity) would adequately support construction activities. Construction activities would result in temporary increases in air quality impacts, but resulting criteria pollutant concentrations would be below ambient air quality standards. Construction activities would not impact water, visual resources, geology and soils, or cultural and paleontological resources. Minor indirect effects on potential Mexican spotted owl habitat could result from the removal of a small amount of habitat area, increased site activities, and night-time lighting near the remaining Mexican spotted owl habitat areas. The socioeconomic impacts associated with construction would not cause any major changes to employment, housing, or public finance in the region of influence. Waste generated during construction would be adequately managed by the existing LANL management and disposal capabilities.

Alternative 2 (TA–6 Greenfield Alternative): The construction of new SNM-capable Hazard Category 2 and 3 buildings, the construction of an administrative offices and support functions facility, SNM vaults and other utility and security structures, and a parking lot at TA–6 would affect 26.75 acres (10.8 hectares) of undisturbed

land, and would change the area's current land use designation to nuclear material research and development, similar to that of TA–55. Infrastructure resources (natural gas, water, electricity) would need to be extended or expanded to TA–6 to support construction activities. Construction activities would result in temporary increases in air quality impacts, but resulting criteria pollutant concentrations would be below ambient air quality standards. It would alter the existing visual character of the central portion of TA–6 from that of a largely natural woodland to an industrial site. Once completed, the new CMRR facility would result in a change in the visual resource contrast rating of TA–6 from Class III (undeveloped land where management activities do not dominate the view) to Class IV (developed land where management activities dominate the view). Construction activities would not impact water, biotic resources (including threatened and endangered species), geology and soils, or cultural and paleontological resources. The socioeconomic impacts associated with construction would not cause any major changes to employment, housing, or public finance in the region of influence. Waste generated during construction would be adequately managed by the existing LANL capabilities for handling waste. In addition, a radioactive liquid waste pipeline might also be constructed across Two Mile Canyon to tie in with an existing pipeline to the Radioactive Liquid Waste Treatment Facility (RLWTF) in TA–50.

Alternative 3 (Hybrid Alternative at TA–55): The construction of new Hazard Category 2 and 3 buildings, the construction of SNM vaults and utility and security structures, and the construction of a parking lot at TA–55 would affect 22.75 acres (9.2 hectares) of mostly disturbed land, but would not change the area's current land use designation. The existing infrastructure would adequately support construction activities. Construction activities would result in temporary increases in air quality impacts, but resulting criteria pollutant concentrations would be below ambient air quality standards. Construction activities would not impact water, visual resources, geology and soils, or cultural and paleontological resources. Minor indirect effects on Mexican spotted owl habitat could result from the removal of a small amount of habitat area, increased site activities, and night-time lighting near the remaining Mexican spotted owl habitat areas. The socioeconomic impacts associated with construction would not cause any major changes to employment, housing, or public finance in the region of influence. Waste generated during construction would be adequately managed by the existing LANL capabilities for handling waste.

Alternative 4 (Hybrid Alternative at TA–6): The construction of new Hazard Category 2 and 3 buildings, the construction of SNM vaults and utility and security structures, and the construction of a parking lot at TA–6 would affect 22.75 acres (9.2 hectares) of undisturbed land, and would change the area's current land use designation to nuclear material research and development, similar to that of TA–55. Infrastructure resources (natural gas, water, electricity) would need to be extended or expanded at TA–6 to support construction activities. Construction activities would result in temporary increases in air quality impacts, but would be below ambient air quality standards. The existing visual character of the central portion of TA–6 would be altered from that of a largely natural woodland to that of an industrial site. Once completed, the new CMRR facility would result in a change in the visual resource contrast rating of TA–6 from Class III to Class IV. Construction activities would not impact water, visual resources, biotic resources (including threatened and endangered species), geology and soils, or cultural and paleontological resources. The socioeconomic impacts associated with construction would not cause any major changes to employment, housing, or public finance in the socioeconomic region of influence. Waste generated during construction would be adequately managed by the existing LANL capabilities for handling waste. In addition, a radioactive liquid waste pipeline may also be constructed across Two Mile Canyon to tie in with an existing pipeline to the RLWTF at TA–50.

Impacts During the Transition From the CMR Building to the New CMRR Facility Under the Action Alternatives

During a 4-year transition period, CMR operations at the existing CMR building would be moved to the new CMRR facility. During this time, both CMR facilities would be operating, although at reduced levels. At the existing CMR building, where restrictions would remain in effect, operations would decrease as CMR operations move to the new CMRR facility. At the new CMRR facility, levels of CMR operations would increase as the facility becomes fully operational. In addition, the transport of routine onsite shipment of AC and MC samples would continue to take place while both facilities are operating. With both facilities operating at reduced levels at the same time, the combined demand for electricity, and manpower to support transition activities during this period might be higher than would be required by the separate facilities. Nevertheless, the combined total impacts during this transition phase from both these facilities would be expected to be less than the impacts attributed to the expanded operations alternative and the level of CMR operations analyzed in the LANL SWEIS.

Also during the transition phase, the risk of accidents would be changing at both the existing CMR building and the new CMRR facility. At the existing CMR building, the radiological material at risk and associated operations and storage would decline as material and equipment are transferred to the new CMRR facility. This material movement would have the positive effect of reducing the risk of accidents at the CMR building. Conversely, at the new CMRR facility, as the amount of radioactive material at risk and associated operations increases to full operations, the risk of accidents would also increase. However, the improvements in design and technology at the new CMRR facility would also have a positive effect of reducing overall accident risks when compared to the accident risks at the existing CMR building. The expected net effect of both of these facilities operating at the same time during the transition period would be for the risk of accidents to be lower than the accident risks at either the existing CMR building or the fully operational new CMRR facility.

Action Alternatives—Operations Impacts

Relocating CMR operations to a new CMRR facility located at either TA–55 or TA–6 within LANL would require similar facilities, infrastructure support procedures, resources, and numbers of workers during operations. For most environmental areas of concern, operational differences would be minor. There would not be any perceivable differences in impact between the action alternatives for land use and visual resources, air and water quality, biotic resources (including threatened and endangered species), geology and soils, cultural and paleontological resources, power usage, and socioeconomics. Additionally, the new CMRR facility would use existing waste management

facilities to treat, store, and dispose of waste materials generated by CMR operations. All impacts would be within regulated limits and would comply with Federal, State, and local laws and regulations. Any transuranic (TRU) waste generated by CMRR facility operations would be treated and packaged in accordance with the Waste Isolation Pilot Plant (WIPP) waste acceptance criteria and transported to WIPP or a similar type facility for disposition by DOE.

Routine operations for each of the action alternatives would increase the amount of radiological releases as compared to current restricted CMR building operations. Current operations at the CMR building do not support the levels of activity described for the expanded operations alternative in the LANL SWEIS. There would be small differences in potential radiological impacts to the public, depending on the location of the new CMRR facility. However, radiation exposure to the public would be small and well below regulatory limits and limits imposed by DOE Orders. The maximally exposed offsite individual would receive a dose of less than or equal to 0.35 millirem per year, which translates to 2.1×10^{-7} latent cancer fatalities per year from routine operational activities at the new CMRR facility. Statistically, this translates into a risk of one chance in 5 million of a fatal cancer for the maximally exposed offsite individual due to these operations. The total dose to the population within 50 miles (80 kilometers) would be a maximum of 2.0 person-rem per year, which translates to 0.0012 latent cancer fatalities per year in the entire population from routine operations at the new CMRR facility. Statistically, this would equate to a chance of one additional fatal cancer among the exposed population every 1,000 years.

Using DOE-approved computer models and analysis techniques, estimates were made of worker and public health and safety risks that could result from potential accidents for each alternative. For all CMRR facility alternatives, the results indicate that statistically there would be no chance of a latent cancer fatality for a worker or member of the public. The CMRR facility accident with the highest risk is a facility-wide spill of radioactive material caused by a severe earthquake that exceeds the design capability of the CMRR facility under Alternative 1. The risk for the entire population for this accident was estimated to be 0.0005 latent cancer fatalities per year.

This value is statistically equivalent to stating that there would be no chance of a latent cancer fatality for an average individual in the population during the lifetime of the facility. Continued operation of the CMR building under the no action alternative would carry a higher risk because of the building's location and greater vulnerability to earthquakes. The risk for the entire population associated with an earthquake at the CMR building would be 0.0024 latent cancer fatalities per year, which is also statistically equivalent to no chance of a latent cancer fatality for an average individual during the lifetime of the facility.

As previously noted, overall CMR operational characteristics at LANL would not change regardless of the ultimate location of the replacement facility and the action alternative implemented. Sampling methods and mission operations in support of AC and MC would not change and, therefore, would not result in any additional environmental or health and safety impacts to LANL. Each of the action alternatives would generally have the same amount of operational impacts. All of the action alternatives would produce equivalent amounts of emissions and radioactive releases into the environment, infrastructure requirements would be the same, and each action alternative would generate the same amount of radioactive and non-radioactive waste, regardless of the ultimate location of the new CMRR facility at LANL. Other impacts that would be common to each of the action alternatives include transportation impacts and CMR building and CMRR facility disposition impacts. Transportation impacts could result from: (1) The one-time movement of SNM, equipment, and other materials during the transition from the existing CMR building to the new CMRR facility; and (2) the routine onsite shipment of AC and MC samples between the plutonium facility at TA–55 and the new CMRR facility. Impacts from the disposition of the existing CMR building and the CMRR facility would result from the decontamination and demolition of the buildings and the transport and disposal of radiological and non-radiological waste materials. All action alternatives would require the relocation and one-time transport of SNM equipment and materials. Transport of SNM, equipment, and other materials currently located at the CMR building to the new CMRR facility at TA–55 or TA–6 would occur over a period of two to four years. The public would not be expected to receive any measurable exposure from the one-time movement of radiological materials associated with this action. Impacts of potential handling and transport accidents during the one-time movement of SNM, equipment, and other materials during the transition from the existing CMR building to the new CMRR facility would be bounded by other facility accidents for each alternative. For all alternatives, the environmental impacts and potential risks of transportation would be small.

Under each action alternative, routine onsite shipments of AC and MC samples consisting of small quantities of radioactive materials and SNM samples would be shipped from the plutonium facility at TA–55 to the new CMRR facility at either TA–55 or TA–6. The public would not be expected to receive any additional measurable exposure from the normal movement of small quantities of radioactive materials and SNM samples between these facilities. The potential risk to a maximally exposed individual (MEI) member of the public from a transportation accident involving routine onsite shipments of AC and MC samples between the plutonium facility and CMRR facility was estimated to be very small (3.7x10–10), or approximately 1 chance in 3 billion. For all action alternatives, the overall environmental impacts and potential risks of transporting AC and MC samples would be small.

Action Alternatives—CMR Building and CMRR Facility Disposition Impacts

All action alternatives would require some level of decontamination and demolition of the existing CMR building. Operations experience at the CMR building indicates some surface contamination has resulted from the conduct of various activities over the last 50 years. Impacts associated with decontamination and demolition of the CMR building are expected to be limited to the creation of waste within LANL site waste management capabilities. This would not be a discriminating factor among the alternatives.

Decontamination, and demolition of the new CMRR facility would also be considered at the end of its designed lifetime operation of at least 50 years. Impacts from the disposition of the CMRR facility would be expected to be similar to those for the existing CMR building.

No Action Alternative: Under the no action alternative there would be no new construction and minimal necessary structural and systems upgrades and repairs. Accordingly, there would be no potential environmental impacts resulting from new construction for this alternative. Operational impacts of continuing CMR

operations at the CMR building would be less than those identified under the expanded operations alterative analyzed in the 1999 LANL SWEIS due to the operating constraints imposed on radiological operations at the CMR building.

Comments on the Final Environmental Impact Statement

NNSA distributed approximately 400 copies of the final EIS to Congressional members and committees, the State of New Mexico, various American Indian tribal governments and organizations, local governments, other Federal agencies, and the general public. NNSA received one comment letter from the Pueblo of San Ildefonso regarding NNSA's responses to Pueblo concerns related to the draft CMRR EIS that focused primarily on the spread of contamination present in the canyons around LANL onto land owned by the Pueblo. This issue is beyond the scope of the CMRR EIS but will be addressed by NNSA through other means already established for LANL, such as the environmental restoration project, rather than through the NEPA compliance process.

Decision Factors

NNSA's decisions are based on its mission responsibilities and the ability to continue to perform mission-critical AC and MC operations at LANL in an environmentally sound, timely and fiscally prudent manner. Other key factors in the decision-making process include programmatic impacts and overall program risk, and construction and operational costs.

LANL's CMR operations support a wide range of scientific and technological capabilities that support, in turn, NNSA's national security mission assignments. Most of the LANL mission support functions require AC and MC, and actinide research and development support capabilities and capacities that currently exist within the CMR building. NNSA will continue to need CMR capabilities now and into the foreseeable future, much as these capabilities have been needed at LANL over the past 60 years. Programmatic risks are high if LANL CMR operations continue at the curtailed operational level now appropriate at the aging CMR building. CMR operations at LANL need to continue seamlessly in an uninterrupted fashion, and the level of overall CMR operations needs to be flexible enough to accommodate the work load variations inherent in NNSA's mission support assignments and the general increase in the level of operations currently seen as necessary to support future national security requirements.

The CMR building was initially designed and constructed to comply with the Uniform Buildings Codes in effect at the time. The CMR building's wing 4 location over a seismic trace would require very extensive and costly structural changes that would be of marginal operational return. Construction costs are estimated to be less for building and operating a new CMRR facility over the long term than the cost estimated for making changes to the aging CMR building so that the building could be operated as a nuclear facility at the level of operations required by the expanded operations alternative selected for LANL in the 1999 LANL SWEIS ROD over the next 50 years. Life cycle costs of operating a new CMRR facility at TA–55 are less than the costs would be of operating a totally upgraded CMR building over the next 50 years. Reduced general occupation costs of maintaining the new CMRR facility (such as heating and cooling the building to maintain comfortable personnel working conditions) given the reduction in occupied building square footage over that of the existing CMR building, and reduced security costs (for maintaining Perimeter Intrusion Detection Alarm Systems (PIDAS) and guard personnel) due to the co-location of the CMRR facility within the existing security perimeter of the plutonium facility thereby eliminating the need for maintaining a separate duplicative security system at the CMR building both would significantly reduce general operating costs for the new facility.

Mitigation Measures

Based on the analyses of impacts provided in the CMRR EIS, no mitigation measures were identified as being necessary since all potential environmental impacts would be substantially below acceptable levels of promulgated standards. Activities associated with the proposed construction of the new CMRR facility would follow standard procedures for minimizing construction impacts, as would demolition activities.

Decisions

NNSA has decided to implement the preferred alternative, alternative 1, which is the construction and operation of a new CMRR facility within TA–55 at LANL. The new CMRR facility would include two buildings (one building for administrative and support functions, and one building for Hazard Category 2 SNM laboratory operations), both of which would be constructed at above ground locations (construction option 3). The existing CMR building would be decontaminated, decommissioned and demolished in its entirety (disposition option 3). However, the actual implementation of these decisions is dependent on DOE funding levels and allocations of the DOE budget across competing priorities.

Issued in Washington, DC, this 3rd day of February, 2004.

Linton Brooks,

Administrator, National Nuclear Security Administration.

[FR Doc. 04–3096 Filed 2–11–04; 8:45 am]

BILLING CODE 6450–01–P

ENVIRONMENTAL PROTECTION AGENCY

[OAR–2003–0059; FRL–7621–6]

Agency Information Collection Activities; Submission to OMB for Review and Approval; Comment Request; Emission Defect Information Reports and Voluntary Emission Recall Reports (Renewal), EPA ICR Number 0282.13, OMB Control Number 2060–0048

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), this document announces that an Information Collection Request (ICR) has been forwarded to the Office of Management and Budget (OMB) for review and approval. This is a request to renew an existing approved collection. This ICR is scheduled to expire on 1/31/2004. Under OMB regulations, the Agency may continue to conduct or sponsor the collection of information while this submission is pending at OMB. This ICR describes the nature of the information collection and its estimated burden and cost.

DATES: Additional comments may be submitted on or before March 15, 2004.

ADDRESSES: Submit your comments, referencing docket ID number OAR–2003–0059, to (1) EPA online using EDOCKET (our preferred method), by e-mail to *a-and-r-Docket@epa.gov,* or by mail to: EPA Docket Center, Environmental Protection Agency, Air and Radiation Docket and Information Center, Mail Code 6102T, 1200 Pennsylvania Ave., NW., Washington, DC 20460, and (2) OMB at: Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attention: Desk Officer for EPA,

Tab 10 - Mello aff 3, par 20, ref 22a

04-D-125, Chemistry and Metallurgy Research Building Replacement (CMRR) Project, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decision (CD) is CD-1 for the Nuclear Facility (NF), Special Facility Equipment (SFE), and Radiological Laboratory/Utility/Office Building (RLUOB) equipment installation components of the project, and CD-2/3A for the RLUOB facility component of the project. The CMRR CD-1 was approved on May 18, 2005, which at the time had a preliminary cost range of $745,000,000 - $975,000,000. It is recognized that many of the prior planning assumptions have changed. Further discussion below addresses these changes impacting the estimate. The CD-2/3A for the RLUOB construction was approved on October 21, 2005, with a Total Project Cost (TPC) of $164,000,000. The construction of the RLUOB is being executed with a design build contract. Subsequent Critical Decisions will be sought for the establishment of the performance baselines to install SFE equipment in the RLUOB and for the NF and associated SFE equipment. The TPC of the RLUOB construction is part of the overall CMRR Project preliminary cost range.

Based upon DOE/NNSA Program direction to the project in FY 2007 and FY 2008, the project scope description in Section 4 was modified to address incorporation of the Special Facility Equipment (formerly addressed as Phase B), into each of the respective facility components of CMRR, namely the RLUOB and NF. The start of final design was approved for the SFE associated with the RLUOB in May 2007. With the completion of the RLUOB/SFE final design in FY 2008 and the anticipated establishment of the performance baseline in FY 2009, this effort is being addressed as the Equipment Installation effort necessary for the RLUOB to become programmatically operational. For the Nuclear Facility, the facility construction, equipment procurement and installation, and facility operational readiness will be addressed within the NF performance baseline.

A revised estimate to complete assessment will be performed by the project prior to authorization for NF final design. The estimate for construction of the NF is now viewed to be significantly higher (TPC above $2,000,000,000) than studied earlier during conceptual design. The funding profile reflected in Section 5 for the inclusive period of FY 2011 to FY 2014 is a funding placeholder for the NF final design only. No funding placeholder for construction of the Nuclear Facility is included in this data sheet. The decision about how far to proceed into final design will be based on numerous ongoing technical reviews and other ancillary decisions NNSA management will be making during the period of FY 2009 - 2010. A future decision to proceed with construction of the Nuclear Facility and associated equipment has been deferred pending the outcome of the current ongoing Nuclear Posture Review and other strategic decision making.

A Federal Project Director at the appropriate level has been assigned to this project.

This PDS is an update of the FY 2009 PDS.

Tab 11 - Mello aff 3, par 20, ref 22b

04-D-125, Chemistry and Metallurgy Research Building Replacement (CMRR) Project, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico Project Data Sheet (PDS) is for Construction

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decisions (CD) are CD-1 for the Nuclear Facility (NF), Special Facility Equipment (SFE), and Radiological Laboratory/Utility/Office Building (RLUOB) phases of the project, and CD-2/3A for the RLUOB phase of the project. The CMRR CD-1 was approved on June 17, 2005 with a preliminary cost range of $745,000,000 - $975,000,000, although costs could be greater. Subsequently, the CD-2/3A for the RLUOB was approved on December 5, 2005, with a Total Project Cost (TPC) of $164,000,000. The NF and SFE are continuing with final design, while the Radiological Laboratory/Utility/Office Building is being executed with a design build contract. The TPC of the RLUOB is part of the overall CMRR Project preliminary cost range.

Based on continued examination of the project and recent, industry-wide experience related to the increases in the cost of construction of comparable facilities, the estimate for construction of the Nuclear Facility at CMRR is now viewed to be significantly higher. Initial estimates place the revised TPC above $2,000,000,000. A final cost estimate will be established when the Nuclear Facilities performance baseline is established at CD-2, which is estimated to occur during FY 2010. Funding profile reflected in Section 5 for the inclusive period of FY 2010 to FY 2013 is a funding placeholder for the construction which will be needed for the plutonium facility. This decision will result from the NEPA and PEIS process the NNSA is presently conducting.

A Federal Project Director with certification level IV has been assigned to this project.

This PDS is an update of the FY 2008 PDS.

Tab 12

Mello Aff#1, Par 18, Ref 2: http://www.hss.energy.gov/deprep/2009/FB09S04B.pdf

CHEMISTRY AND METALLURGY RESEARCH REPLACEMENT FACILITY PROJECT LOS ALAMOS NATIONAL LABORATORY

CERTIFICATION REVIEW

REPORT TO CONGRESSIONAL DEFENSE COMMITTEES

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

SEPTEMBER 2009

The update of the PSHA ground motions also revealed that the approach used to derive vertical-to-horizontal ratios had produced overly conservative estimates for these ratios. The 2007 PSHA assumed that the dominant earthquake that controlled the PSHA was a single magnitude 7.0 earthquake at a close-in distance. The update refined the estimate for the dominant earthquake, determining that a range in magnitude of 6.0 to 7.0 was more appropriate at close distances. The ground motion studies resulted in reducing design basis earthquake ground motions by about 25 to 40 percent. The Board reviewed this work and found it acceptable.

The seismic hazard at LANL is complex. LANL has completed numerous studies during the past two decades to better understand the seismic hazard, including studies to understand the rate of movement on the PFS. Given this complex seismic environment, the Board encourages LANL to continue long-term seismic hazard studies aimed at reducing significant uncertainties. These uncertainties include the rate of movement on the PFS and the subsurface stiffness properties, both of which have a significant impact on estimates of ground motion. LANL is developing a long-term seismic hazard program plan; the Board will review this plan as it becomes available.

2.1.2.3 CMRR Seismic and Structural Design

The Board reviewed the Nuclear Facility structural and seismic design. This review focused on evaluating the Nuclear Facility structural configuration and behavior to ensure that the current structural design can resist seismic design ground motions. This evaluation addressed structural issues that could result in the need for significant and costly redesign efforts if not addressed early in the design process.

The Board issued a letter to NNSA on May 30, 2008, documenting structural and seismic design issues. In that letter, the Board pointed out that the open structural layout of the laboratory portion of the facility represented a design challenge. At that time, the ongoing seismic analysis revealed excessive vertical in-structure accelerations for the laboratory roof. These large in-structure accelerations could have been prohibitive from a facility and equipment design perspective. To address this issue, LANL performed a parametric study of the facility that resulted in a structural reconfiguration of the building. LANL recommended several structural changes that would vertically stiffen the roof level above the laboratory level.

Given these changes, the Board focused on the CMRR Project's structural design criteria and plans for completing the structure's seismic design. While the structure had been stiffened several structural design challenges remained. For example, at the mezzanine level of the structure, there are large openings in the floor to allow routing of ventilation equipment and ductwork. The Board's review revealed that there was insufficient confidence that the structural behavior of the Nuclear Facility had been adequately assessed. This could lead to unacceptable structural damage during a design basis earthquake. This led to the identification of the Board's Finding *CMRR Seismic Design.*

The Board met with CMRR Project personnel to discuss the structural behavior and the approach to seismic and structural design. At this meeting, project personnel proposed

modifications to the seismic analysis approach. One of these modifications involved a new approach to defining seismic design ground motions at the foundation of the Nuclear Facility, at a depth of about 75 feet below the ground surface.

The Board continued to express concern about the dynamic behavior of the updated structural configuration of the Nuclear Facility. This configuration is complex. The laboratory level is open, representing a relatively flexible portion of the structure between the stiffer basement and roof. There are few walls in the laboratory level; the CMRR Project instead is employing large columns to support an open laboratory concept for operational flexibility. Walls were added to the structure above the laboratory in an effort to reduce the large vertical in-structure motions. The interaction between these walls and the columns below requires detailed study.

Given these structural complexities, the Board concluded that CMRR Project personnel did not have a sufficient understanding of the building's dynamic response. Project personnel agreed to take actions to develop a better understanding of the structural behavior of the Nuclear Facility. They performed an assessment of building response that resulted in several recommendations related to the Nuclear Facility structural configuration and analysis. These recommendations included extending the mezzanine floor between the laboratory and vault, modifying the roof to remove a structural discontinuity, and accounting for additional structural walls in the dynamic analysis. Project personnel also agreed to add several seismic chords and collector beams to ensure improved structural behavior. These changes will ensure that a suitable load path exists where large discontinuities are encountered in structural slabs and shear walls.

CMRR Project personnel also discussed the need to modify the soil layer immediately below the Nuclear Facility foundation to prevent adverse response of the foundation, such as collapse of the soil under bearing and building sliding. The plan is to either replace or modify this soil layer to improve foundation conditions. While it has not been formally demonstrated that remediating this soil layer will improve the facility's seismic response, the Board agrees that stiffening this layer should improve the seismic response of the Nuclear Facility structure and address project concerns about building sliding. However, a detailed assessment of the revised foundation approach needs to be completed before approval to proceed into final design. This assessment should quantify the impact on foundation-level seismic design ground motions and describe how the seismic analysis model will account for the locally modified soil layer under the structure.

The CMRR Project team's approach to seismic analysis and the general approach to structural and seismic modeling were reviewed. The Board determined that the project lacked an integrated approach to structural modeling. As a result, the structural design process may not be properly validated. Because of computational constraints, project personnel proposed using design and analytical approximations. Providing assurance that such an approach is acceptable is essential, but is complicated by such issues as remediation of the soil layer below the foundation. To address these issues, a detailed structural model with a minimum number of approximations was needed. This model could then be used to validate both the general analysis and design approaches.

CMRR Project personnel agreed with these concerns and revised the structural design process to include the development of a detailed structural model. A design process check is planned to ensure that the approach used is adequate and will meet the structural loads that result from a design basis earthquake. The Board agrees that this is an acceptable path forward. CMRR Project personnel also plan to update the seismic soil-structure interaction analysis. It will be necessary to ensure that the structural model(s) has adequate refinement and inputs to properly capture the dynamic behavior of the Nuclear Facility. A detailed assessment of the remediation of the Nuclear Facility foundation soil will also be necessary to ensure that the soil-structure interaction approach properly models the effects on the seismic design ground motions.

It will be advisable for the project to continue using LANL structural personnel, supported by a peer review panel, to provide detailed oversight of the structural seismic analysis and design. As the Nuclear Facility design proceeds the Board will review the CMRR Project team's detailed assessment of the impact of the revised Nuclear Facility foundation approach.

2.1.3 Finding: *Seismic Design of Active Confinement Ventilation System and Support Systems*

The CMRR Project should not proceed to final design until there is high confidence that the necessary portions of the active confinement ventilation system can be seismically qualified. As discussed in Section 2.1.2.2, the structural response of the Nuclear Facility to vertical design basis ground motions led project personnel to be concerned that the vertical accelerations were at or above the upper limit at which some equipment could be seismically qualified, and to state that the seismic design for some of the safety-related systems might have to be downgraded as a result. The Board did not agree with downgrading the seismic design of any safety-related equipment and determined that inadequate technical justification had been provided to fully understand the equipment seismic qualification issue. Downgrading the seismic design of the active confinement ventilation system would jeopardize the ability of the system to function following a design basis earthquake, resulting in significantly larger releases of radioactive material.

The Board suggested that the CMRR Project team reconfirm its commitment to seismically designing the active confinement ventilation system to PC-3 seismic design requirements. The Board also suggested near-term studies to assess the potential conservatism of PC-3 design basis earthquake ground motions given recently published ground motion attenuation models, and suggested that the CMRR Project team perform a peer review of the approach to seismically qualifying safety-related equipment.

In response to this Finding, the CMRR Project team committed to seismically designing the systems and components of the active confinement ventilation system to PC-3 seismic design requirements. An update to the seismic design ground motions for the CMRR facility was also completed (see Section 2.1.2.2). The Board determined that the resulting reductions in PC-3 horizontal and vertical seismic design ground motions are technically supportable. These reductions alleviate the need to downgrade any safety-related equipment.

Tab 13

Am I on? Okay. The programmatic requirements for the facilities with the Office of Defense Programs within NNSA. So they set the requirements, requirements set for the Laboratory and for the project. So the administrator of NNSA and the, ah, the, I forget the title, but the uh, the head of Office of Defense Programs. They set. So they are the individuals responsible for the mission set.

[STEPHANIE HILLER]
That's what I thought. So in effect it's the Lab that is, those people at NNSA that are influencing policy, um, decisions that may be made by the president, but they have significant input. Is that correct?

[STEVE FONG]
Absolutely. These are federal people at headquarters in Washington who work with a lot of the Congress and a lot of the other of our clients who receive our product, to figure out what is necessary for the nation.

[STEPHANIE HILLER]
Thank you.

[STEVE FONG]
Sure.

[UNIDENTIFIED PERSON]
Do we want to do Scott's [Kovac] questions?

[BRUCE MACALLISTER, FACILITATOR]
Other questions?

[UNIDENTIFIED PERSON]
Well we had, Scott had about fourteen, I think and—

[UNIDENTIFIED PERSON]
Right. Four? Is it four questions?

[BRUCE MACALLISTER, FACILITATOR]
And so, we're, we're clear with the follow-ons, the direct follow-ons to the presentation? Ready to move into the questions that Scott [Kovac] raised? Okay.

[RICHARD A. HOLMES]
This is Rick. I'm gonna try to take a cut at this and Scott [Kovac] will tell me if we get too far off track.

[RICHARD A. HOLMES]
So, major sources of, of cost increases— And I'm not gonna necessarily bend these in, in numerical order, but I'm gonna try to articulate a couple of where the drivers come from. One is time. At CD-0, the nuke facility was to be done in 2012. And so the time spent waiting on

making decisions and, and continuing work is a manifestation of the, of the decision process, the pause for Complex Transformation, while things went on, and all those kind of things. Time is a big driver. And it manifests itself not just in the carrying costs, but because everything cost more the further you move out in time. So time is a pretty big component in that algorithm in terms of where cost comes from.

[RICHARD A. HOLMES]
Another source of cost in the job comes from implementation of the seismic requirements. And I think they are, they're getting pretty close to zeroing in, the deviations that we get now from these reports as the come out is much, much smaller than it used to be. We've done the big jump in, in response from the building as the ten year update is. We've made the building stiffer, increased the amount of concrete inside of the building. Ah, we will, I'm probably gonna jump down to the bottom [of the questions on the flip chart] here, we will replace the soil underneath the building. It is easier and more certain in terms of an activity as opposed to testing a jet grouting process and proving to everybody that the jet grouting works and would be the subject of the next twenty-two of these meetings that we would have.

[JONI ARENDS]
How much soil are you gonna replace?

[RICHARD A. HOLMES]
Um, I think it's on an order of magnitude of about 50 fifty feet. It's 225,000 cubic yards. So we will put in, we'll put in piers around the outer shell and then excavate out, and it goes down, it takes all that material away. So we go down to what is known to be stable, and I think it's an additional fifty feet beyond where the basemat is. Tom's [Whitacre] is nodding his head up and down, so I think I got that pretty close to right. So, if you take where the current road is, you bend by the site, that's where the current excavation is, we're gonna go another 75 or so feet below that, replace the material, build it up to where the basemat is, ten foot basemat, and then build the structure on top of that.

[JONI ARENDS]
Where is the 225,000 cubic yards of material gonna go?

[RICHARD A. HOLMES]
Some of that will become the cap for MDA-C. Some of that will support the cap down at Area G, depending upon, again, the quality of the fill and how much work it has to have. But there are plenty of users and needs to benefit the area from that material. So, those are the two places that have said, we needed, I think the timing's gonna work pretty well for MDA-C once they come up with a plan. 'Cause they don't have a full-up plan yet, but they've gotta agree to. But some of it go there, and then, if not, if they are not ready for it, it probably all can be consumed down for cap at Area G.

[UNIDENTIFIED PERSON]
[Inaudible words]

All construction work would be planned, managed, and performed to ensure that standard worker safety goals are met. All work would be performed in accordance with good management practices, with regulations promulgated by the Occupational Safety and Health Administration, and in accordance with various DOE Orders involving worker and site safety practices. To prevent serious injuries, all site workers (including contractors and subcontractors) would be required to submit and adhere to a Construction Safety and Health Plan. This Plan would be reviewed by UC at LANL staff before construction activities begin. Following approval of this Plan, UC and NNSA site inspectors would routinely verify that construction contractors and subcontractors were adhering to the Plan, including all Federal and state health and safety standards.

Table 2–1 Summary of CMRR Construction Requirements

Building/Material Usage	*Hazard Category 2 Building*	*Hazard Category 3 Building*	*Administrative Offices and Support Functions Building*	*Other Construction Elements*
Land (acres)	2.5	2.25	4.0	18 [a]
Water (gallons)	757,300	670,500	1,354,500	963,000
Electricity (megawatt-hours)	88.75	88.75	135	Not applicable
Concrete (cubic meters)	1,375	1,067	2,340	Not applicable
Steel (metric tons)	136	106	265	Not applicable
Peak construction workers			300	
Waste (nonhazardous) (metric tons)	130	99	295	10
Construction period (months)	17	17	26	6

Source: LANL 2002e.

[a] The land affected by other construction elements would include: parking (5 acres), laydown area (2 acres), concrete batch plant (5 acres) at either TA-55 or TA-6. Additionally 6 acres of land would be affected at TA-55 due to road realignment. An equal area (6 acres) at TA-6 would be affected for extensive trenching for utilities (1.5 acres), radioactive liquid waste pipeline (3 acres), and new road (1.5 acres).

Site preparation prior to the commencement of building construction at either the TA-55 site or TA-6 construction site, in whole or in part, would involve clearing the site of native vegetation. The TA-55 site would involve some removal of asphalt and concrete material at the construction site and removal of mostly grassy vegetation coverage with a few mature trees. The TA-6 construction site would require the removal of mature trees and shrubs as well as grassy vegetation coverage. No asphalt or concrete material are present at the proposed TA-6 construction site.

Noise at the site would occur mainly during daylight hours and would be audible primarily to the involved workers. Construction equipment would be maintained in accordance with applicable health and safety requirements and inspected on a regular basis. Workers would be required to use personal protective equipment (such as eye and hearing protection, hard hats, and steel-toed boots). Machinery guards would also be used as necessary based on activity-specific hazards analyses.

Clearing or excavation activities during site construction have the potential to generate dust and encounter previously buried materials that could include unknown potential release sites (PRS) containing hazardous, toxic, or radioactive materials, or objects of cultural significance. If buried materials or artifacts of cultural significance were encountered during construction, activities

Tab 15 - Mello Aff #2, Par 25

Table 2. Continued

Resource	*CMRR EIS Basis for Impact Analyses*	*Current CMRR Project Plans*	*Potential Consequences of Current CMRR Project Plans*[1]
Potential Release Sites (continued)			
		MDA C (located east of CMRR Project areas) was investigated for potential impacts to planned and proposed actions in TA-55. No contamination from this PRS exists in the CMRR Project areas in TA-55 or nearby areas currently being considered under the planned and proposed actions. There are no PRS concerns in the areas proposed for the TA-48 construction trailers. LANL activities will be managed to control impacts to the PRS.	
Resource Use and Conservation			
Concrete	Total: 11,255 cu yds of concrete required • RLUOB: 3061 cu yds • NF: 3194 cu yds • Other Construction: 5000 cu yds	Total: 387,633 cu yds of concrete required • RLUOB: 16,800 cu yds • NF: 120,833 cu yds, structural concrete • NF: 250,000 cu yds, lean concrete fill (for soil stabilization and seismic protection) Represents an additional 126,378 cu yds of structural concrete and 250,000 cu yds of lean (soil stabilization) concrete from what was anticipated in the CMRR EIS.	The CMRR-NF has a significantly higher requirement for concrete from what was bounded in the CMRR EIS, which is a direct result of unavoidable changes in the structural design to address increased seismic protection concerns. The CMRR EIS stated that the NF would be constructed to minimize risks (to workers, public, and environment) from geologic hazards including earthquakes. To meet this requirement, a site-specific seismic hazard analysis was conducted; its findings resulting in increased structural design and soil stabilization requirements for the NF, which, in turn, requires more concrete.

Table 2 Embodied Energy for Cement and Concrete Production

Embodied Energy for Cement and Concrete Production

	% by weight	Btus per ton Materials	Btus per ton Hauling	Btus/yard concrete	Energy %
Cement	12%	5,792,000	504,000	1,574,000	94%
Sand	34%	5,000	37,000	29,000	1.7%
Crushed Stone	48%	46,670	53,000	100,000	5.9%
Water	6%	0	0	0	0%
Concrete	100%	817,600		1,700,000	100%

Notes:

Calculations of energy requirements for cement production based on figures supplied by the Portland Cement Association, 1990 data. Aggregate and hauling energy requirements based on data supplied by PCA and based on the following assumptions:

- *Cement hauled 50 miles to ready-mix plant*
- *Aggregate hauled 10 miles to plant*
- *Concrete mix hauled 5 miles to building site*
- *Concrete mix: 500 lbs. cement, 1,400 lbs. sand, 2,000 lbs. crushed stone, 260 lbs. water/yard.*

[close window]

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Table 4 CO Emissions from Cement and Concrete Production

CO_2 Emissions from Cement and Concrete Production

	lbs CO_2 per ton of cement	lbs CO_2 per cu. yd. of concrete	Percent of total CO_2
CO_2 emissions from energy use	1,410	381	60
CO_2 emissions from calcining of limestone	997	250	40
Total CO_2 emissions	2,410	631	100

Notes:

Calculations of energy requirements for cement and concrete as in Table 2.

CO_2 emissions from different fuels from ACEEE Consumer Guide to Home Energy Savings, 1991.

Estimates of emissions from calcining limestone from CO_2 Release from Cement Production 1950-1985, by Richard Griffin, Institute for Energy Analysis, Oak Ridge Assoc. Universities, 8/87.

[close window]

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Tab 17 - Mello Aff #2, Par 26

Table 2. Continued

Resource	*CMRR EIS Basis for Impact Analyses*	*Current CMRR Project Plans*	*Potential Consequences of Current CMRR Project Plans*[1]
Resource Use and Conservation (continued)			
Concrete (continued)			Overall, the additional need for concrete is considered an acceptable short-term, temporary commitment of resources that results in a long-term improvement in safety and reduction in risk to the public and the environment. Impacts associated with transportation of feed material, use of water for concrete production, and operations of the concrete plants are discussed elsewhere in this table (specifically in air quality, infrastructure, and transportation resource areas).
Steel	Total: 559 tons • RLUOB: 292 tons • NF: 267 tons of structural steel	Total: 19,549 tons • RLUOB: 1010 tons NF Total Steel: 18,539 tons • Structural Steel: 560 tons • Foundation and Reinforcing Steel: 17,979 tons This represents an additional 300 tons of structural steel and 18,018 tons of steel for rebar and foundation work from what was anticipated in the CMRR EIS.	The proposed and planned action has a higher requirement for steel from what was anticipated in the CMRR EIS, which is a direct result of changes in the structural design to address increased seismic protection concerns. The CMRR EIS stated that the CMRR-NF would be constructed to minimize risks (to workers, public, and environment) from geologic hazards including earthquakes. To meet this requirement, a site-specific seismic hazard analysis was conducted; its findings resulting in increased structural design requirements for the NF, which, in turn, required more steel for the foundation and the structure. There will be minimal impacts to the availability of steel to other LANL projects or to the local community as a result of the CMRR's actions. The steel will be procured from regional suppliers (within 500 miles) to the extent possible.

Tab 18

Overview of CMRR Chemistry and Metallurgy Research Facility Replacement Project




December 2, 2010

Los Alamos NATIONAL LABORATORY EST. 1943

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Operated by Los Alamos National Security, LLC for NNSA

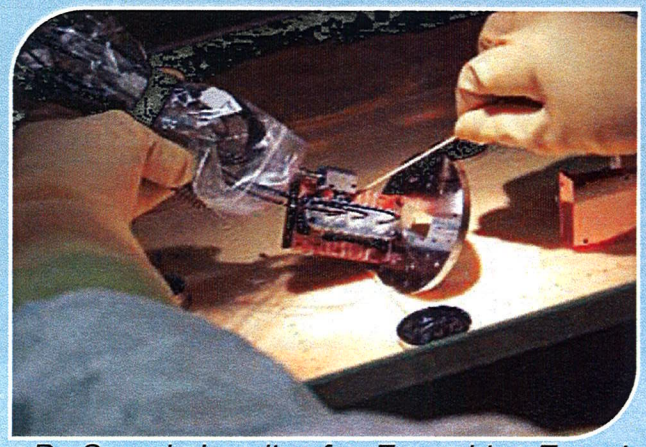
NNSA

What is CMRR?

- Multi-phased, two-building project
- Office and training space
- Nuclear materials storage
- Laboratory capabilities to house highly sophisticated equipment and instruments for chemical analysis and characterization of radioactive elements, such as plutonium.

CMRR is essentially a chemistry laboratory where scientists will analyze the origin and purity of materials and understand the chemical and mechanical properties of special nuclear materials. This capability is key to perform the national security mission assigned to LANL.

Electron Microscopy

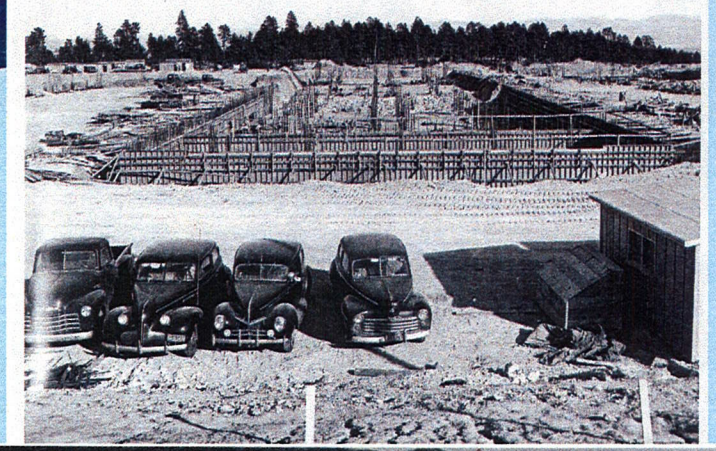


Pu Sample Loading for Z-machine Experiments

CMRR replaces a nearly 60-year old facility

- The original CMR building dates back to the early 1950s
- It is becoming ever more expensive and inefficient to maintain and it demands more resources to operate safely
- No other facility or site in the U.S. can fulfill its mission
- External safety oversight board has reported to Congress the critical need to replace

CMR construction in 1948



CMR Today

Essential national security capabilities

The Lab's satellite nuclear instruments detect nuclear threats and the Lab's ASPECT plane detects chemical and radiological dangers.

- Provides monitoring and assurance of stockpile
- Supports nonproliferation and counter terrorism needs of the country
- Provides science for treaty verification
- Helps maintain a credible deterrent without testing
- Improves ability to respond to emerging threats through modernized technical capabilities
- Provides power sources for space flight and has other diverse applications, including energy, environment, and homeland security

CMRR design offers flexibility and efficiency

The Nuclear Facility
(in design)

RLUOB
(completed; opening in 2011)

Benefits

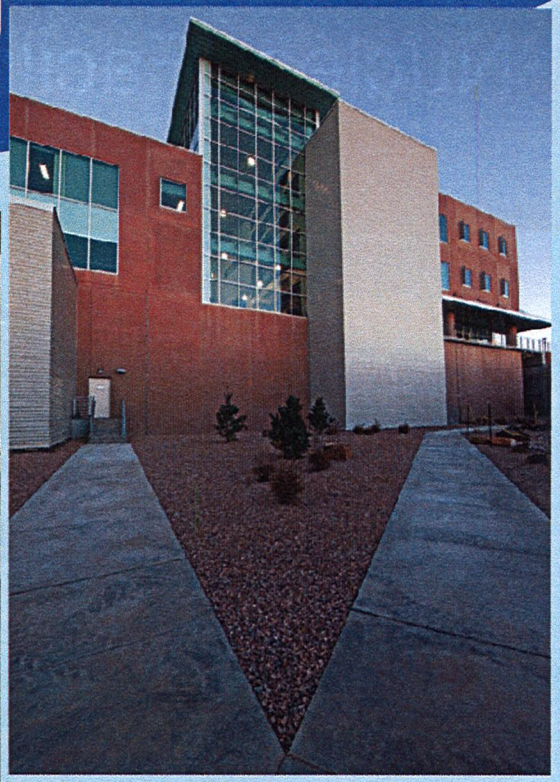
- Segregation of risk with two structures
- Greater flexibility to adapt and change over time to meet national security needs of nation
- Higher operational efficiency
- Vastly improved operational security
- Lower environmental impact

Dramatic improvements to safety and security

- Nuclear materials better protected
- Nuclear materials consolidated
- Meets 21st century health, safety, and environmental standards
- State-of-the-art worker safety
- Replaces over 500,000 square feet of antiquated facility space
- Design of Nuclear Facility certified by independent safety board

CMRR - First Replacement Component: Radiological Laboratory Utility Office Building (RLUOB)

- RLUOB will provide office space for 350 workers and 19,500 square feet of radiological laboratory space
- Operations at radiological level (less than 8.4 grams of Pu- 239 equivalent)
- State-of-the-art laboratory space and scientific instrumentation



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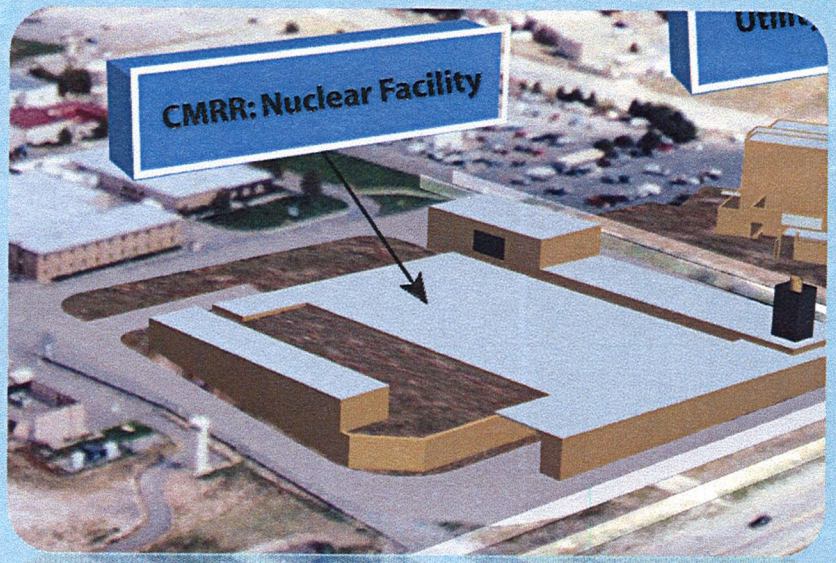
CMRR – Second Replacement Component: Nuclear Facility (NF)



- In design*
- 406,000 total square feet
  (comparable in size to Intel's new "Clean Room" chip manufacturing facility in Rio Rancho, NM)
- 22,500 square feet of laboratory space
- Building size is driven by required ventilation, fire protection, seismic safety, and electrical needs, etc.
- Serves radiological research and analysis needs for material quantities at levels needed to maintain assigned LANL mission

*Supplemental Environmental Impact Study underway with decision expected Summer 2011

Environmental & Energy Considerations

Sustainable architecture attempts to reduce the collective environmental impacts during the selection of building components, during the construction process, as well as during the lifecycle of the building (heating, electricity use, cooling, etc.)

Sustainability considerations were integrated early in CMRR project planning and design phases.

A strong commitment to environmental stewardship throughout procurement and construction will help CMRR to meet sustainable building standards.

LEED certification has been an important consideration in the design of both phases of CMRR.

DOE gave RLUOB the 2010 EStar Award for exemplary environmental sustainability practices.

Bi-partisan support for CMRR

- **Vice President Joseph Biden:**

  "This investment is not only consistent with our nonproliferation agenda; it is essential to it."

- ***America's Strategic Posture Report (2009* bi-partisan Congressional Commission on the Strategic Posture of the United States):**

  CMRR... "makes a direct contribution to maintaining intellectual infrastructure that is in immediate danger of attrition…" and "is required independent of stockpile size."

- **Nuclear Posture Review (April 2010):**

  "Increased funding is needed for the Chemistry and Metallurgy Research Replacement Project at Los Alamos National Laboratory to replace the existing 50-year old facility…

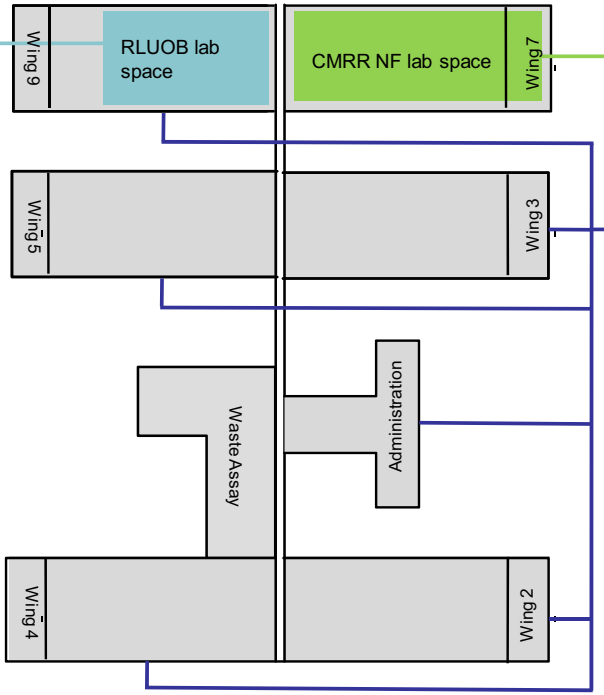
  "Funding for CMRR identified as one of several key investments "required to sustain a safe, secure, and effective nuclear arsenal"

Tab 19

Mello Aff #1, par 23: http://www.lanl.gov/orgs/cmrr/publicmeetings/documents/proceedings/laur09_02749vol7.pdf

Comparison of CMRR Nuclear Facility Space to CMR

Existing CMR Building Layout

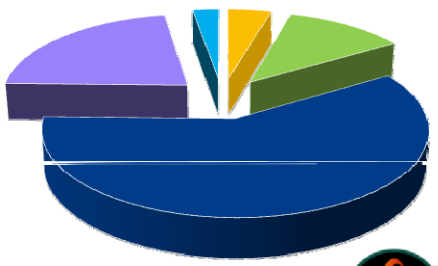


CMRR RLUOB net lab space = 19,500 square feet (radiological)

CMRR Nuclear Facility net lab space = 22,500 square feet (Hazard Category 2 "Nuclear")

CMR Laboratory Wings (main floor only) = [22,000 - 27,000] square feet space
Total of 7 wings = approx. 180,000 square feet wing space

CMRR Nuclear Facility Space



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CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

CMRR Facility operations at TA-55 under this alternative would be conducted at the levels of activity described for the Expanded Operations Alternative in the *LANL SWEIS*. The Expanded Operations Alternative presented in the *LANL SWEIS* provides the reference point from which incremental effects of this proposed action are measured.

4.3.1 Land Use and Visual Resources

4.3.1.1 Land Use

Tab 20 - Mello Aff #1, par. 27, ref 2

Construction and Operations Impacts—Total land disturbance during construction of the new CMRR Facility at TA-55, would involve 26.75 acres (10.8 hectares). Permanent disturbance, consisting of land used for buildings and parking lots, would impact 13.75 acres (5.6 hectares). The remaining 13 acres (5.26 hectares) would consist of a construction laydown area of 2 acres (0.8 hectares), an area for a concrete batch plant of 5 acres (2 hectares) maximum, and land affected by a road realignment of 6 acres (2.4 hectares). Potential development sites at TA-55 include some areas that have already been disturbed, as well as others that are currently covered with native vegetation including some mature trees that would have to be cleared prior to construction. Construction and operation of a new CMRR Facility at TA-55 would be consistent with both the *LANL SWEIS* and *LANL Comprehensive Site Plan* designations of the area for Research and Development and Nuclear Materials Research and Development, respectively (see Section 3.2.1).

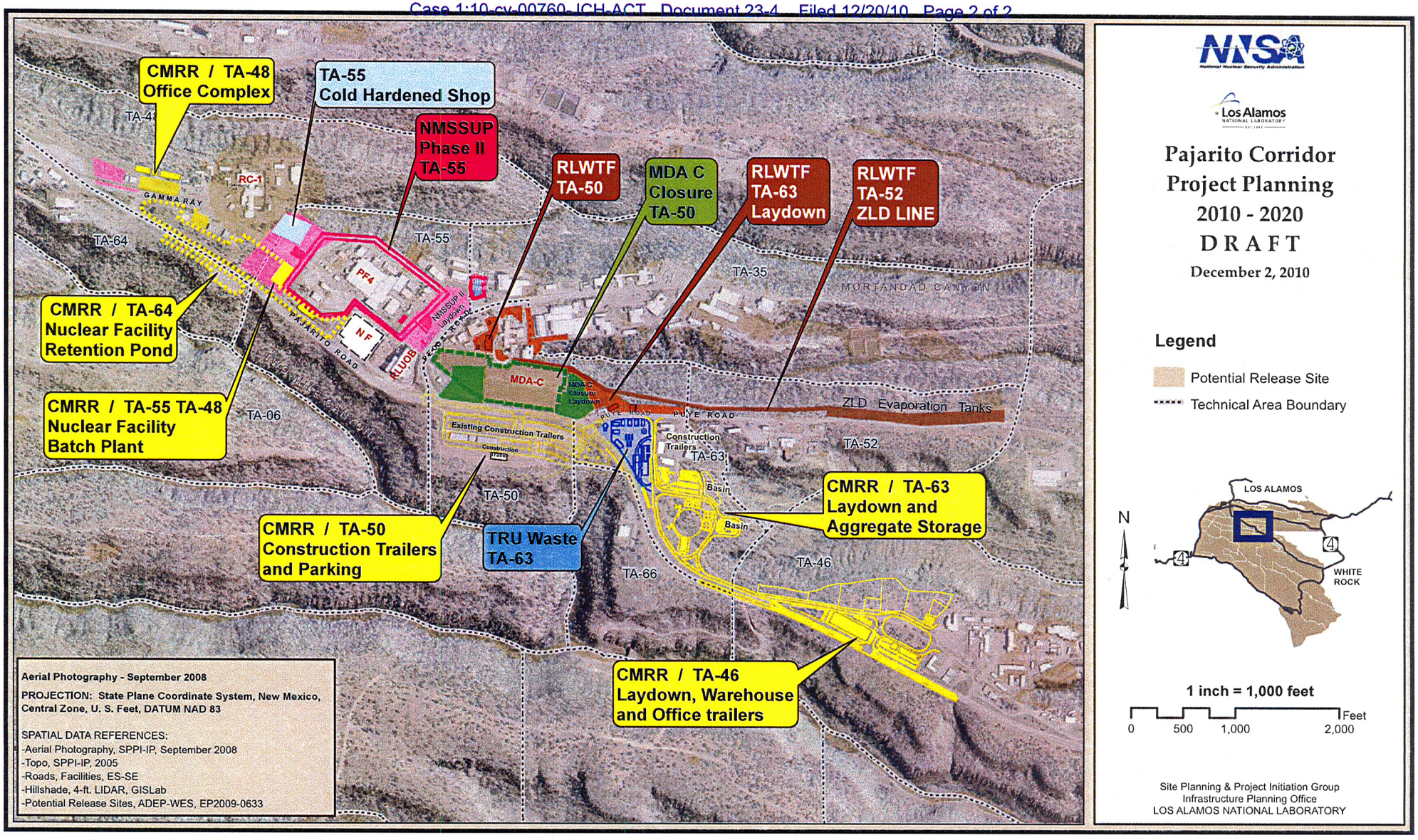
4.3.1.2 Visual Resources

Construction and Operations Impacts—Impacts to visual resources resulting from the construction of the new CMRR Facility at TA-55 would be temporary in nature and could include increased levels of dust and human activity. Once completed, the administrative offices and support functions building would be three stories above grade. Regardless of the construction option selected under this alternative, the Hazard Category 2 and Hazard Category 3 Laboratory Building(s) would be no more than one story in height. The general appearance of the new CMRR Facility would be consistent with other buildings located within TA-55. Facilities would be readily visible from Pajarito Road and from the upper reaches of the Pajarito Plateau rim. Although the new CMRR Facility would add to the overall development at TA-55, it would not alter the industrial nature of the area. Accordingly, the current Class IV Visual Resource Contrast rating for TA-55 would not change.

4.3.2 Site Infrastructure

Annual site infrastructure requirements for current LANL operations, as well as current site infrastructure capacities, are presented in **Table 4–6**. These values provide the reference point for the LANL site infrastructure impact analyses presented in this section. The table also presents projected site infrastructure requirements that incorporate both the forecasted demands of the *LANL SWEIS* Expanded Operations Alternative and those of non-LANL users relying on the same utility systems. The *LANL SWEIS* identified that peak electrical demand could exceed site electrical capacity. In addition, whereas the *LANL SWEIS* had projected that water use would remain within DOE water rights, DOE recently conveyed 70 percent of its water rights to

Tab 21



NNSA
National Nuclear Security Administration

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Pajarito Corridor Project Planning 2010 - 2020

D R A F T

December 2, 2010

Legend

- Potential Release Site
- Technical Area Boundary

1 inch = 1,000 feet

0 500 1,000 2,000 Feet

Site Planning & Project Initiation Group
Infrastructure Planning Office
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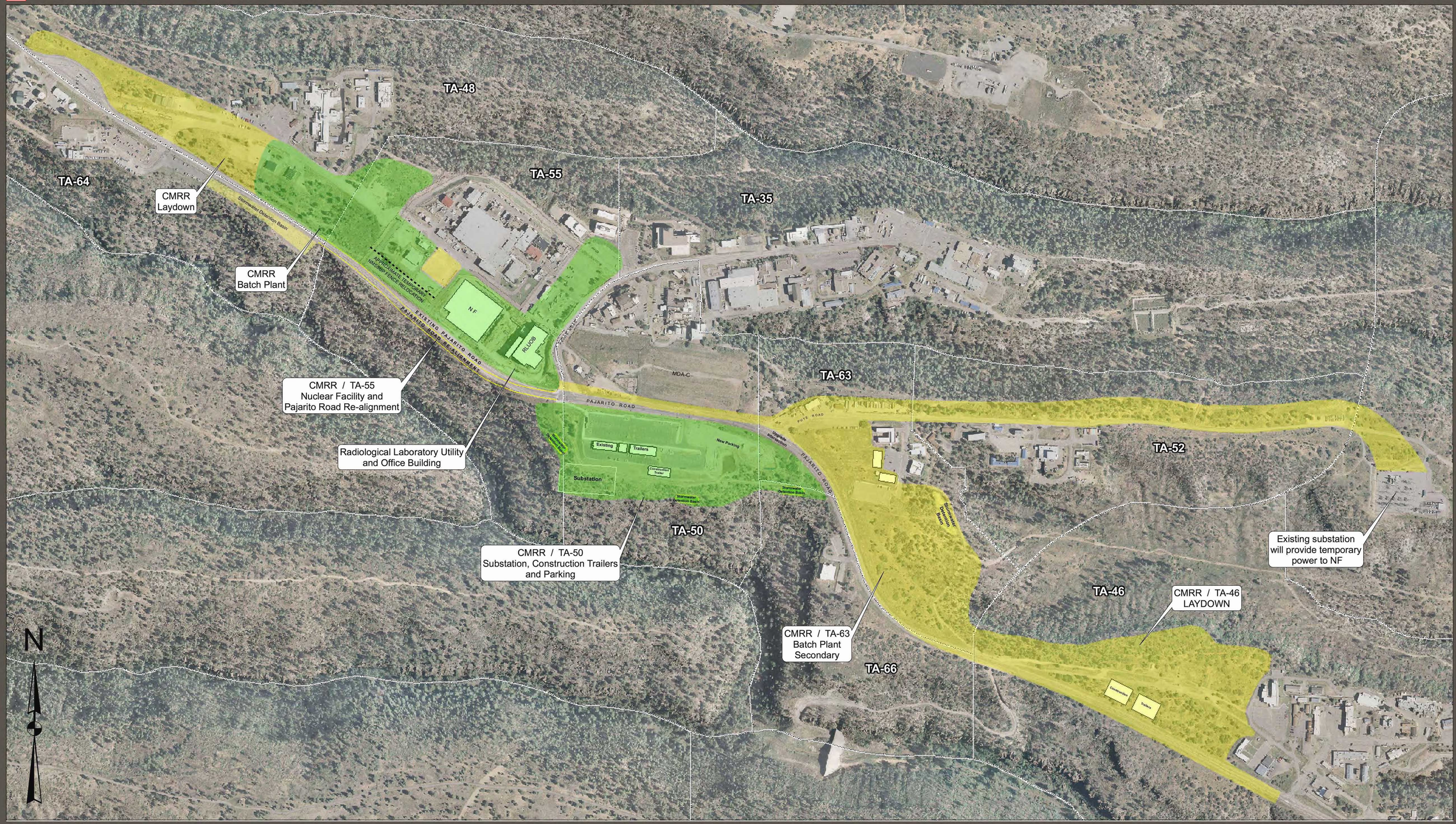
Tab 22



Mello Aff #1, Par 27, Ref 1, EXHIBIT 4

CMRR Nuclear Facility Project Overview

October 2010

Aerial Photography - September 2008

Los Alamos NATIONAL LABORATORY EST. 1943

National Nuclear Security Administration

LA-UR 10-07047

Legend

- Proposed 2010/2011 SEIS Project Activities
- Previously Evaluated in 2003 EIS and 2005 SA
- Technical Area Boundary

PROJECTION: State Plane Coordinate System, New Mexico, Central Zone, U. S. Feet, DATUM NAD 83

SPATIAL DATA REFERENCES:
-Aerial Photography, SPPI-IP, September 2008
-Roads, Facilities, ES-SE
-Hillshade, 4-ft. LIDAR, GISLab
-Potential Release Sites, ADEP-WES, EP2009-0633

0 100 200 400 600 800 1,000 1,200 Feet

1 inch = 200 feet

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Site Planning & Project Initiation Group
Infrastructure Planning Office
LOS ALAMOS NATIONAL LABORATORY

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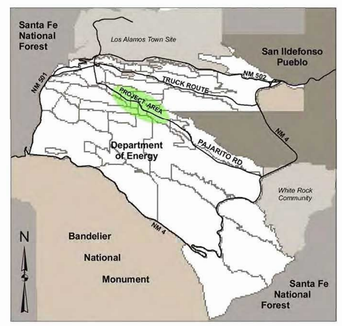
Geographic Information Systems
CMRR_Project_Overview_Public_v2.mxd



Tab 23 - Mello Aff #2, Par 12a

Table 2. Comparative Analysis and Potential Consequences of CMRR Proposed Action

Resource	*CMRR EIS Basis for Impact Analyses*	*Current CMRR Project Plans*	*Potential Consequences of Current CMRR Project Plans*[1]
Land Use and Visual Resources			
Land Use	Total acres disturbed: 26.75[2] • Permanent use: 8.75 acres ◊ RLUOB: 4 acres ◊ NF: 4.75 acres • Temporary/Other Construction Use: ◊ 18 acres (laydown areas, batch plant, road shift, parking)	Total acres disturbed: 83 acres • Permanent use: 30 acres ◊ RLUOB: 4 acres ◊ NF: 4.75 acres ◊ Other (road, parking, power): 21 acres • Temporary/Other Construction (laydown areas, concrete plant, office trailers): 53 acres	There would be no significant impacts to land use. Construction and operation of the CMRR is consistent with the LANL Comprehensive Site Plan and the industrial land uses designated for the Pajarito Corridor. There would be no long-term negative impacts to visual resources. The number of above grade stories has increased by one-half story from the original proposal. Most of the areas for the planned and proposed CMRR construction have been previously disturbed and are located in areas with an industrial character. A limited amount of previously undisturbed land will be impacted (TA-48/55 laydown areas, road shift, TA-50 office trailers); however, these areas are constrained by surrounding structures and roadways and are industrial in character. The completed CMRR-NF would be visible from Pajarito Road and nearby LANL technical areas. Lighting would be designed to minimize spill into nearby canyons and to avoid sky glow in compliance with LANL Engineering Standards and the Habitat Management Plan.
Infrastructure			
Site-Wide Infrastructure Characteristic or Capacity	*Water*: Available Capacity[3]: 198 million gallons per year (MG/yr) *Power*: Total Demand[4]: 491,186 megawatt hours per year (MWhr/yr) Peak Demand: 85.5 MWhr *Natural Gas*: Site Usage[5]: 2530 million cubic feet per year (Mm cu ft/yr)	*Water*: Available Capacity[6]: 105 MG/yr *Power*: Total Demand[7]: 626,400 MWhr/yr Peak Demand: 109 MWhr *Natural* Gas: Site Projected Usage[8]: 1197 Mm cu ft/yr	There would be no significant impacts to site-wide infrastructure beyond those bounded by the 2008 SWEIS.

Tab 24

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW MEXICO

THE LOS ALAMOS STUDY GROUP,

Plaintiff,

v. Case No. 1:10-CV-0760-JH-ACT

UNITED STATES DEPARTMENT OF ENERGY; THE HONORABLE STEPHEN CHU, in his capacity as SECRETARY, DEPARTMENT OF ENERGY; NATIONAL NUCLEAR SECURITY ADMINISTRATION; THE HONORABLE THOMAS PAUL D'AGOSTINO, in his Capacity as ADMINSTRATOR, NATIONAL NUCLEAR SECURITY ADMINISTRATION,

Defendants.

AFFIDAVIT OF Jody Benson

State of New Mexico)
) ss.
County of Los Alamos)

Jody Benson, under penalty of perjury, hereby declares as follows this 2 day of November 2010:

1. I am a citizen of the State of New Mexico and reside in the county of Los Alamos. I work with the Earth and Environmental Sciences Division at Los Alamos National Laboratory; our Division has teams located in TA-3 as well as TA-51 and TA-48 on the Pajarito Corridor. I am writing these views as a private citizen; however I am active in the community of Los

Corridor construction sites, as well as State Route 501, the main "Hill" road. I perceive the following harms to the economy and community values of Northern New Mexico, specifically Los Alamos, if the project continues as now planned:

A. Traffic Impacts on St. Rd. 4: The current NEPA document does not include a regional assessment of traffic impacts. The thousands of haulage trucks would likely necessitate upgrading State Rd 4 from "the Y" (juncture of NM 502 and NM 4) to Pajarito Rd, including widening the road and upgrading the traffic signals. Unless these requisite upgrades are paid for by the project, they would commit our very limited State transportation money to a very small, and currently inadequate five-mile stretch of road and four intersections.

B. Traffic Impacts of the Parking Lot on the Truck Route and Sandia Canyon: Included in traffic impacts: The proposed parking lot in Sandia Canyon (the Truck Route) from which buses will transport the workers to the Pajarito Corridor must be readdressed. Thousands of workers commute to LANL every day. Including another thousand cars, then creating a parking lot below TA-55 would not only destroy a large ecosystem, but require significant upgrades to the Truck Route. The traffic to the proposed parking area would impede normal LANL-commuter traffic; a signal would be required.

C. Need for a regional traffic assessment that includes an analysis of the benefits of a shared commuter parking area (e.g., at one of the casinos), and establishing a commuter-bus system from those parking lots that already exist. This would reduce excessive damage to the fragile Pajarito Plateau ecosystem as well as to commuters who are likely to experience delays, broken windshields, and other hazards and harms. Project funding should include leasing parking.

Tab 25 - Mello Aff #2, Par 12b

Table 2. Continued

Resource	*CMRR EIS Basis for Impact Analyses*	*Current CMRR Project Plans*	*Potential Consequences of Current CMRR Project Plans*[1]
Natural Gas	Construction (NF & supporting structures): • No information provided Operations (RLUOB and NF): • No information provided	Construction (NF & supporting structures): • None Operations (RLUOB and NF): • 140 Mm cu ft/yr, 12% increase in usage (use of natural gas is restricted to the utility building attached to the RLUOB to supply boilers and emergency generators)	The CMRR EIS did not project the amount of natural gas needed for construction or operations at the RLUOB and CMRR-NF. Natural gas use is bounded by 2008 SWEIS; within site-wide limits.
Geology and Soils			
	Construction[11]: • NF: Excavate to 50-ft depth; 117,000 cu yds of material removed • Tunnels & Trenching: Excavate to 50-ft depth; 122,300 cu yds of material removed Operations: Not expected to impact geologic and soil resources. Facilities are sited to minimize risk from geologic hazards including earthquakes. Note: The potential to encounter contaminated soils is discussed below under "Potential Release Sites."	Construction: • NF: Excavate to 125-ft depth, between 375,000 and 500,000 cu yds of material removed • Tunnels & Trenching: Excavate to 50-ft depth; 113,500 cu yds of material removed This represents an increased depth of excavation (additional 75 ft) and increased material removed (additional 249,200 to 374,200 cu yds) compared to the CMRR EIS analysis. The excavated material (spoils) will be beneficially reused on other projects: Approximately 153,000 cu yds of the material will be reused as fill for other CMRR construction-related projects (such as for grading or fill to prepare laydown areas); the remaining amount will be staged at a LANL-wide materials staging area for future beneficial reuse on other LANL projects.	There will be some impacts to local geology as a result of the additional disturbance of subsoil during the NF construction. This additional disturbance is required for the NF construction to meet the seismic protection requirements (see discussion in Section 3). As stated in the CMRR EIS, the building must be constructed to minimize risks to workers, public, and environment from geologic hazards, including earthquakes. The planned and proposed activities meet this requirement. The magnitude and consequences of impacts related to the CMRR Project's total disturbance of subsoil are small in comparison to those bounded under the MDA remediation actions covered by the 2008 SWEIS ROD; that analysis considered the impacts associated with removal of up to 2.5 million cubic yards of crushed tuff and other material (DOE 2008a).

Tab 26

Mello Aff#1, Par 30, Ref 2:
http://www.lanl.gov/projects/pcc/presentations/John-Bretzke_Prensation_for_Community_Forum.pdf

Pajarito Construction Activities

John Bretzke, Deputy Associate Director

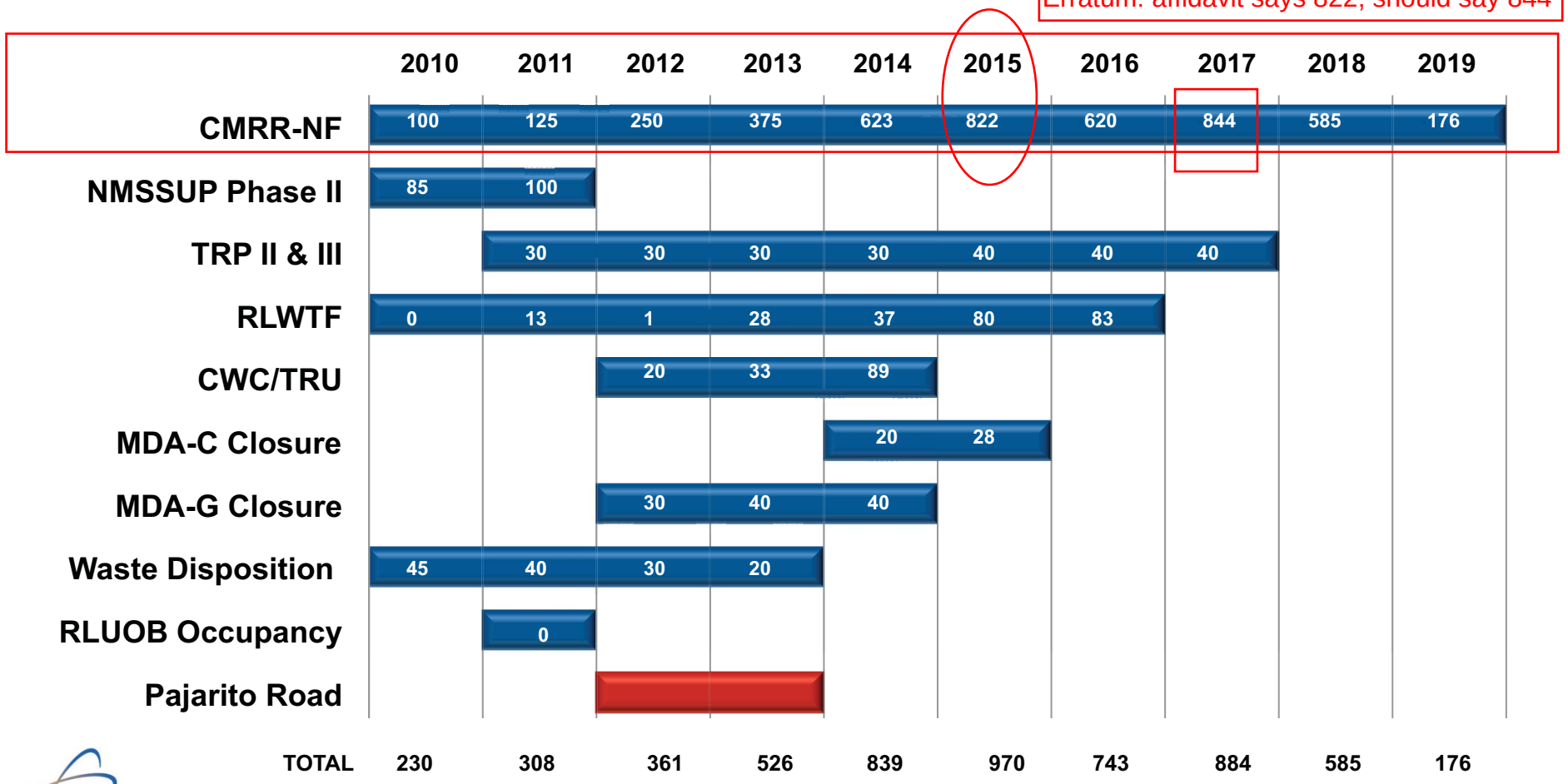
Project Management & Site Services, LANL

June 16, 2010

LA-UR-10-04023

Project Construction Craft Personnel

Erratum: affidavit says 822; should say 844



Tab 27

LANL Construction Corridor

Tom McKinney, Associate Director

Project Management and Site Services Directorate

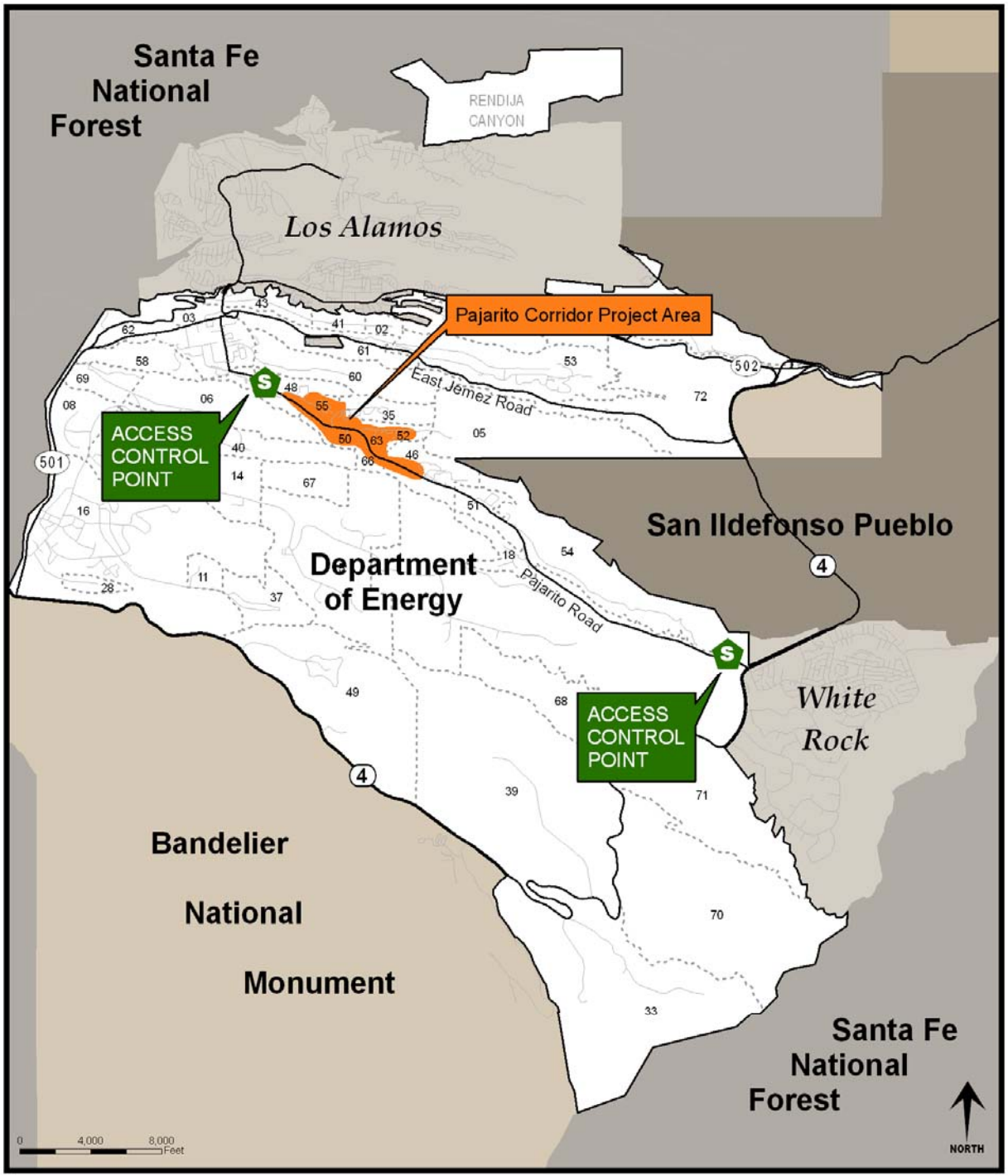
Los Alamos National Laboratory

September 8, 2010

LA-UR 10-05995

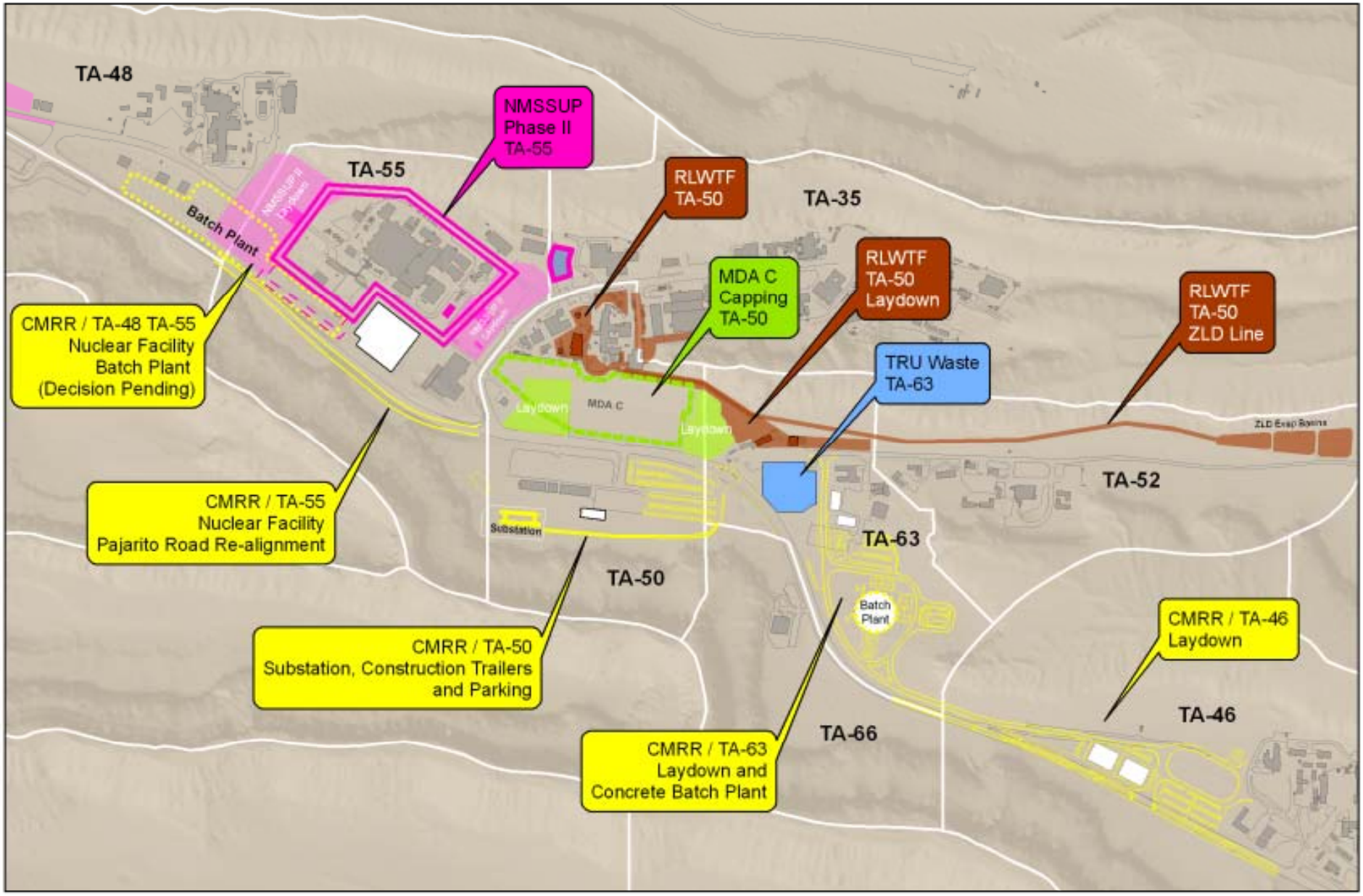
Construction Forum June 16, 2010

- **Share LANL planning process for construction projects along the Pajarito Road Corridor for the next ten years**
- **Share constraints which can change LANL's planning**
  - Federal budget process
- **Share LANL's approach to management of construction projects**


Santa Fe National Forest
RENDIJA CANYON
Los Alamos
Pajarito Corridor Project Area
East Jemez Road
ACCESS CONTROL POINT
501
502
4
San Ildefonso Pueblo
Department of Energy
Pajarito Road
ACCESS CONTROL POINT
White Rock
Bandelier National Monument
Santa Fe National Forest
0
4,000
8,000
Feet
NORTH

Major Projects - Near Concurrent Activities

1. **Chemistry & Metallurgy Research Replacement (CMRR)**
   - Radioactive Laboratory/Utility/Office Building (RLUOB) Occupancy
   - RLUOB Equipment Installation (REI)
   - Nuclear Facility (NF)
2. **Nuclear Materials Safeguards and Security Upgrade Project (NMSSUP) Phase II**
3. **Transuranic Waste Facility (TRU)**
4. **TA-55 Revitalization Project (TRP) Phase II & III**
5. **Radioactive Liquid Waste Treatment Facility (RLWTF)**
6. **Material Disposal Area - C Closure**
7. **Material Disposal Area - G Closure**
8. **Waste Disposition Project**



Pajarito Corridor Project Planning / 2010 - 2020

Los Alamos NATIONAL LABORATORY

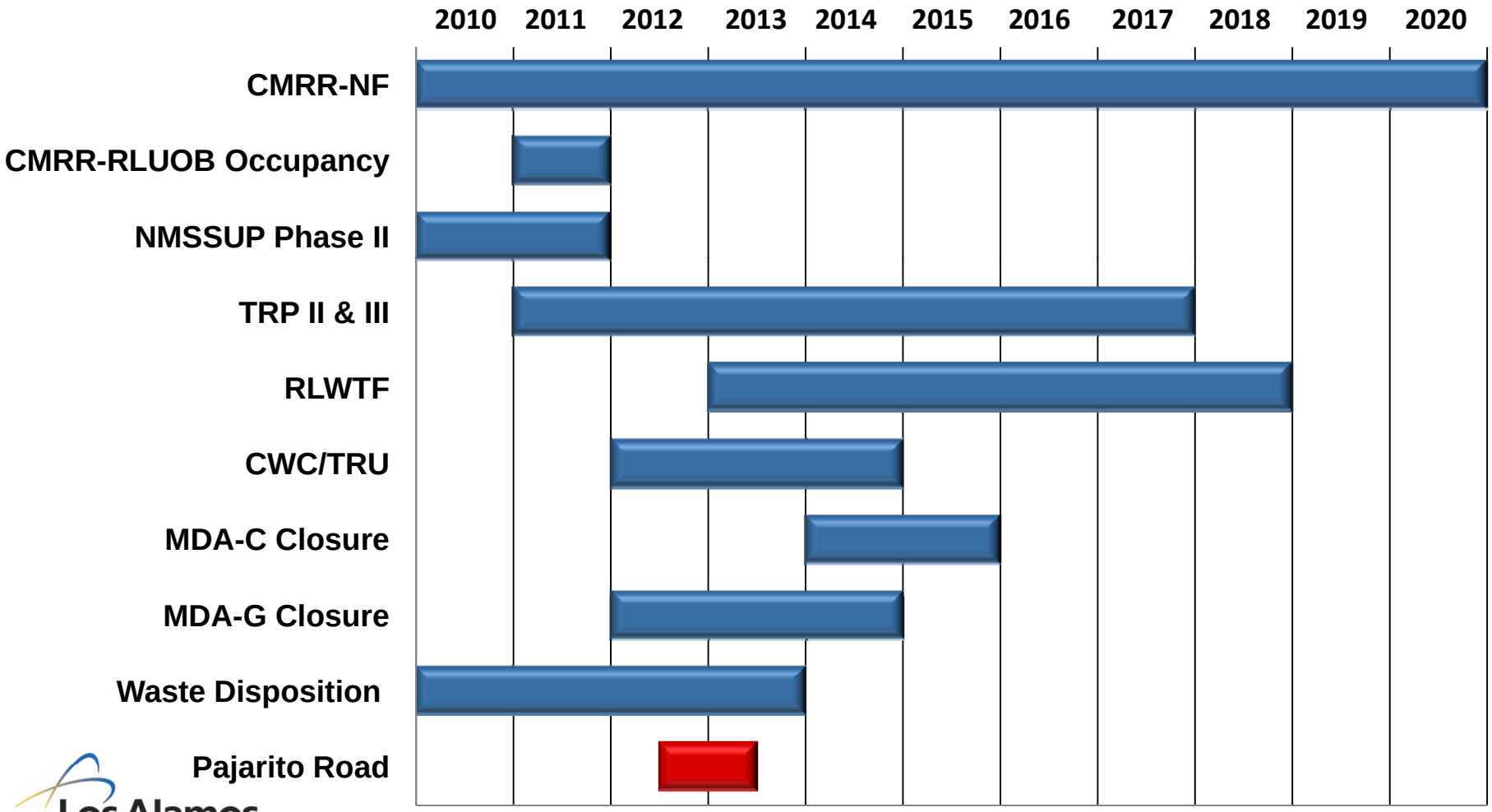
NNSA

August 12, 2010

N W E S

0 365 730 1,460 2,190 2,920 Feet

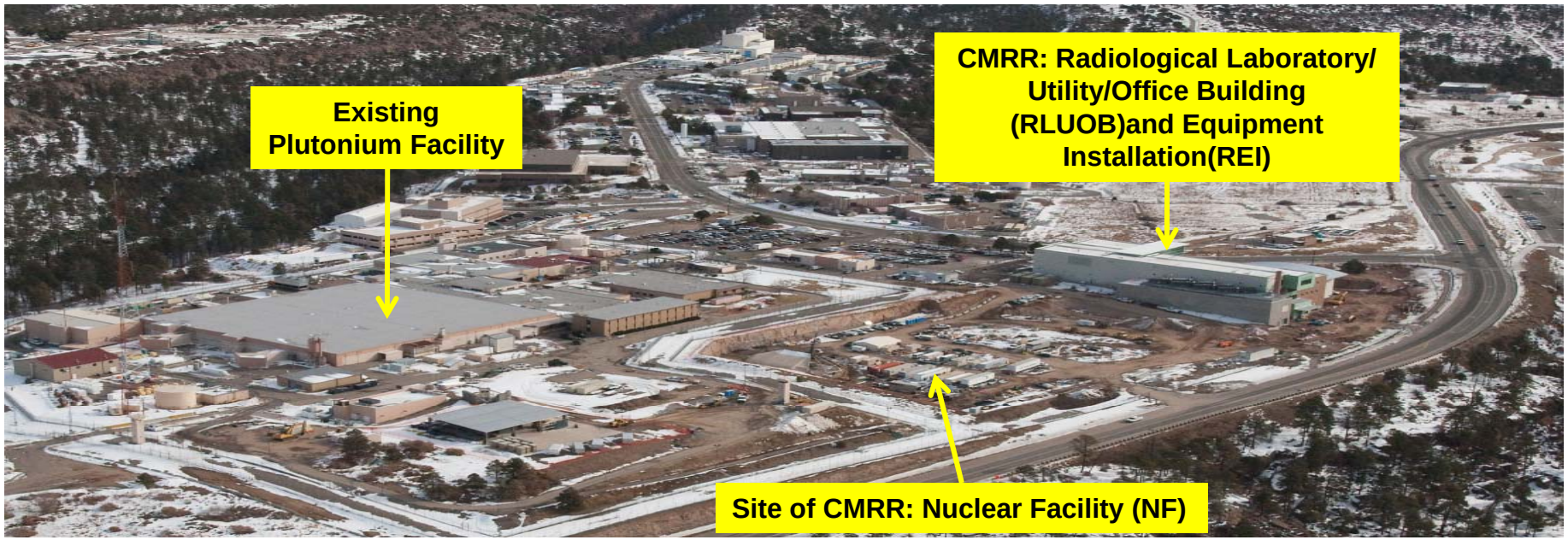
Timeline of Major Projects on Pajarito Corridor through 2020



Construction Manpower Projections

- During peak construction crafts will exceed 900
- Support services will be relatively constant over project at 150-200
- Engineering and design resources will be heaviest at the start of the project and will be mostly off site
- Startup and operations personnel will be relatively small as compared to other resources and will reach a maximum of about 100 at the end of construction

Chemistry and Metallurgy Research Replacement Project



CMRR - Nuclear Facility Construction Strategy

- **Significant effort (design and construction) performed by subcontractors**
- **LANL CMRR Team integrator/manager of all activities**
- **Design deliverables include all products necessary to construct**
- **35 separate construction packages planned for award**
- **Superior performance to be acknowledged and incentivized through entire construction period**

Cultural Resources

- **LANL's commitment to protect cultural resources:**
  - LANL has a commitment to protect and preserve cultural resources. The Laboratory has been extensively surveyed and areas of cultural significance have been identified.

- **Cultural resources identified to date in CMRR project area:**
  - Native American ancestral areas – identified sites in approved areas for project use to date will be avoided. The SHPO has concurred with a "no effect through avoidance" determination.
  - McDougall Homestead – early 1900s era structures and artifacts – mitigated with concurrence with the State Historic Preservation Officer (SHPO)

Environmental Stewardship

- **LANL takes its environmental stewardship seriously with numerous programs in place to protect the environment**
- **Environmental requirements are included subcontracting process**
- **Environmental Programs construction activities support closure of contaminated areas in compliance with the RCRA NM Consent Order**
- **Existing construction programs have been recognized for their excellence in environmentally conscious design**
  - 2010 NNSA Best-in Class: Sustainable Design/Green Buildings-RLUOB
  - 2010 DOE EStar: Sustainable Design/Green Buildings-RLUOB
- **Nuclear Facility will be Leadership in Energy and Environmental Design (LEED) certified**
- **Supplemental EIS discussion pending**
- **Los Alamos Study Group Law Suit in August 2010 (NEPA litigation)**

On-going Studies

- **Utility planning**
- **Traffic studies**
- **Site selection for parking and truck inspection facilities**
- **Institutional impacts during construction**

Tab 28 - Mello aff 3, par 89, ref 73

November 2010 Update to the National Defense Authorization Act of FY2010 Section 1251 Report
New START Treaty Framework and Nuclear Force Structure Plans

1. Introduction

This paper updates elements of the report that was submitted to Congress on May 13, 2010, pursuant to section 1251 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111-84) ("1251 Report").

2. National Nuclear Security Administration and modernization of the complex – an overview

From FY 2005 to FY 2010, a downward trend in the budget for Weapons Activities at the National Nuclear Security Administration (NNSA) resulted in a loss of purchasing power of approximately 20 percent. As part of the 2010 Nuclear Posture Review, the Administration made a commitment to modernize America's nuclear arsenal and the complex that sustains it, and to continue to recruit and retain the best men and women to maintain our deterrent for as long as nuclear weapons exist. To begin this effort, the President requested a nearly 10 percent increase for Weapons Activities in the FY 2011 budget, and $4.4 billion in additional funds for these activities for the FY 2011 Future Years Nuclear Security Plan (FYNSP).[1] These increases were reflected in the 1251 report provided to Congress in May 2010.

The Administration spelled out its vision of modernization through the course of 2010. In February, soon after the release of the President's budget, the Vice President gave a major address at the National Defense University in which he highlighted the need to invest in our nuclear work force and facilities. Several reports to Congress provided the details of this plan, including: NNSA's detailed FY 2011 budget request, submitted in February; the strategy details in the *Nuclear Posture Review* (NPR) (April); the 1251 report (May); and the multi-volume *Stockpile Stewardship and Management Plan (SSMP)* (June). Over the last several months, senior Administration officials have testified before multiple congressional committees on the modernization effort.

The projections in the Future Years Nuclear Security Plan (FYNSP) that accompanied the FY 2011 budget submission and the 1251 report by the President are, appropriately called, 'projections.' They are not a 'fixed in stone' judgment of how much a given project or program may cost. They are a snapshot in time of what we expect inflation and other factors to add up to, given a specific set of requirements (that are themselves not fixed) over a period of several years. Budget projections, whether in the FYNSP and other reports, are evaluated each year and adjusted as necessary.

---

[1] After adjustment for the transfer of the Pit Disassembly and Conversion Facility from the Weapons Activities account to the Defense Nuclear Nonproliferation Account the increase over the FYNSP is actually $5.4 billion.

Secretary of Energy is convening his own review, with support from an independent group of senior experts, to evaluate facility requirements.

The overriding focus of this work is to ensure that UPF and CMRR are built to achieve needed capabilities without incurring cost overruns or scheduling delays. We expect that construction project cost baselines for each project will be established in FY 2013 after 90% of the design work is completed. At the present time, the range for the Total Project Cost (TPC) for CMRR is $3.7 billion to $5.8 billion and the TPC range for UPF is $4.2 billion to $6.5 billion. TPC estimates include Project Engineering and Design, Construction, and Other Project Costs from inception through completion. Over the FYNSP period (FY 2012-2016) the Administration will increase funding by $340 million compared with the amount projected in the FY 2011 FYNSP for the two facilities.

At this early stage in the process of estimating costs, it would not be prudent to assume we know all of the annual funding requirements over the lives of the projects. Funding requirements will be reconsidered on an ongoing basis as the designs mature and as more information is known about costs. While innovative funding mechanisms, such as forward funding, may be useful in the future for providing funding stability to these projects, at this early design stage, well before we have a more complete understanding of costs, NNSA has determined that it would not yet be appropriate and possibly counterproductive to pursue such a mechanisms until we reach the 90% design point. As planning for these projects proceeds, NNSA and OMB will continue to review all appropriate options to achieve savings and efficiencies in the construction of these facilities.

The combined difference between the low and high estimates for the UPF and CMRR facilities ($4.4 billion) results in a range of costs beyond FY 2016 as shown in Figure 3. Note that for the high estimate, the facilities would reach completion in FY 2023 for CMRR and FY 2024 for UPF. For each facility, functionality would be attainable by FY 2020 even though completion of the total projects would take longer.

Tab 29 - Mello aff 3, par 95, ref 79

The White House

Office of the Press Secretary

For Immediate Release November 17, 2010

Fact Sheet: An Enduring Commitment to the U.S. Nuclear Deterrent

President Obama has made an extraordinary commitment to ensure the modernization of our nuclear infrastructure, which had been neglected for years before he took office. Today, the Administration once again demonstrates that commitment with the release of its plans to invest more than $85 billion over the next decade to modernize the U.S. nuclear weapons complex that supports our deterrent. This represents a $4.1 billion increase over the next five years relative to the plan provided to Congress in May. This level of funding is unprecedented since the end of the Cold War.

In the five years preceding the start of this Administration, the National Nuclear Security Administration (NNSA) – charged with sustaining America's aging nuclear complex and stockpile – lost 20 percent of its purchasing power. As part of the 2010 Nuclear Posture Review, the Administration made a commitment to modernize our nuclear arsenal and the complex that supports it. To begin this effort, the President requested $7 billion for NNSA in fiscal year 2011 (FY 2011) – an increase of nearly 10 percent over the prior year.

Today's release of updated investment plans (in an update to the *'Section 1251 Report to Congress'*) shows this Administration's commitment to requesting the funding needed to sustain and modernize the nuclear complex. In particular, the Administration plans will:

- Add nearly $600 million in funding for FY 2012, resulting in a total planned FY 2012 budget request of $7.6 billion for NNSA weapons activities;
- Increase funding by $4.1 billion increase over the next five years relative to the plan provided to Congress in May – including an additional $340 million for the Uranium Processing Facility (Tennessee) and the Chemistry and Metallurgy Research Replacement (CMRR) facility (New Mexico); and
- Propose spending more than $85 billion for NNSA weapons activities over the next decade.

The above plans provide the best current estimate of costs for the nuclear weapons stockpile and infrastructure. As the UPF and CMRR facilities are only at the 45 percent design level, the Administration recognizes that the costs could change over time. At the present time, the range for the Total Project Cost for CMRR is $3.7 billion to $5.8 billion and the range for UPF is $4.2 billion to $6.5 billion. The Administration is committed to requesting the funds necessary to ensure completion of these facilities. The potential additional costs associated with these facilities are shown in the table below.

Planned Projections for Weapons Stockpile and Infrastructure Spending
(*then-year dollars in billions*)

Fiscal Year										
FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
6.4	7.0	7.6	7.9	8.4	8.7	8.9	8.9 – 9.0	9.2 – 9.3	9.4– 9.6	9.4– 9.8

BLOG POSTS ON THIS ISSUE

January 19, 2011 6:50 PM EST
First Lady Michelle Obama: "When You Study Abroad, You're Helping to Make America Stronger"

The First Lady focuses on the importance of studying abroad in support of the President's "100,000 Strong Initiative" – a program that aims to increase the number of Americans who have the opportunity to study in China.

January 19, 2011 10:54 AM EST
President Obama Welcomes President Hu of China to the White House
At the Arrival Ceremony for the China State Visit, President Obama welcomes President Hu of China and calls for more productive cooperation between the two nations.

January 19, 2011 8:20 AM EST
Watch Live: The China State Visit
The President hosts Hu Jintao, President of the People's Republic of China, at the White House for an official State visit. Watch the Official Arrival Ceremony, State Dinner toasts, and more on WhiteHouse.gov.

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But while the initial long-term CRs from each chamber have failed, the bills established parameters for debate on funding. The House bill cut much more significantly from the Obama Administration's projected boost for the weapons program, halving the planned $624 million increase for the program. By contrast, the Senate version of the CR would provide a $439 million increase for the program, a cut of $185 million. That Senate bill mirrored funding figures provided to Congress by the NNSA last month, but it appeared to contradict a pledge a made during debate on the New START Treaty in December by top Senate appropriators Daniel Inouye (D-Hawaii), Dianne Feinstein (D-Calif.), Thad Cochran (R-Miss.) and Lamar Alexander (R-Tenn.). In that letter, the appropriators pledged to support full funding for the Administration's modernization plan, which calls for $85 billion from FY2011 to FY2020 to maintain and modernize the nation's weapons complex and arsenal.

A Senate aide said that the bill should not be interpreted as evidence of a decreased commitment to modernization but as a reflection of the budgetary climate in Congress. "When you're faced with some of the sharpest cuts in U.S. history to discretionary spending that changes the calculus," the aide said. "That doesn't mean there is not a commitment to modernization; perhaps just not at those levels, especially when it means significant cuts to other priority areas, such as nonproliferation."

Modernization Commitment Questioned

Even more concerning than the Senate bill, according to aides, is that the weapons activities funding level in the bill was generated through communication with NNSA and what the minimum FY2011 funding level the agency needs to operate. "The budget was the budget that was submitted. That's what the Administration said was needed, and that was obviously a large element of the New START debate," one aide told *NW&M Monitor*. "It really begs the question whether the Administration is going to stand by its commitment to fully fund the modernization plan or not."

According to the NNSA analysis provided to Congress, the $6.83 billion funding level would allow the agency to accelerate funding for priority programs like life extension work on the W76 and B61 weapons systems, "largely maintains" design schedules for multi-billion-dollar construction projects like the Chemistry and Metallurgy Research Replacement-Nuclear Facility and the Uranium Processing Facility, and keeps experiment schedules on facilities like the Dual Axis Radiographic Hydrotest Facility and National Ignition Facility in line with previous plans. It would reduce funding for plutonium sustainment, advanced certification, tritium readiness, and other programs. NNSA spokesman Damien LaVera said the agency would not comment on how it generated the funding numbers that it has provided to Congress. "We continue to work with our interagency colleagues and Congressional leadership to provide the information they need to make informed choices about the resources required to implement the President's nuclear security agenda," LaVera said in a statement. "NNSA is not in a position to comment on the ongoing negotiations regarding continuing resolutions, nor would we presume to comment on hypothetical situations related to future votes or proposals."

Senate aides said the NNSA hemmed itself in by saying it could survive with less money, which could make it harder for Republicans or the Administration—Vice President Joe Biden is heading up negotiations on a long-term CR—to make a case for more funding. "It's hard for them to push back for a higher number if you've got the NNSA saying we can live with this," the aide said. The NNSA shouldn't have supported a lower number, another aide said. "The answer to what was needed should've been 'the President's budget.' That was certainly what the answer was all throughout the START process," the aide said. "It's amazing how they went 12 months saying the '1251' plan is all that's needed and then they change their story."

A Bad Sign for CTBT?

But the funding issues have fueled speculation that it the Administration could have a much tougher time getting the Senate to sign off on Obama's other nuclear security priorities, like the Comprehensive Test-Ban Treaty. "If I were the Administration and I was going to come up here and somehow make an argument for CTBT and I was going to be a CTBT proponent and I was going to say, 'Look, we've got the modernization plan and the reliability of the stockpile is assured—if the first year it's whacked—I would be very concerned about my abilities to sell CTBT on the Hill," an aide said.

—Todd Jacobson

NNSA OFFICIALS DEFEND POTENTIAL RELAXED REQUIREMENTS AT CMRR-NF

Changes that Have Drawn Concern of Defense Board Still Being Studied

LOS ALAMOS, N.M.—National Nuclear Security Administration officials said this week that they are still studying the possibility of eliminating or downgrading fire suppression systems in a proposed nuclear facility at Los Alamos National Laboratory, which is an issue that has drawn concern from federal overseers. In a letter last month to NNSA, the Defense Nuclear Facilities Safety Board expressed concerns about changing the safety strategy and relaxing risk-based design requirements at the multi-

billion-dollar Chemistry and Metallurgy Research Replacement-Nuclear Facility. The changes are offered as cost-cutting alternatives for the increasingly expensive project. Among seven questions raised by DNFSB Chairman Peter Winokur to NNSA Administrator Tom D'Agostino, one requested an explanation for the potential elimination of fire suppression in a plutonium storage vault. Another asked for supporting documentation about lowering a safety classification in the facility from safety-class to safety-significant.

At a semiannual public meeting March 10 at Fuller Lodge in Los Alamos, Steve Fong of NNSA's CMRR-NF project team acknowledged that the proposals had been put forward by the laboratory, but said the modifications would have to pass an extensive review before they could be accepted in a formal safety analysis document. "Can we reduce some of the fire systems in the vault?" Fong said. "Only if we determine through analysis that it is warranted." Roger Snyder, the site office's deputy manager, said it is too early to tell if changes can be made. "No decisions have been made yet because the issues have yet to be analyzed," he said. Snyder said early estimates can be overly conservative and are meant to be refined as the design evolves. "If they can maintain the equivalent safety, then it's our duty to look at whether they are actually needed," he said.

NNSA HQ Officials Defend Plans to Congress

At a House Energy and Water Appropriations Subcommittee hearing last week, NNSA Administrator Tom D'Agostino defended the agency's approach to designing the facility, but conceded that the NNSA and the DNFSB have "technical differences" in regards to some safety features. "Our priority, of course, is balance," D'Agostino told the panel. "… Each and every one of us manages risk at any point in time and so I expect obviously as this design matures and decisions need to be made on, 'Well, should we put this in the building or should we put that in the building,' we will have differences of views and we'll resolve those."

NNSA Defense Programs chief Don Cook told the panel that the primary driver that would allow a relaxation of some safety requirements was the amount of material at risk in the facility. He said if the material at risk in the facility could be decreased, some of the safety systems, like the fire suppression system and active ventilation system, could be down-graded. "The amount of money that we have to invest in all of that is critically dependent on the material at risk," Cook said. "And so my question [to project officials] is have we gotten that material at risk at the lowest level possible?" The current estimated cost range for the nuclear portion of the project, the largest and most complicated piece, pegs the probable cost between $3.7 and $5.8 billion. The facility isn't expected to be fully operational until 2023. The facility is intended to support nuclear pit and stockpile stewardship capabilities into the future.

Prelim Construction Activities in October?

In response to questions, the federal managers of the laboratory also revealed preliminary plans to begin some pre-construction infrastructure work on the CMRR-NF facility later this year, subject to several contingencies. If current spending plans are approved, a legal challenge involving the project is cleared, and a Record of Decision draws a favorable conclusion from the environmental evaluation, then a round of early infrastructure projects that would include site preparation work could begin in October, the officials said.

The first phase of the CMRR project, a radiological laboratory/office/utility building, will begin occupancy at the end of this year, with actual radiological operations set to begin in 2013. Its final equipment package is budgeted for about $30 million of the $300 million that the Obama Administration has requested in the FY2012 budget. The remainder will be used to relocate utilities and prepare staging space for equipment and materials, and several other relatively minor projects. "Some of the funds will be used to further design," Fong said. While the amount was officially listed in the 2012 budget request as "To Be Determined," the implication was that would be a significant portion of the remainder. Some $400 million has been spent so far in six years to reach the 45 percent stage of design, according to presentation by Nuclear Watch New Mexico's Scott Kovac. Nuclear Watch New Mexico is one of seven community groups that participate in these meetings along with the NNSA and LANL through a 2005 court settlement. Full construction of the nuclear facility is scheduled to begin in 2013, but Fong said the final baseline estimate for the project would not be determined until 2015, after a final phase security fence completes the perimeter. "At that point it's all in," Fong said. "At that point we'll have our entire TPC [Total Project Cost]."

SEIS Delayed

Meanwhile the schedule for releasing a draft Supplemental Environmental Impact Statement could slip four weeks, said John Tegtmeier, the LASO document manager in charge of the evaluation. "We got that [preliminary] document out today," he said. "We're going through the process of getting comments, walking it through the headquarters folks who have to bless it." The current schedule calls for a draft SEIS to be released for comment

in the last week of March, but Tegtmeier said a notice of availability might not be issued before the end of April for the start of a 45-day public comment period.

—Todd Jacobson and staff reports

OMB EXAMINER NAMED TO NEWLY CREATED DEFENSE PROGRAMS SLOT

In the final piece of the National Nuclear Security Administration's reorganization of its Office of Defense Programs, former White House Office of Management and Budget examiner Phil Calbos has joined the agency as Principal Assistant Deputy Administrator for Defense Programs. In the newly created career civilian position, Calbos will have responsibility for developing and implementing guidance, policies and procedures to ensure that activities and programs are integrated across the weapons complex and in other NNSA programs, and he will be a vital contributor to the formulation of future Defense Programs budgets. Notably, Calbos' move to NNSA reunites him with Principal Deputy Administrator Neile Miller, whom he once worked for at OMB.

Calbos will operate alongside the weapons program's top military official, the principal assistant deputy administrator for military application. That spot is currently filled by Brig. Gen. Sandra Finan, and both Calbos and Finan will report directly to NNSA Defense Programs chief Don Cook. NNSA spokesman Damien LaVera said the creation of the position will "ensure long-term sustainment of weapons activities even in future cases where there is a lack of a political appointee and if the military slot is vacant." Calbos previously served as a program examiner at OMB and when the NNSA was created more than a decade ago, he was the first OMB examiner assigned to the agency. The West Point graduate most recently served as the branch chief for Military Operations, Personnel and Support in OMB's National Security Division.

Reorg Reflects Increased Scrutiny

Perhaps more than at any time during its history, NNSA's weapons program faces tremendous scrutiny over the next decade as it continues to modernize the nation's weapons complex and nuclear arsenal and spends a budget that is expected to grow to nearly $10 billion in Fiscal Year 2021. The agency is expected to spend $85 billion from FY2011 to FY2020 maintaining and modernizing the nation's nuclear deterrent, and last year, Cook reorganized Defense Programs to better reflect the Obama Administration's Nuclear Posture Review. That reorganization included moving the agency's eight site offices back up the chain of command to report directly to Cook as well as the creation of a construction office to increase the focus on several multi-billion-dollar construction projects designed to upgrade the infrastructure of the weapons complex

Cook also created an Office of Stockpile Stewardship and established a Science Council to aid in the revitalization of the science that underpins the nation's nuclear deterrent, and broadened the scope of the Office of Nuclear Safety, Nuclear Operations and Governance Reform to support the increased focus on governance reform at the Department of Energy and the NNSA.

—Todd Jacobson

WITH PU FEEDSTOCK RESERVE READY, NNSA NOT EXPECTING ISSUES WITH MOX

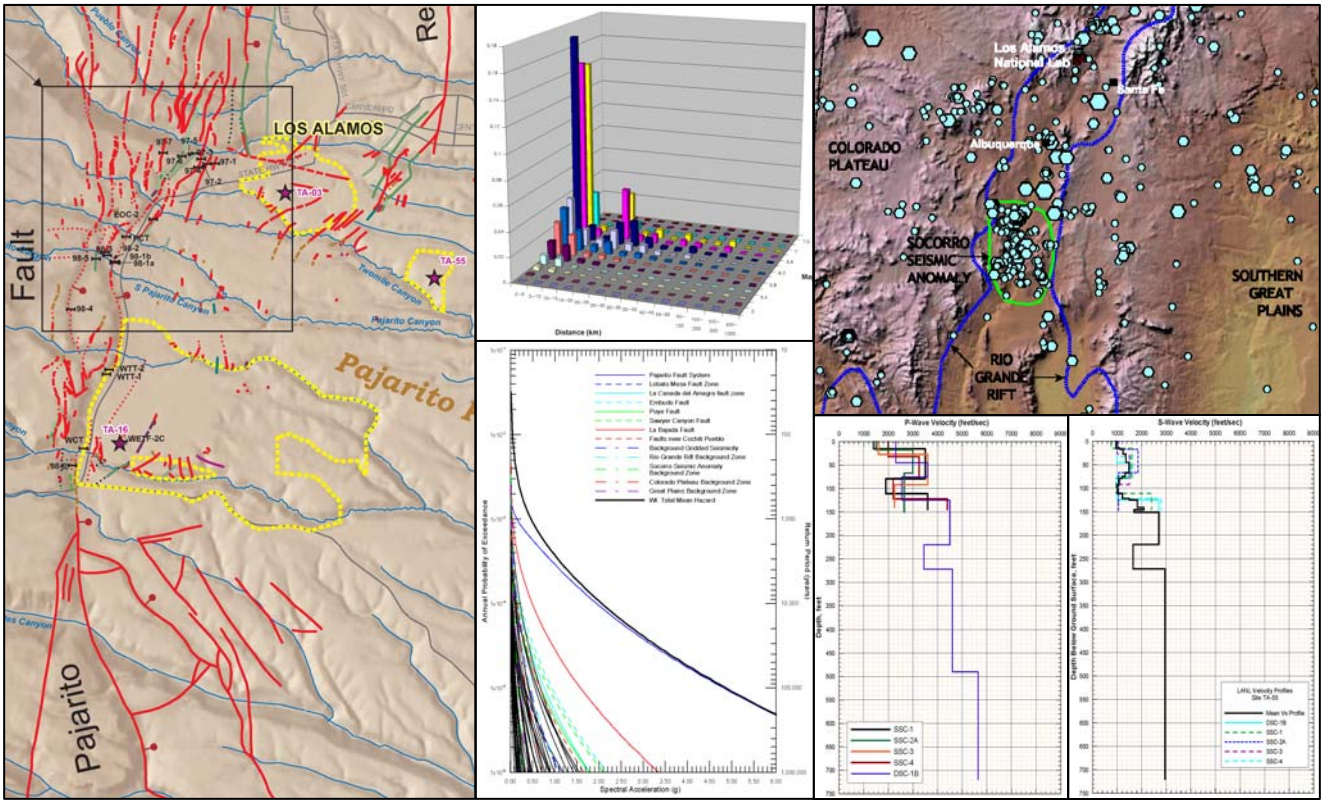
The Pit Disassembly and Conversion Project planned for the Savannah River Site isn't expected to come online until at least five years after the Mixed Oxide Fuel Fabrication Facility starts up in 2016, but the National Nuclear Security Administration expects to have approximately 10 metric tons of plutonium feedstock ready to serve as a bridge until the PDCP is operational. NNSA officials can't say how long that feedstock will last because there are currently no utilities signed up to purchase the MOX fuel and the needs of the utilities will determine the production needs of the MOX facility. But the NNSA has taken steps to develop alternate sources of feedstock and NNSA nonproliferation chief Anne Harrington told a House appropriations panel last week that the agency is confident a shortage of feedstock wouldn't impact the production of the MOX facility. "We can keep the MOX plant running for a number of years while the pit disassembly facility comes online," Harrington said during a House Energy and Water Appropriations Subcommittee hearing last week. "So we're confident that those timelines will fit together very well."

In a parallel program with Russia, the $4.86 billion MOX facility is currently scheduled to convert 34 metric tons of surplus plutonium into commercial nuclear fuel. Construction on the MOX facility began in 2007, but progress to build a facility that will ultimately provide the bulk of the feedstock for the facility has been slow. The NNSA in 2009 ditched plans to build a standalone Pit Disassembly and Conversion facility, deciding instead to combine the pit disassembly and conversion mission with another Department of Energy initiative, the Plutonium Preparation Project, at Savannah River's existing K Area facilities rather than building a new standalone pit disassembly and conversion facility. That decision is expected to save

FINAL REPORT

Tab 31 - Mello Aff #1, par 16, ref 1: http://www.lasg.org/LANL_PSHA_2007.pdf

UPDATE OF THE PROBABILISTIC SEISMIC HAZARD ANALYSIS AND DEVELOPMENT OF SEISMIC DESIGN GROUND MOTIONS AT THE LOS ALAMOS NATIONAL LABORATORY



Prepared for

Los Alamos National Laboratory

25 May 2007

Prepared by

Ivan Wong, Walter Silva, Susan Olig, Mark Dober, Nick Gregor, Jamie Gardner, Claudia Lewis, Fabia Terra, Judith Zachariasen, Kenneth Stokoe, Patricia Thomas, and Shobhna Upadhyaya

As a subcontractor to Burns and Roe Enterprises, Inc.

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Oakland, California 94612

Job No. 24342433

At the request of the Los Alamos National Laboratory (LANL), URS Corporation and Pacific Engineering & Analysis (PE&A), with support from the Earth and Environmental Sciences Division at LANL, have updated the 1995 probabilistic seismic hazard analysis (PSHA) of LANL (Wong *et al.*, 1995), and developed Design/Evaluation Basis Earthquake (DBE) ground motion parameters. Both Uniform Hazard Response Spectra (UHRS) and Design Response Spectra (DRS) have been calculated per ASCE/SEI 43-05 for the site of the Chemistry and Metallurgical Research Replacement (CMRR) building and for Technical Areas TA-3, TA-16, and TA-55. Site-wide and reference rock-outcrop (dacite) ground motions have also been developed and are recommended for use in the design of facilities in other Technical Areas. DRS were computed for Seismic Design Categories (SDC)-3 (2,500-year return period), -4 (2,500 years), and -5 (10,000 years).

The PSHA was conducted following the guidelines of the Senior Seismic Hazard Analysis Committee for a Level 2 PSHA. Principal inputs required for the development of the DBE ground motions include a seismic source model, ground motion attenuation relationships, and velocity and nonlinear dynamic properties of the lower Quaternary (1.2 to 1.6 Ma) Bandelier Tuff beneath each site.

Since 1995, the only new geotechnical, geologic, and geophysical data available to characterize the dynamic properties of the subsurface geology beneath LANL, particularly the Bandelier Tuff, are the results of investigations performed at the CMRR site. Downhole-velocity, OYO-suspension velocity, and seismic crosshole surveys were performed in boreholes drilled in 2005 at that site. The boreholes include four shallow holes at the corners of the proposed CMRR building footprint (SSC-1 to SSC-4), one deep hole in the center of the footprint (DSC-1B), and a deep hole outside and to the east of the footprint (DSC-2A). Dynamic laboratory testing was also performed by the University of Texas at Austin (UTA) on 22 samples collected in the CMRR boreholes. The dynamic properties that were evaluated are the strain-dependent shear modulus (G) and material damping ratio (D) of the samples. Based principally on the new CMRR data and data collected in 1995, base-case profiles of low-strain shear-wave velocity (V_S) and compressional-wave velocity (V_P) were developed for the CMRR, TA-3, TA-16, and TA-55 sites. Of particular significance to the site response analysis was the existence of the geologic unit Qbt3L, a low-velocity zone within the Bandelier Tuff. Unit-specific shear-modulus reduction and damping curves were developed on the basis of the dynamic laboratory testing results, including the 1995 testing. One set of curves for each unit was corrected for sample disturbance by adjusting reference strains by the ratio of laboratory-to-field V_S measurements.

The 50-km-long Pajarito fault system (PFS) extends along the western margin of LANL and is the dominant contributor to the seismic hazard at the laboratory because of its close proximity and rate of activity. The current (or new) characterization of the PFS is significantly revised from the 1995 study in order to incorporate a considerable amount of new mapping, displacement measurements, and paleoseismic data for the PFS. The PFS is a broad zone of faults that form an articulated monoclinal flexure, which consists of several distinct fault segments that have linked together. The PFS exhibits complex rupture patterns and shows evidence for at least two, probably three surface-faulting earthquakes since 11 ka. This recent temporal clustering of events is in contrast to evidence for the occurrence of only six to nine events since 110 ka although this longer record is likely incomplete. For the new analysis, both segmented and unsegmented rupture models were considered for the PFS, favoring the latter

which is characterized by a 36-km-long, floating earthquake rupture source. Two types of multisegment ruptures for the PFS were also considered: simultaneous (a single large earthquake) and synchronous (two subevents). The preferred range of maximum earthquakes is from moment magnitude (**M**) 6.5 to 7.3. Recurrence rates are dependent on rupture model and both long-term slip rate and late Quaternary recurrence interval data were considered. For the preferred unsegmented rupture model, the weighted-mean slip rate was 0.21 mm/yr, and weighted mean recurrence intervals were 4,400 years (for the logic tree branch assuming temporal clustering) and 17,600 years (for the not-in-a-cluster branch). For the segmented rupture model, a moment-balancing approach was used similar to that used by the Working Group on California Earthquake Probabilities (2003) to partition the slip rate of a segment into earthquakes representing various rupture scenarios and to keep the fault in moment equilibrium. Thus, rates vary for each rupture scenario but overall were consistent with the long-term slip rates of the segmented rupture model.

In addition to the dominant PFS, 55 additional fault sources were included in the PSHA. Parameters that were characterized for each fault include: (1) rupture model including independent versus dependent, single plane versus zone, segmented versus unsegmented, and linked configurations; (2) probability of activity; (3) fault geometry including rupture length, rupture width, fault orientation, and sense of slip; (4) maximum magnitude (**M**); and (5) earthquake recurrence, including both recurrence models and rates (using recurrence intervals and/or fault slip rates). There are sparse data on rates of activity for many faults so the approach developed by McCalpin (1995) was applied to characterize fault slip rate distributions. McCalpin's analysis was updated, adding 15 slip rate observations from six additional faults.

In addition to active faults, three areal earthquake source zones were defined based on seismotectonic provinces in the LANL region: the Rio Grande rift, Southern Great Plains, and Colorado Plateau. Due to its high level of seismicity, the Socorro Seismic Anomaly was also modeled as an areal source zone and differentiated from the Rio Grande rift. Earthquake recurrence rates computed for each areal source zone are based on an updated (through 2005) historical seismicity catalog. In addition to the traditional approach of using areal source zones, Gaussian smoothing with a spatial window of 15 km was used to address the hazard from background seismicity and to incorporate a degree of stationarity. The two approaches, areal sources and Gaussian smoothing were weighted equally to compute the hazard from background seismicity in the PSHA.

A combination of both empirical and site-specific attenuation relationships were used in the PSHA. The empirical models were weighted as follows: Abrahamson and Silva (1997), modified for normal faulting, 0.45; Spudich *et al.* (1999), 0.35; Campbell and Bozorgnia (2003), 0.10; Sadigh *et al.* (1997), 0.05; and Boore *et al.* (1997), 0.05. The relationships were weighted based on their appropriateness for the extensional Rio Grande rift. Because the epistemic variability was deemed insufficient as provided by the five attenuation relationships, they were all scaled to obtain a total sigma (ln) of 0.4.

To compensate for the lack of region-specific attenuation relationships, the stochastic ground motion modeling approach was used, as it was in 1995, to develop site-specific relationships for LANL. The point-source version of the stochastic methodology was used to model earthquakes from **M** 4.5 to 8.5 in the distance range of 1 to 400 km. To accommodate finite-source effects at large magnitudes (**M** > 6.5), model simulations included an empirical magnitude-dependent

short-period saturation as well as a magnitude-dependent far-field fall off. Relationships were developed for the CMRR, TA-3, TA-16, and TA-55 sites. A relationship for dacite was also developed. Aleatory variabilities in stress drop, magnitude-dependent point-source depths, the crustal attenuation parameters Q_o and η, and kappa were included in the computations of the attenuation relationships through parametric variations. Site-specific profiles (low-strain V_S, and V_P down to dacite) as well as modulus-reduction and hysteretic-damping curves were also randomly varied.

Variability (aleatory) in the regression of the simulated data is added to the modeling variability to produce 16th, 50th (median), and 84th percentile attenuation relationships. Thirty simulations were made for each magnitude and distance, and the results fitted with a functional form that accommodates magnitude-dependent saturation as well as far-field fall-off. Twelve attenuation relationships developed for the CMRR site were derived from three stress drops, two velocity models, and two sets of dynamic material properties. For the TA-3, TA-16, and TA-55 sites there were nine attenuation relationships derived from three stress drops, one velocity profile, and three sets of dynamic curves. There were six attenuation relationships for dacite derived from one profile, two sets of dynamic curves, and three stress drops.

In the 1995 study, attention was focused on potential topographic effects on ground motions due to the location of LANL facilities on mesas. In this study, a suite of topographic amplification factors was developed for LANL on the basis of (1) recent LANL modeling results, (2) other modeling results and observations in the literature, and (3) recommendations of Eurocode 8. The amplification factors are based on slope angles following Eurocode 8 as well as the French Seismic Code. To accommodate a fully probabilistic hazard analysis, both median estimates and standard deviations were developed, based on ranges of factors in modeling results and observations.

Probabilistic seismic hazard was calculated for the ground surface at CMRR, TA-3, TA-16, TA-55 and the top of dacite at TA-55. The hazard from the site-specific stochastic and empirical western U.S. soil attenuation relationships was calculated separately for each type of relationship. The modeling shows that the probabilistic hazard for peak horizontal ground acceleration (PGA) at all the above sites is controlled primarily by the PFS at all return periods. The PFS similarly controls the hazard at LANL for longer-period ground motions, such as 1.0 sec spectral acceleration (SA). Background seismicity in the Rio Grande rift, which contributed to the hazard at LANL in the 1995 study, is not a significant contributor in this new analysis, probably due to the increased activity rate of the PFS in the Holocene (clustering).

In calculating the probabilistic ground motions at LANL, the surface motions must be hazard consistent; that is, the annual exceedance probability of the soil UHRS should be the same as the rock UHRS. In NUREG/CR-6728, several site response approaches are recommended for use to produce soil motions consistent with the rock outcrop hazard. These approaches also incorporate site-specific aleatory variabilities of soil properties into the soil motions. To compute the site-specific ground-shaking hazard at LANL, we used two different approaches: (1) empirical attenuation relationships for the western U.S. (WUS) generic deep firm soil and (2) site-specific attenuation relationships. In the case of the latter, the site response is contained in the stochastic attenuation relationships (Approach 4). For the empirical attenuation relationships, the

computed generic soil hazard curves from the PSHA were adjusted for the site-specific site conditions at each of the LANL sites using computed amplification factors (Approach 3).

The point-source version of the stochastic ground motion model was used to generate the amplification factors (the ratios of the response spectra at the top of the site profiles to the WUS soil). They are a function of the reference (WUS deep firm soil) peak acceleration, spectral frequency, and nonlinear soil response. Amplification factors were computed for CMRR (4 sets), TA-3 (3 sets), TA-16 (3 sets), and TA-55 (3 sets), based on the velocity profiles and properties, but only one set was computed for the top of dacite. The point-source stochastic model was also used to compute site-specific vertical-to-horizontal (V/H) ratios. To accommodate model epistemic variability following the approach used for the horizontal hazard analyses, empirical deep firm soil V/H ratios were also used with equal weights between the stochastic and empirical models.

The hazard curves derived from the empirical attenuation relationships and the amplification factors were used to calculate site-specific hazard curves using Approach 3. These hazard curves and the hazard curves based on site-specific stochastic attenuation relationships (Approach 4) were then weighted equally and the topographic amplification factors and V/H ratios were applied. In seismic hazard analyses, epistemic uncertainty (due to lack of knowledge) of parameters and models is typically represented by a set of weighted hazard curves. Using these sets of curves as discrete probability distributions, they can be sorted by the frequency of exceedance at each ground-motion level and summed into a cumulative probability mass function. The weighted-mean hazard curve is the weighted average of the exceedance frequency values.

Based on the final site-specific hazard curves, mean horizontal UHRS were computed for CMRR, TA-3, TA-16, and TA-55. The TA-55 UHRS is based on an envelope of the hazard curves of CMRR and the hazard curve developed on basis of the 1995 borehole velocity profiles (SHB-1). Dacite and site-wide mean horizontal UHRS were also computed. The site-wide UHRS is derived from an envelope of the hazard curves of CMRR, TA-3, TA-16, and TA-55. Table ES-1 lists the horizontal and vertical PGA values for the UHRS.

The new PSHA shows that the horizontal surface PGA values are about 0.5 g at a return period of 2,500 years. The vertical PGA values at the same return period are about 0.3 g. The 1995 horizontal PGA values for a return period of 2,500 years are about 0.33 g. The estimated hazard has increased significantly (including other spectral values) from the 1995 study due to the increased ground motions from the site-specific stochastic attenuation relationships and increase in the activity rate of the PFS. The site response effects as modeled in this study with the newer site geotechnical data appears to amplify ground motions more than in the 1995 analysis. Other factors could be the increased epistemic uncertainty incorporated into the empirical attenuation relationships and in the characterization of the PFS.

Horizontal and vertical DRS for CMRR, TA-3, TA-16, TA-55, dacite, and site-wide were calculated for SDC-3, -4, and -5. Table ES-2 lists the horizontal and vertical PGA values for the DRS. DRS at other dampings levels of 0.5%, 1%, 2%, 3%, 7%, and 10% were computed from the 5%-damped DRS using empirical damping ratios.

Strain-compatible properties including V_S, V_S sigma, S-wave damping, S-wave damping sigma, V_P, V_P sigma, P-wave damping, and strains as a function of depth were calculated for return periods of 2,500 and 10,000 years. The strain-compatible properties are consistent with the mean hazard.

Time histories were developed through spectral matching following the recommended guidelines contained in NUREG/CR-6728. The phase spectra were taken from accelerograms of the 23 November 1980 (1934 GMT) **M** 6.9 Irpinia, Italy, earthquake recorded at the Sturno strong motion site.

Table ES-1
LANL Mean PGA Values (g) From the UHRS

Return Period (years)	CMRR		TA-3		TA-16		TA-55		Site-Wide		Dacite	
	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.
1,000	0.27	0.32	0.27	0.32	0.25	0.31	0.27	0.32	0.27	0.32	0.13	0.12
2,500	0.52	0.60	0.52	0.59	0.47	0.57	0.52	0.60	0.52	0.60	0.27	0.27
10,000	1.03	1.21	1.03	1.10	0.93	1.05	1.03	1.21	1.03	1.21	0.65	0.65
25,000	1.47	1.79	1.45	1.57	1.33	1.50	1.47	1.79	1.47	1.79	1.01	0.97
100,000	2.30	3.01	2.29	2.79	2.11	2.57	2.30	3.01	2.30	3.01	1.69	1.65

Table ES-2
LANL PGA Values (g) From the DRS

SDC	CMRR		TA-3		TA-16		TA-55		Site-Wide		Dacite	
	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.	Horiz.	Vert.
3	0.47	0.56	0.47	0.53	0.43	0.50	0.47	0.60	0.47	0.56	0.28	0.27
4	0.72	0.87	0.71	0.78	0.65	0.74	0.72	0.86	0.72	0.86	0.47	0.45
5	1.17	1.50	1.17	1.39	1.07	1.29	1.17	1.50	1.17	1.50	0.84	0.82

SDC = Seismic Design Category

A.J. Eggenberger, Chairman
John E. Mansfield, Vice Chairman
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Tab 32

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700 Washington, D.C. 20004-2901
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Mello Aff #1, par 17: http://www.dnfsb.gov/pub_docs/staff_issue_reports/lanl/sir_20080530_la.pdf

May 30, 2008

The Honorable Thomas P. D'Agostino
Administrator
National Nuclear Security Administration
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0701

Dear Mr. D'Agostino:

The Defense Nuclear Facilities Safety Board (Board) understands the vital role that the National Nuclear Security Administration (NNSA) has envisioned for the Plutonium Facility and the Chemistry and Metallurgy Research Replacement (CMRR) facility at Los Alamos National Laboratory. These facilities will likely provide much of the nation's enduring capacity for research, development, and manufacturing involving plutonium and other actinide materials. As a result, two of the Board's priorities are to ensure the development of a high-quality safety basis for the Plutonium Facility and a safe design for the CMRR. The Board's staff recently reviewed both of these efforts. The staff's observations are detailed in the attached reports, which include areas that could benefit from additional examination

The Board was encouraged that NNSA's review of the September 2007 Documented Safety Analysis for the Plutonium Facility largely identified the core deficiencies of the submission, and charted a course for an improved safety basis in the near term that explicitly identified necessary improvements for the future. In the first report, the Board's staff noted several issues and weaknesses that were not fully captured by NNSA's comments and warrant attention. These weaknesses dealt with hazards analysis, controls, software quality assurance, leak path factor calculations, and the criticality safety program. The Board reminds NNSA that the Plutonium Facility continues to operate using a safety basis that was approved more than a decade ago.

The CMRR project is discussed in the second attached report. The Board is encouraged that NNSA plans to complete a technical Independent Project Review before proceeding to the final design stage. This review should provide additional confidence in the nuclear safety strategy employed and the design adequacy of safety-related systems. The Los Alamos Site Office's review of the draft Preliminary Documented Safety Analysis is also important, particularly in addressing significant previously identified shortcomings.

plenums (gloveboxes and laboratory/room areas, respectively), along with three 50 percent capacity sets of fans that are powered from three different electrical buses. Each electrical bus is connected to the two offsite power sources and the two onsite emergency diesel generators. Zone 1 and 2 portions of the ventilation system and their support systems are designed to be operational after a PC-3 seismic event.

Project-specific analyses indicate that operation of one exhaust fan for Zone 1, one exhaust fan for Zone 2, and one supply fan for Zone 2 would be adequate to maintain a cascading flow and negative pressure with respect to the atmosphere during a fire event (with one door left open for emergency response activities). To protect the HEPA filters during a fire, the current design includes a deluge system and demisters, as well as a temperature sensor in the ductwork prior to the deluge spray that would shut down active ventilation on activation. The Board's staff expressed concern about the shutdown of active ventilation during a fire as a result of this temperature sensor. The staff will review the control logic and conditions under which the active confinement ventilation system would maintain negative pressure during a fire.

Preliminary Structural Design. The Board's staff received an overview of the current structural layout of CMRR. NNSA has mandated that the laboratories of the nuclear facility have a flexible, open floor plan to accommodate as-yet unknown future missions. This "hotel concept" prevents the addition of shear walls through the laboratory wings and has resulted in major seismic design challenges. Project personnel had been using a preliminary estimate of seismic motions for the facility until Los Alamos National Laboratory (LANL) completed its update of the probabilistic seismic hazards analysis; however, they did not anticipate that the final seismic motions, particularly vertical motions, would be in resonance with various sections of the nuclear facility. The laboratory portion of the nuclear facility has been most problematic, with the fundamental frequency for the floor and ceiling matching that of the input seismic motions.

The "hotel concept" has generated seismic amplifications in the CMRR facility; it is not clear whether the facility and equipment can be designed to accommodate such demands. To reduce the vertical seismic amplifications in the CMRR structure, the facility design was altered to thicken the basemat and slabs of structure. Few walls have been added in an effort to avoid disrupting the "hotel concept" or the systems layout. This change (stiffening of the structure) responds to recommendations of LANL's structural/seismic parametric studies.

Additionally, the project currently lacks a Structural Acceptance Criteria document to guide in the design of the facility; the Board's staff believes such a document is important for a successful design and encouraged the design team to develop one. As discussed above, project personnel noted that Sargent & Lundy are in the process of preparing a document on the structural analysis approach that may address some of the issues raised by the Board's staff. The staff does not yet have a clear understanding of the structural behavior of the nuclear facility and plans to perform a detailed review of this matter in the near future.

Report of the Nuclear Weapons Complex Infrastructure Task Force

Tab 33

Mello Aff #1, par 13, ref 1: http://www.cdi.org/PDFs/Report%20of%20the%20Nuclear%20Weapons%20Complex%20Infrastructure%20Task%20Force.pdf

Recommendations for the Nuclear Weapons Complex of the Future

July 13, 2005
Draft Final Report

Secretary of Energy Advisory Board
U.S. Department of Energy

Current designs envision above-ground structures. However, the Task Force notes that underground facilities will prevent an adversarial force from surveying the site or from targeting particular CNPC facilities with weapons of choice. Going underground will simplify and greatly reduce operating costs for security. Site selection alternatives should consider the total life-cycle cost of the facility, including the security and capital costs.

We recognize that the design-basis threat (DBT) will evolve over time as the character, methods, and actions of potential terrorist threats continue to evolve. Therefore, it is imperative that the site incorporates an inherent flexibility to meet future security requirements, preferably through technological innovation. Clear buffer zones and underground facilities would provide high degrees of flexibility for the future. Further discussion of the DBT is found in Appendix G.

A classified Supplement[2] analyzes the issue of timing for the CNPC for a stockpile of 2200 active and 1000 reserve and the expected pit manufacturing capacity of the future Complex. The conclusion is that if the NNSA is required to: 1) protect a pit lifetime of 45 years, 2) support the above stockpile numbers, and 3) demonstrate production rates of 125 production pits to the stockpile per year, the CNPC must be functional by 2014. If one accepts the uncertainty of pit lifetime of 60 years, the CNPC can be delayed to 2034. In either case TA-55 is assumed to be producing 50 production pits to the stockpile per year.

4.2 Industrial Benchmarks

We considered production perspectives that a commercial company, with experience in comparable materials, might have on the Complex pit production operations and facilities.

Since there is no commercial experience with plutonium outside the Complex, the Task Force had a study group look at pit production and future facility needs from a beryllium manufacturing perspective. Beryllium components are used in some current primary designs and have very similar machining requirements and tolerances to the plutonium pits. A number of the casting techniques are different, but not sufficiently different that the physical nature of the facility is altered. Rather, the hazardous nature of beryllium and plutonium make handling specifications and restrictions similar.

The Task Force feels that the Complex would benefit greatly from a greater reliance on advanced manufacturing tools, methodology, and experienced personnel drawn from the commercial state of the art manufacturing industry rather than a modernization of approaches developed 40 years ago within the Complex. The inclusion of such outside experts would likely have a great impact on cost of the CNPC and productivity of the future production complex. More detailed perspectives are included in Appendix H, including consideration of another commercial industry that also has developed highly efficient, secretive production approaches that may be relevant to the production complex of the future.

[2] *Classified Supplement to the NWCITF Report Recommendations for the Nuclear Weapons Complex of the Future*

Options for the MPF

Several ideas that should be considered before they are discarded, since the savings are large for each option, and several of the options could result in additive savings:

- Reduce the structure costs to meet the DBT by using (buying) more land, obtaining advantage of earlier detection and thereby denying approach.
- Consider placing the process building underground.
- Consider placing of the process building inside of a mountain.
- Review the DOE DBT and see if there are other technologies that can be deployed to reduce the cost of the building and still achieve the DBT requirements, but at lower capital and operating cost.
- The size of the MPF is scaled by the production rate of 125 per year. If that number could be reduced by ½ the footprint of the production building should scale, but not quite linearly.
- Reduce the types of pits to be produced. Designing for pits of the future rather than the unique and hard to make pits of the Cold war stockpile would save a lot of money.

It is the Study Group's opinion that the last bullet may have the greatest impact on capital cost reduction, from a technical perspective.

The DBT, which is not a technical requirement, also drives the cost. The Study Group believes that constructing underground, in a mine, or an equivalent, could be the cheapest method to address the DBT is burial. Traditional mining companies can profitably mine underground ore valued at $200/cubic yard. Thus, ~ $50 M should provide a substantially subsurface cavity to house a "thin walled" pit manufacturing facility or any other equivalent type work space.

SRS has utilized good engineering practices and teamwork in the MPF project to date. SRS developed a scope of work, a "model", and established a design criteria and production output level. SRS has designed the MPF given the current set of regulations, guidelines, DBT, safety considerations at today's standards. If these standards or other factors change, it will only make this facility more difficult to build and more costly, if it is done in the traditional DOE manner. It should also be recognized that construction raw material costs are escalating higher on a daily basis. This will also drive project costs higher. Consideration should be given to spend more time and effort on the "Design" phase to reduce contingency and uncertainty in the cost estimate.

TA-55 Operations Commentary

TA-55 is a remarkable facility. The attention to detail at every level of manufacture is to be commended. It is obvious that **processes have been laboriously developed** to provide a quality product safely. However, the manufacturing priorities appear to be: (1) Safety, (2) Security, (3) Quality. **The one missing element is: Productivity**.

extension efforts. These requirements are further promulgated to the national security enterprise through individual weapon Program Control Documents (PCDs) and the Master Nuclear Schedule (MNS).

Weapon Systems Cost Data
A classified annex, which contains the Selected Acquisition Report (SAR) for the W76-1 LEP, supplements the Weapons Activities portion of the budget.

Major FY 2008 Achievements

Life Extension Programs
- Delivered B61-7/11 LEP units to the Air Force on time having completed 100% of planned retrofits for FY 2008 at Pantex and 100% of production activity at Y-12 for the program;
- Completed W76-1 SS-21 Authorization for D&I;
- Completed down-selection of W76-1 Canned Sub-Assembly (CSA) – with decision to proceed with original design;
- Completed W76-1 Draft Final Weapons Development Report for delivery to the DoD DRAAG
- Completed W76-1 CSA First Production Unit (FPU);
- Completed W76-1 Major Assembly Release;
- Completed W76-1 LANL Certification Letter;
- Achieved W76-1/Mk4A Reentry Body Assembly FPU, and
- Received W76-1 unconditional Phase 6.5 Authorization.

Reliable Replacement Warhead
- Completed close-out activities as directed by the FY 2008 Consolidated Appropriations Act (P.L. 110-161).

Stockpile Systems
- Within all Systems (B61, W62, W76, W78, W80, B83, W87, W88):
  - Delivered all scheduled Limited Life Components (LLC) (PCD requirements and quantities) and alteration kits to the DoD;
  - Produced 933 reservoirs at Kansas City Plant (KCP);
  - Filled 825 reservoirs at Savannah River Site (SRS);
  - Produced 356 Neutron generators at Sandia National Laboratories (SNL);
  - Shipped 1524 Group Ten kits to DoD used in field maintenance;
  - Shipped 793 Alt 900 kits for reservoir removal;
  - Completed all Annual Assessment Reports, and
  - Completed all requirements for certification of the stockpile without nuclear testing.
- Exceeded B61-3/4 Alt 356 production quantities of new spin rocket motors by 12% and completed 100% of planned spin rocket motor retrofits for B61-7/11 ALT 358;
- Completed W76-0 1E33 Detonator Cable Assembly (DCA) life of program production and shipments;
- Completed W78 MC4381 Neutron Generator (NG) FPU;
- Completed W87 JTA4 FPU and delivered to the Air Force;
- Completed Nuclear Explosive Safety Study and Reauthorization of W88 SS-21 Bay operations;
- Completed rebuilds of W88 Cell Operations Restart Project units;
- Completed W88 JTA2 telemetry refresh FPU, and
- Achieved approval of W88 SS-21 Cell Hazard Analysis Report.

Tab 35

Mello Aff #1, par 19, ref 3: http://www.cfo.doe.gov/budget/11budget/Content/Volume%201.pdf

	FY 2011 vs. FY 2010 ($000)
▪ **Plutonium Sustainment** The increase restores the capability to build up to 10 pits per year in the Plutonium Facility-4 (PF-4) at LANL. The increase will permit the completion of W88 pit production requirement, enable a power source production mission and position PF-4 to meet any future Life Extension Program requirements. The change will also enhance the flexibility of the PF-4 operating space to make maximize use of the existing footprint.	**+48,409**
Total, Stockpile Services	**+112,762**
Total Funding Change, Directed Stockpile Work	**+392,520**

Lifetime Extension Program (LEP)
Executive Summary

Tab 36 - Mello Aff#1, Par 19, Ref 2: http://www.fas.org/irp/agency/dod/jason/lep.pdf

JSR-09-334E

September 9, 2009

The MITRE Corporation
JASON Program Office
7515 Colshire Drive
McLean, Virginia 22102
(703) 983-6997

1 Executive Summary

1.1 Study charge

This study of the Life Extension Program (LEP) for deployed U.S. nuclear weapons responds to the following charge.

> "NNSA requests that JASON study LEP strategies for maintaining the U.S. nuclear deterrent in the absence of underground nuclear testing. This should include:
>
> - Study the certification challenges associated with changes, to include accumulation of changes, made to a warhead[1] during its life.
> - Compare the assessment and certification challenges of different LEP strategies ranging from refurbishment to replacement.
> - Study proposed methods to measure the evolution of risk due to multiple changes during warhead life and initiated in LEPs.
> - Study how NNSA can mitigate risks while maintaining a safe, secure and reliable nuclear deterrent. Comment on how the overall balance and structure of science, technology, engineering and production activities can be made to minimize future risk to the stockpile.
> - Study the accumulated risks and uncertainties of the current Life Extension Program strategy. As already identified by a previous JASON study, risk areas include:
>   - Linkage to UGT data,
>   - Manufacturing changes that may unavoidably result in differences from the as-tested devices,
>   - Increased surety[2] features, and
>   - Thresholds to failure."

NNSA provided the following definitions:

> "**Refurbishment** (current implementation of LEP) - Very generally, individual warhead components are replaced before they degrade with components of (nearly) identical design or that meet the same "form, fit, and function."
>
> **Warhead Component Reuse -** Refers specifically to the use of existing surplus pit and secondary components from other warhead types. Approach may permit limited warhead surety improvements and some increased margins.

[1] In this study "warhead" refers to the nuclear explosive package and associated non-nuclear components.
[2] Surety encompasses safety, security and use control.

Warhead Replacement - Some or all of the components of a warhead are replaced with modern design that are more easily manufacturable, provide increased warhead margins, forego no longer available or hazardous materials, improve safety, security and use control, and offer the potential for further overall stockpile reductions."

1.2 Findings

JASON was asked to assess the impacts of changes to stockpile warheads incurred from aging and LEPs. In response:

- **JASON finds no evidence that accumulation of changes incurred from aging and LEPs have increased risk to certification of today's deployed nuclear warheads**

  This finding is a direct consequence of the excellent work of the people in the US nuclear weapons complex supported and informed by the tools and methods developed through the Stockpile Stewardship program. Some aging issues have already been resolved. The others that have been identified can be resolved through LEP approaches similar to those employed to date. To maintain certification, military requirements for some stockpile warheads have been modified. The modifications are the result of improved understanding of original weapon performance, not because of aging or other changes. If desired, all but one of the original major performance requirements could also be met through LEP approaches similar to those employed to date.

- **Lifetimes of today's nuclear warheads could be extended for decades, with no anticipated loss in confidence, by using approaches similar to those employed in LEPs to date .**

  The report discusses details and challenges for each stockpile system.

For each warhead, decisions must be made about including additional surety features. Findings regarding surety features are

- **Further scientific research and engineering development is required for some proposed surety systems.**

- **Implementation of intrinsic[3] surety features in today's re-entry systems, using the technologies proposed to date, would require reuse or replacement LEP options.**

- **All proposed surety features for today's air-carried systems could be implemented through reuse LEP options.**

[3] i.e. inside the nuclear explosive package.

- **Implementation of intrinsic surety features across the entire stockpile would require more than a decade to complete.**

Concerning methods for assessing evolution of risk and assessing the effects of multiple changes to a weapon, we find that

- **The basis for assessment and certification is linkage to underground test data, scientific understanding, and results from experiment.**

- **Quantification of Margins and Uncertainties (QMU) provides a suitable framework for assessment and certification.**

- **Increased scientific understanding enables reduced reliance on calibration, enhanced predictive capability, and improved quantification of margins and uncertainties.**

Regarding certification challenges for LEP strategies ranging from refurbishment to replacement, we find that

- **Assessment and certification challenges depend on design details and associated margins and uncertainties, not simply on whether the LEP is primarily based on refurbishment, reuse, or replacement.**

Concerning the overall balance and structure of science, technology, engineering and production activities, and how to mitigate risk to the stockpile, we find that

- **Certification of certain reuse or replacement options would require improved understanding of boost.**

- **Continued success of stockpile stewardship is threatened by lack of program stability, placing any LEP strategy at risk.**

Surveillance of stockpile weapons is essential to stockpile stewardship. Inadequate surveillance would place the stockpile at risk. We find that

- **The surveillance program is becoming inadequate. Continued success of stockpile stewardship requires implementation of a revised surveillance program.**

We conclude this section with a concern. All options for extending the life of the nuclear weapons stockpile rely on the continuing maintenance and renewal of expertise and capabilities in science, technology, engineering, and production unique to the nuclear weapons program. This will be the case regardless of whether future LEPs utilize refurbishment, reuse or replacement. The study team is concerned that this expertise is

threatened by lack of program stability, perceived lack of mission importance, and degradation of the work environment.

1.3 Recommendations

Our recommendations are as follows:

- **Determine the full potential of refurbishment, as exemplified by LEPs executed to date, for maintaining or improving the legacy stockpile.**

- **Quantify potential benefits and challenges of LEP strategies that may require reuse and replacement, to prepare for the possibility of future requirements such as reduced yield or enhanced surety.**

- **Strengthen and focus science programs to anticipate and meet potential challenges of future LEP options, including challenges associated with boost and surety science.**

- **Revise the surveillance program so that it meets immediate and future needs.**

- **Assess the benefits of surety technologies in the context of the nuclear weapons enterprise as a system, including technologies that can be employed in the near term.**

Department of Energy
National Nuclear Security Administration
Washington, DC 20585

Tab 37

November 28, 2006

OFFICE OF THE ADMINISTRATOR

The Honorable John Warner
Chairman
Committee on Armed Services
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 directed the Administrator of the National Nuclear Security Administration (NNSA) to enter into a contract with a Federally Funded Research and Development Center (FFRDC) providing for a study to assess the efforts of the NNSA to understand the aging of plutonium in nuclear weapons. The enclosed report by the independent JASON group reviewing the studies conducted by the Los Alamos and Lawrence Livermore National Laboratories meets this requirement. The JASON review provided an independent evaluation of the scientific credibility of the laboratory studies. The weapon lifetimes are determined by the laboratories.

The studies conducted by the laboratories included an extensive experimental and computational investigation of the mechanical, physical, and chemical property changes caused by plutonium aging as well as a re-analysis of the underground nuclear test record. The results of these studies were incorporated into system-specific performance models that evaluated the effect of these property changes on primary performance, using the Quantification of Margins and Uncertainties methodology. The conclusion of the JASON report is that most plutonium pit types have credible lifetimes of at least 100 years. Other pit types have mitigation strategies either proposed or being implemented. Overall, the studies showed that the majority of plutonium pits for most nuclear weapons types have minimum lifetimes of at least 85 years.

Based on our current analysis and knowledge, changes due solely to plutonium aging do not prevent significantly longer pit lifetimes for warheads with sufficient margins. Mitigation strategies to address systems with tight performance margins are being proposed that do not require replacing current pits or nuclear testing. We can, therefore, conclude that pit lifetimes do not at present determine warhead lifetimes.

It is imperative that we continue to assess plutonium aging through vigilant surveillance and scientific evaluation, since the plutonium-aging database only extends to approximately 48 years for naturally aged material and 60 years for the accelerated aged material. The primary performance database from underground testing is even more limited. The laboratories will annually re-assess the primary performance lifetimes that

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result from plutonium aging by incorporating new data, understanding, and predictive capabilities as they become available. This is now part of the annual assessment process for each weapon system, which uses all of the stockpile stewardship tools, including aging assessments, to determine the condition of the stockpile.

The unclassified edition of the report from JASON is submitted with this letter. The complete reports from both laboratories and JASON are classified and are submitted separately.

If you have any questions, please contact me or C. Anson Franklin, Director, Office of Congressional, Intergovernmental and Public Affairs at (202) 586-8343.

Sincerely,

Linton F. Brooks
Administrator

Enclosure

cc:
The Honorable Carl Levin
Ranking Minority Member

Pit Lifetime

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JSR-06-335

November 20, 2006

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Contents

1 EXECUTIVE SUMMARY

JASON reviewed the nearly-completed assessment of primary-stage "pit" lifetimes due to plutonium aging for nuclear weapon systems in the enduring U.S. stockpile. The assessment is being prepared by Los Alamos and Lawrence Livermore National Laboratories in support of NNSA's "Level-1"" milestone to understand possible aging effects in the primary stages of nuclear weapons in the current stockpile and to provide system-specific lifetimes for pits. The joint Laboratory assessment uses the methodology of Quantification of Margins and Uncertainties (QMU) and specifically considers the physical aging effects of plutonium.

We judge that the Los Alamos/Livermore assessment provides a scientifically valid framework for evaluating pit lifetimes. The assessment demonstrates that there is no degradation in performance of primaries of stockpile systems due to plutonium aging that would be cause for near-term concern regarding their safety and reliability. Most primary types have credible minimum lifetimes in excess of 100 years as regards aging of plutonium; those with assessed minimum lifetimes of 100 years or less have clear mitigation paths that are proposed and/or being implemented.

The Laboratories have made significant progress over the past 3-5 years in understanding plutonium aging and pit lifetimes. Their work is based on analyses of archival underground nuclear-explosion testing (UGT) data, laboratory experiments, and computer simulations. As a result of the Los Alamos/Livermore efforts, JASON concludes that there is no evidence from the UGT analyses for plutonium aging mechanisms affecting primary performance on timescales of a century or less in ways that would be detrimental to the enduring stockpile. The detailed experiments and computer simulations performed by the Laboratories to better understand plutonium aging mechanisms and their possible impact on performance of weapons primaries

also reduce uncertainties in the expected performance of zero-age pits. The plutonium aging studies are therefore valuable to the overall Stockpile Stewardship program.

JASON identified additional work that should be carried out over the next year or longer to gain a better understanding of relevant plutonium properties and aging phenomena that could affect weapons performance on timescales of a century and beyond.

A more detailed version of this Executive Summary appears in the full (classified) JASON Report.

2 INTRODUCTION

Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) have been tasked by the National Nuclear Security Administration (NNSA) to "provide estimates for predominant pit types" in a Level 1 Milestone Report by September 30, 2006. Results of this assessment by the two nuclear weapons design laboratories could have significant implications for the scope and timing of proposals to restore U.S. capability to manufacture replacement pits. It is therefore important to provide scientifically credible information about pit lifetimes to the decision makers at NNSA. JASON was asked to conduct a comprehensive review of the pit assessment programs of the Laboratories as they approach this Milestone.

Previously, JASON conducted preliminary studies of specific elements of the work of the Laboratories on pit aging. Our studies began with briefings on pit lifetimes presented to JASON by LANL and LLNL in July 2004, briefings in January 2005, a review of the use of underground test (UGT) data in pit lifetime estimates in January 2006, and a followup meeting on the statistical analysis used in April 2006. The findings and recommendations of these earlier phases of the study have been published in classified JASON reports. The final phase of the review was based on briefings that took place in June 2006, two months before the deadline for the Milestone Report. The Laboratory scientists described to JASON their procedures and the majority of their pit lifetime estimates for specific weapons systems.

The purpose of the overall study is to determine whether the research done by the laboratories is adequate to support a reliable pit lifetime assessment for specific systems. Three kinds of research have contributed to the programs of the two Laboratories. The first consists of analysis of results of past underground tests (UGTs) with pits of various ages. Second are studies of the component materials, including experimental and theoretical investigations of the metallurgical properties of Pu containing various combinations of impurities. The experiments involve small-scale (e.g., static compression),

medium-scale (e.g., gas-gun dynamic compression), and larger-scale (e.g., hydrotest and sub-critical) experiments. Third are computer simulations of primary performance with model Pu properties varying with age.

JASON was asked by NNSA to consider the following questions:

1. Have the Laboratories identified relevant properties of plutonium, which when varied have significant impact on primary performance? Is this program of research adequate to quantify, bound or, where possible, reduce associated uncertainties? Have appropriate priorities been established?

2. Will the current program of research serve to assess the impact of aging on the properties of plutonium in a reasonably complete and technically sound manner? Will the proposed experiments have the accuracy required to reduce or bound uncertainties? Is the balance amongst activities and program prioritization appropriate?

3. Is the accelerated aging program appropriate and technically sound? Will the planned activities confirm that the accelerated aging samples adequately replicate the properties of naturally aged plutonium and provide a credible extrapolation beyond the age of existing stockpile materials?

4. Are the Laboratories pursuing a program of research for model development and simulation of fundamental plutonium properties and their change with age that will provide useful information in the required time frame?

5. Have the Laboratories provided a scientifically valid and defensible pit lifetime for each of the systems analyzed?

6. Are there areas of uncertainty identified where additional work should be focused?

Questions (1)–(4) were answered in our two previous reports: generally in the affirmative, albeit with a number of recommendations for changing details of the program (to which the Laboratories have been responsive). This report is therefore mainly concerned with questions (5) and (6). Our answers to both of these questions are summarized in the Executive Summary and explained in detail in the body of the report.

3 UNDERGROUND TEST DATA

To adduce evidence for aging, the Laboratories have carried out a detailed examination of the legacy underground test (UGT) data. Though the data are remarkably precise (some critical parameters measured to 1-3%), measurement accuracies were not uniform in time, and accurate errors needed to be established. We conclude that the Laboratories have extracted all possible information regarding pit aging from the UGT data given the uncertainties associated with those data.

4 PLUTONIUM PROPERTIES

Plutonium is a remarkable material. In an electronic sense Pu exists on the knife-edge between localized and delocalized behavior, and these electronic characteristics in part give rise to extensive polymorphism as a function of temperature, pressure, and composition. The δ-phase of Pu stabilized with Ga in the face-centered cubic structure is used in most pits. Pu undergoes radioactive decay and self-irradiation, which causes build-up of Am, U, and Np, and in addition, He bubble formation. These radiation-induced changes lead to complex defects and microstructure. Compounding the problem is the fact that the δ-Pu alloys of interest are unstable under ambient conditions and can partially transform to new phases and phase segregate. Despite these effects there is substantial lattice annealing that counteracts this damage. Indeed, an important finding is that despite the self-irradiation, δ-Pu alloys are remarkably resilient and maintain their integrity (e.g., not undergoing void swelling as discussed below). The question at hand is how changes in physical and chemical properties affect pit performance and on what time scale.

Research on how material properties change with age includes laboratory experiments and computer simulations. Most of the focus has been on Pu and pits. Experiments and calculations on actual and simulated pit materials are combined with experiments on ^{238}Pu-spiked material in accelerated aging experiments. However, the high explosive and other components also need attention. We have reviewed much of the program on pit-material aging in our previous reports, and do not repeat that discussion here. New developments have emerged in the past year, including results published in the open literature.

4.1 Ambient Condition Studies

The best-understood part of Pu aging is the change in its isotopic and

elemental composition as unstable isotopes decay. Because half-lives are known very accurately, and relevant cross-sections are generally well known, the contribution of radioactive decay to aging may be calculated with confidence. At early times the dominant contribution is the decay of ^{241}Pu (about 0.5% of pit alloys) with a half-life of 14.4 years to ^{241}Am, which has a lower fission cross-section. At later times, following the depletion of the ^{241}Pu, the rate of decrease resulting from the decay of ^{239}Pu, ^{240}Pu and ^{241}Am is a few times less. If there were no other relevant aging processes these values would themselves imply lifetimes, depending on the margin, of several hundred to over a thousand years.

Surveillance of pits and laboratory experiments on Pu alloys provide direct information on changes in physical and chemical properties with age. Considerable work on density changes in Pu alloys due to aging has been done using volumetric, dilatometric and x-ray diffraction techniques. The results, which were reviewed during the past year, have clarified several inconsistencies. Much of this work involves standard microanalysis, including optical and electron microscopies, and has benefitted from the Enhanced Surveillance and Dynamic Material Properties Campaigns.

The Pu accelerated aging program augments the study of naturally aged Pu. A central question is the extent to which these "artificially" aged samples are representative of "naturally aged" material, given the differences in isotopic composition and heating. A variety of measurements demonstrate qualitative similarities between the two types of material. The samples are held at different ambient temperatures in order to try to match annealing effects. There are also similarities in the density and strength changes. Differences due to the isotopic distribution are well accounted for.

Ga-stabilized δ-Pu is metastable at room temperature. Many of the issues that arise are related to the metastability of the δ-Pu alloy and the nearly 20% volume difference between the δ and α phases. The potential consequences of the thermodynamic metastability for aging of δ-phase alloys have been examined experimentally for both naturally and artificially aged

material. Phase decomposition and segregation can occur but the kinetics are slow, with little loss in integrity of the bulk material.

4.2 Equation of State

The equation of state (EOS) is the fundamental thermodynamic relation between the density, pressure, temperature, and composition, and therefore includes the zero-pressure density and compressibility. At least approximately, the measurements between methods and between naturally and accelerated-aged Pu are consistent.

Theoretical calculations are in principle capable of disentangling the separate effects of lattice damage, interstitial and bubble He and chemical impurities and of surveying the entire P–V plane, on and off the Hugoniot. These calculations are generally limited to small simulation cells, while phenomenological calculations are subject to uncertainties in the interatomic potentials. Differential effects of aging may be estimated to useful accuracy even if the absolute accuracy is limited.

There is a need to extend high level computations to the actual performance of aged Pu. LLNL and LANL have both applied large-scale molecular dynamics codes to attempt to simulate the effect of shock compression. This work has been performed on the BlueGene/L supercomputer for various metals. It is important to continue to improve high level calculations on Pu using multiscale modeling approaches, as discussed below.

4.3 Void Swelling

One of the major concerns initially in Pu aging was the possibility of void swelling. Void swelling is a well-known consequence of radiation damage in nuclear reactor material. Because of the potential expansion of material with void swelling, it has been a serious concern. However, there is no empirical

evidence for void swelling in aged δ-Pu. This, in itself, is reassuring because in other materials void swelling begins gradually after a finite incubation time, and phenomenological estimates based on these data indicate that any void swelling in δ-Pu will not be significant for several more decades. Even more reassuring is the theoretical expectation that δ-Pu will not undergo void swelling at all. This follows from the fact that the calculated volume increase produced by an interstitial atom in δ-Pu is less (in magnitude) than the calculated volume decrease produced by a vacancy (in materials known to undergo void swelling the inequality is in the opposite direction). This implies that radiation damage will not tend to produce net strain that can be relieved by nucleating a void. Qualitatively, this is expected because δ-Pu has an expanded structure, so that disturbing it will tend to reorganize it in the direction of the denser α phase rather than expanding it. Nucleation of a δ to α transition is prevented by the presence of the stabilizing Ga, which is redistributed by radiation damage so that it is not lost to isolated regions of Pu_3Ga, as would be required for such a phase transformation. In view of the importance of possible void swelling in Pu phases, fundamental studies of the problem should continue, for example using accelerated aged material.

4.4 Strength

Strength is not an equilibrium thermodynamic property and is dependent on many factors. At the outset, it is important to distinguish between different types and measures of strength. These types include compressive yield strength, shear strength, and tensile strength. All are in general strongly dependent on temperature, strain rate, and phase, and can differ for single crystals, polycrystalline aggregates and composites. Thus, the strength of Pu at very high rates of deformation may be different from that observed in static or low strain-rate measurements.

Measurements on Pu at low strain rates show increases in strength with age, either natural or accelerated. This is found both for yield strength (the

tensile stress at which irreversible plastic work begins, usually defined at 0.2% strain) and for ultimate tensile strength (the maximum stress achieved before a specimen fails, larger than yield strength because of work hardening). However, these measurements of hardness and strength are either static or quasi-static and performed under ambient conditions, rather than those encountered in the implosion of a pit, and their relevance to nuclear performance is at this time unclear.

We commend the approach taken by the Laboratories for investigating strength in order to obtain a conservative estimate of its effects on lifetimes, but potentially larger effects that might act in the opposite direction have not yet been taken into account. We conclude that the Laboratories have made good progress in identifying possible age-related changes to the dynamic strength of Pu, but there is much work to be done to quantify understanding in the regimes most important for pit performance.

5 LIFETIME METHODOLOGY

5.1 QMU Framework

The laboratories have used the methodology of Quantification of Margins and Uncertainty (QMU) to assess pit lifetimes based on simulations of primary performance. Various metrics for this performance have been established but the key requirement is that the primary must produce sufficient nuclear yield to drive the secondary. It is therefore critical to understand if possible degradation of the pit due to Pu aging will ultimately lead to a failure to ignite the secondary. A large series of UGTs have established that the primary will successfully ignite the secondary provided that the yield is sufficiently large. The basic idea is to compute a ratio of the margin M to the total uncertainty U. The higher this ratio, the higher the level of confidence in the weapon's operation, and, in general, a central goal of Stockpile Stewardship is to continually monitor and assess this ratio and to perform mitigation to increase it should the ratio tend close to 1.

Initial minimum credible lifetime estimates provided by the Laboratories serve to highlight when and where more work is needed for a specific primary system. The non-uniqueness of defining a lifetime for a low margin system is shown by the following. The physics input leads to M and U changing with time as:

$$M(t) = M_0 + St \qquad U(t)^2 = U_0^2 + (\delta S)^2 t^2$$

where we assume that changes are described by a linear slope, S, with an error δS (2σ, to be consistent with U as discussed above), and

$$(\delta S)^2 = \sum_i (\delta S_i)^2$$

Yearly certification demands that $M > U$, so the lifetime T is defined by

$$M(T) = U(T).$$

The determination of lifetime T for then depends on knowing four numbers, M_0, U_0, S, and δS. We have two limiting cases:

1. When the effect of aging is well understood and can be calculated accurately:
$$\delta S \ll S \Rightarrow T \approx \frac{M_o - U_o}{S}$$
2. When the effect of aging has large uncertainty and M_o is not very close to U_o:
$$\delta S \gg S \Rightarrow T \approx \sqrt{\frac{M_o^2 - U_o^2}{(\delta S)^2}}.$$

For systems with low margins, $M_o \approx U_o$ and hence different approaches to error handling will give different answers. These considerations point to the need for continued work on assessment of margins and uncertainties.

6 BEYOND THE LEVEL 1 MILESTONE

The Laboratories have made significant progress toward meeting the Level 1 Milestone, exceeding requirements in some ways, but also identifying work that remains to be done. Although more work is needed, both to provide more complete validation of the lifetime estimates themselves, and to better determine the associated uncertainties and tradeoffs (e.g., mitigation strategies), it is likely that the overall level of effort required is much less than in the past 3–5 years. Another key reason for further work is to gain experience with Pu that has suffered the equivalent of a century or more of aging (i.e., with accelerated aging), thereby allowing an interpolation rather than an extrapolation in estimating performance changes and degradation due to aging. In particular, one wants to know the modes of failure that will be among the first to appear, because these can inform the stockpile surveillance program in order to make it most sensitive to aging-induced degradation.

The following is a listing of recommendations for follow-on studies, with a justification for the need and prioritization (or scheduling) of each recommendation.

1. *Validation through peer review of current estimates of primary-performance lifetimes.* Several systems require more detailed analysis in order to obtain reliable estimates of minimum lifetimes, and their associated uncertainties and tradeoffs. For these systems it is important that each contribution to the lifetime be well understood and validated. In a sense, the issue is not one of accounting for aging but of managing the margins and uncertainties that are already present at zero age, and this is best done by understanding the tradeoffs involved and the consequent mitigation strategies that can be applied. It is our highest-priority recommendation that this effort be completed within a matter of several weeks in order to ensure that no problems remain unrecognized with the current level of analysis. (We note that this short term recommendation has largely been completed since

the writing of this report.)

2. *Primary performance and material strength.* There must be a more detailed understanding of the different types of dynamic (high strain-rate) strengths involved in the weapons codes, and then a more complete understanding of how these strengths vary with aging through relevant experimental and theoretical work. This is fundamentally difficult because strength is not an equilibrium-thermodynamic property, so is not well defined theoretically nor is it always well-defined experimentally. Moreover, the relevant regimes of high pressures, temperatures and strain rates are difficult to access, and the loading-path history and associated kinetics across the material phase diagram are therefore not well determined. New experiments should be carried out on both naturally and artifically aged Pu.

3. *Extended accelerated aging experiments on plutonium.* These include both ongoing study of the current accelerated-aging Pu samples, which are spiked with the rapidly-decaying ^{238}Pu, as well as production of samples that have been aged by alternative means. In all of these cases, the objective is to get the equivalent of multi-century experience on aging phenomena, associated with decay (e.g., radiation damage) as well as with activated processes such as annealing. The latter requires taking sub-samples of accelerated-aged material through various temperature cycles in order to determine how the activated processes have been affected by radioactive decay. This is longer-term (multi-year) work both because time is required for the samples to reach appropriate (equivalent) ages, and because one is looking at effects not likely to influence stockpile weapons for many decades. Nevertheless, such studies are essential in order to validate current understanding, and ensure that no new phenomena lurk unobserved below the surface of existing results, as well as to provide specific predictions of the failure modes to be expected in the stockpile (which in turn inform the surveillance programs on what to look for).

7 FINDINGS AND RECOMMENDATIONS

Our principal findings and recommendations are summarized as follows.

Findings

1. The nuclear weapons design Laboratories have made significant progress in understanding pit aging through improved knowledge of the underlying science and improved techniques for simulating weapons performance. Through their laboratory studies of the materials, including both naturally and artificially aged Pu, and stockpile surveillance activities, the Laboratories have also made significant progress in prioritizing the unresolved questions regarding the aging of stockpile weapons. The labs have also identified key metrics to assess the effects of aging.

2. There is no evidence for void swelling in naturally aged or artificially aged δ-Pu samples over the actual and accelerated time scales examined to date, and good reason to believe it will not occur on time scales of interest, if at all.

3. Systems with large margins will remain so for greater than 100 years with respect to Pu aging. Thus, the issue of Pu aging is secondary to the issue of managing margins.

Recommendations

1. The Level 1 Milestone Report should indicate that the primaries of most weapons system types in the stockpile have credible minimum lifetimes in excess of 100 years and that the intrinsic lifetime of Pu in the pits is greater than a century. Each physical effect on the lifetime of selected systems should be calculated and explicitly reported. The report should emphasize the need to manage margins.

2. Continued work is required beyond the Level 1 Milestone. This includes validating through peer review the current estimates of primary-performance lifetimes for selected primary types, extending accelerated aging experiments on Pu, and determining how aging affects primary performance by way of material strength.

fabrication capabilities require regular recapitalization to incorporate industry supported technology.

Future uranium storage capacity has been addressed through the recently completed Highly-Enriched Uranium Materials Facility (HEUMF). Plutonium storage capacities indicate a potential issue in the FY 2014 time frame. Plutonium storage capacities and options are being analyzed to develop a more holistic approach to resolving issues for the foreseeable future and provide better support for continued directed stockpile work activities.

There is also a need to clearly delineate between a baseline, or "potential" capacity and the actual number of units made. For example, Y-12 may have future baseline capacity of 80 canned subassemblies per year but the number actually produced in a given year could be far less depending on stockpile requirements. Thus, the capacities should be clearly understood as different from the number actually made in a given year. Historically, the number of actual units made is a fraction of the infrastructure capacity.

Capacities During NNSA Transitions

For most capabilities, transition from the infrastructure of today to a modernized infrastructure of tomorrow does not introduce rate-limiting concerns, because efficiencies are improving during the transition. Plutonium pit work is a concern because it is today's main rate-limiting capacity. The upgrades to PF-4 will address this capability and provide the required capability-based capacity. The new UPF is planned to be capability-based and the resulting capacity is expected to be lower than Y-12's existing old uranium production facilities. The existing Y-12 infrastructure was designed to support Cold-War stockpiles and thus it has a greater capacity than needed long-term, unless one of the existing facilities is unexpectedly shut down, resulting in a capacity of zero. Tables D–2 and D–3 show the transition of estimated plutonium and HEU capacities from today to 2024.

Table D–2.Transition Annual Plutonium Pit Capacities at Los Alamos National Laboratory (Bounding Estimates)

	Today	2016	2017	2018	2019	2020	2021	2022	2023	2024
Pits requiring most manufacturing process steps	10	10	15	20	20	40	60	80	80	80

Table D–3.Transition Annual HEU Canned Subassembly Capacities at Y-12

	Today	2016	2017	2018	2019	2020	2021	2022	2023	2024
CSAs requiring only reuse/ re-inspection (a) (b)	40	40	40	40	40	0-40	0-40	80	80	80
Refurbished or new CSAs	160	160	160	160	60-120	20-60	0-40	40-80	80	80

(a) Capacity over and above that assumed for refurbished or new CSAs; assumes UPF Program Requirements Document, Rev 4.

(b) A transition from existing facilities to UPF will occur in 2019 through 2021; the transition approach will be closely coupled to stockpile needs during that period.

IV. ASSESSMENT OF FY 2008 PERFORMANCE

PBI NO. 1 MULTI-SITE PERFORMANCE

PBI 1: Multi-Site Performance

Maximum Available Fee: **$5,129,600**
Fee Earned: **$5,129,600**

PBI 1: Multi-Site Performance		AVAILABLE FEE $5,129,600		AWARDED FEE $5,129,600	100%
		BASE	STRETCH	BASE	STRETCH
1.1	Down-Select W76 Life Extension Program (LEP) Canned Sub-Assembly (CSA) Material	$674,947	$0	$674,947	$0
1.2	Deliver B61-7/11 LEP Quantities to DoD On Time Per P&PD	$539,958	$0	$539,958	$0
1.3	Approve W88 SS-21 HAR	$134,989	$0	$134,989	$0
1.4	Complete Complex Transformation NEPA Process by August 2008	$67,495	$0	$67,495	$0
1.5	Deleted	$0	$0	$0	$0
1.6	Match 2007 Dismantlements	$269,979	$0	$269,979	$0
1.7	Deliver Products for DoD On Time Per P&PD	$674,947	$0	$674,947	$0
1.8	Implement a NNSA Supply Chain Management Center (SCMC)	$202,485	$0	$202,485	$0
1.9	Implement Gas Sampling Activities Using Powerless Pump Module	$134,989	$0	$134,989	$0
1.10	Implement Elements from FY 2007 Developed Multi-Site Enterprise IT Plan	$202,485	$0	$202,485	$0
1.11	Implement Requirements Modernization Initiative (RMI) Phase II Implementation	$202,485	$0	$202,485	$0
1.12	Implement Advanced Simulation and Computing (ASC) Tri-Lab Productivity on Demand (TriPod) Initiative by September 30, 2008	$269,979	$0	$269,979	$0
1.13	Build Six New W88 Pits & Install Equipment in FY 2008 to Increase Pit Capacity to 80 Pits Per Year by the Operational Date of a CMRR-Nuclear Facility	$1,079,915	$0	$1,079,915	$0
1.14	Reduce Uncertainty in Warhead Performance	$269,979	$0	$269,979	$0
1.15	Remove 11 Metric Tons of SNM from NNSA Sites by September 30, 2008	$404,968	$0	$404,968	$0
		$5,129,600	$0	$5,129,600	$0

Completion/Validation Statements

Measure 1.1 Down-Select W76 Life Extension Program (LEP) Canned Sub-Assembly (CSA) Material (Incentive/Base)

Expectation Statement:
Down-select W76 Life Extension Program (LEP) Canned Sub-Assembly (CSA) material.

Completion Assessment:
LANS has submitted completion evidence for award of full fee. NNSA has validated appropriate and timely completion.

Measure 1.13 Build Six New W88 Pits & Install Equipment in FY 2008 to increase Pit Capacity to 80 Pits per Year by the Operational Date of a CMRR-Nuclear Facility (Incentive/Base)

Expectation Statement:
Build six new W88 pits and install equipment in FY 2008 to increase pit capacity to 80 pits per year by the operational date of a CMRR-Nuclear facility.

Completion Assessment:
LANS has submitted completion evidence for award of full fee. NNSA has validated appropriate and timely completion.

Measure 1.14 Reduce Uncertainty in Warhead Performance (Incentive/Base)

Expectation Statement:
Reduce Uncertainty in warhead performance.

Completion Assessment:
LANS has submitted completion evidence for award of full fee. NNSA has validated appropriate and timely completion.

Measure 1.15 Remove 11 Metric Tons of SNM from NNSA Sites by September 30, 2008 (Incentive/Base)

Expectation Statement:
Remove 11 metric tons of SNM from NNSA sites by September 30, 2008.

Completion Assessment:
LANS has submitted completion evidence for award of full fee. NNSA has validated appropriate and timely completion.

Tab 40 - Mello Aff #1, par 19, ref 4:
http://www.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf

in U.S. extended deterrence capabilities will be made without close consultations with our allies and partners.

Sustaining a Safe, Secure, and Effective Nuclear Arsenal

The United States is committed to ensuring that its nuclear weapons remain safe, secure, and effective. Since the end of U.S. nuclear testing in 1992, our nuclear warheads have been maintained and certified as safe and reliable through a Stockpile Stewardship Program that has extended the lives of warheads by refurbishing them to nearly original specifications. Looking ahead three decades, the NPR considered how best to extend the lives of existing nuclear warheads consistent with the congressionally mandated Stockpile Management Program and U.S. non-proliferation goals, and reached the following conclusions:

- The United States will not conduct nuclear testing and will pursue ratification and entry into force of the Comprehensive Nuclear Test Ban Treaty.
- The United States will not develop new nuclear warheads. Life Extension Programs (LEPs) will use only nuclear components based on previously tested designs, and will not support new military missions or provide for new military capabilities.
- The United States will study options for ensuring the safety, security, and reliability of nuclear warheads on a case-by-case basis, consistent with the congressionally mandated Stockpile Management Program. The full range of LEP approaches will be considered: refurbishment of existing warheads, reuse of nuclear components from different warheads, and replacement of nuclear components.
- In any decision to proceed to engineering development for warhead LEPs, the United States will give strong preference to options for refurbishment or reuse. Replacement of nuclear components would be undertaken only if critical Stockpile Management Program goals could not otherwise be met, and if specifically authorized by the President and approved by Congress.

Consistent with these conclusions, the NPR recommended:

- Funding fully the ongoing LEP for the W-76 submarine-based warhead and the LEP study and follow-on activities for the B-61 bomb; and
- Initiating a study of LEP options for the W-78 ICBM warhead, including the possibility of using the resulting warhead also on SLBMs to reduce the number of warhead types.

In order to remain safe, secure, and effective, the U.S. nuclear stockpile must be supported by a modern physical infrastructure – comprised of the national security laboratories and a complex of supporting facilities – and a highly capable workforce with the specialized skills needed to sustain

Tab 41 - Mello Aff #1, par. 54:
http://www.cfo.doe.gov/budget/11budget/Content/Volume%201.pdf

(dollars in thousands)

	Appropriations	Obligations	Costs
FY 2012	3,000	3,000	3,000
FY 2013	3,500	3,500	3,500
FY 2014	4,000	4,000	4,000
FY 2015	4,500	4,500	4,550
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
Total, OPC	TBD	TBD	TBD
Total Project Cost (TPC)			
FY 2002	1,665	1,665	1,665
FY 2003	12,174	12,174	12,174
FY 2004	16,714	7,214	7,214
FY 2005	20,731	30,231	9,012
FY 2006	29,310	29,310	20,211
FY 2007	19,026	19,026	28,621
FY 2008	39,406	39,406	31,638
FY 2009	92,248	92,248	46,661
FY 2010	58,200	58,200	79,180
FY 2011	168,500	168,500	107,000
FY 2012	292,200	292,200	261,000
FY 2013	303,500	303,500	303,500
FY 2014	303,961	303,961	304,000
FY 2015	304,500	304,500	304,550
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
Total, TPC	TBD	TBD	TBD

Overall Project

(dollars in thousands)

	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED[a]			
FY 2004	9,500	0	0
FY 2005	13,567	23,067	1,848
FY 2006	27,910	27,910	19,147
FY 2007	14,161	14,161	27,213
FY 2008	0	0	15,079
FY 2009	0	0	-329
FY 2010	0	0	2,180
Total, PED (PED 03-D-103-01)	65,138	65,138	65,138
Final Design & Construction (TEC 04-D-125)			
FY 2004	9,941	0	0
FY 2005	39,684	49,625	0

[a] CMRR SFE and NF have completed preliminary design using PED funds included 03-D-103. Design beyond preliminary will be completed using TEC funds included in 04-D-125.

Tab 42

WEAPONS PROGRAM EMERGES FROM '11 BUDGET BATTLE NEARLY UNSCATHED

The National Nuclear Security Administration's weapons program was spared from what could have potentially been significant cuts in the final Fiscal Year 2011 funding bill as Congress nearly matched the Obama Administration's record request for the program. The House and Senate passed a year-long Continuing Resolution this week that will fund the government for the final five-and-a-half months of the fiscal year after narrowly reaching the deal to avert a government shutdown, and the bill provides $6.993 billion for the weapons program. The funding total is just $15 million less than the Administration's request, and erases a House-proposed cut of $312 to the program that had weapons complex officials suggesting that the nation's recently updated nuclear weapons policy could need to be altered if the nation wasn't able to afford the price tag for costly work to modernize the nation's weapons complex and arsenal.

The bill also rescinded $50 million in prior-year funds, and imposed a .2 percent government-wide funding rescission that trimmed another $14 million from the request, decreasing the total funding for the program to $6.979 billion. An additional $33.1 million was cut from the bill "to reflect savings resulting from the contractor pay freeze instituted by the Department," according to the text of the bill. "We got it done almost. It's just a tad lower than it should have been," said Sen. Jon Kyl (R-Ariz.), who spearheaded an effort in the fall to get the Administration to commit to modernization plan for the weapons program over the next decade and actively rallied supporters on both sides of the aisle in the House and Senate to help avert the cuts. "Both sides weighed in in a way that I have no complaints about."

NNSA: Request Was 'Absolutely Critical'

In the fall, the Administration said that $85 billion would be needed to maintain and modernize the weapons complex from FY2011 to FY2020, about $15 billion more than projections during the Bush Administration, and the $7.01 billion FY2011 request—a $624 million increase from FY2010—was expected to represent the first investment in the modernization plan. The request included funds for work on refurbishing three weapons systems (the W76 and W78 warheads as well as the B61 bomb) and the acceleration of construction on two key facilities that will replace the nation's aging plutonium and uranium infrastructure: the Chemistry and Metallurgy Research Replacement-Nuclear Facility planned for Los Alamos and the Uranium Processing Facility slated for the Y-12 National Security Complex. It also made revitalizing the scientific and technological base that underpins the nation's Stockpile Stewardship Program a priority.

While the House cut $312 million from the FY2011 request, the Senate cut $185 million, and with the budget picture clouded, NNSA officials over the last month began to go public in explaining the potential impact of the cuts to the modernization program. Work on the B61 and W76 LEPs would be slowed down, and a study on refurbishing the W78 warhead wouldn't be able to begin (*see related story*), they said. Delays to design work on CMRR-NF and UPF could drive up costs, and morale among weapons complex workers would dip.

The NNSA declined to comment this week until the President signed the bill, but NNSA Administrator Tom D'Agostino was candid about the impact several weeks ago during and after a Senate Armed Services Strategic Forces Subcommittee hearing. "It's absolutely critical in order to do the job, take care of the stockpile, make sure the science backs up the stockpile and invest in the capabilities we need, that we have to have the President's budget,"D'Agostino said after the hearing. "Without the President's budget things start falling apart."

Pulling Back the Curtain

Kyl, who pressed the NNSA and the Administration to up the expected cost of its modernization during the fall as part of debate on the New Strategic Arms Reduction Treaty with Russia, proved to be a valuable ally. With help from other Republican Senators and the Administration,

Nuclear Weapons & Materials Monitor is a weekly (50 issues a year) publication covering all the activities of the U.S. National Nuclear Security Administration, including the stockpile stewardship program, complex transformation and disposition of weapons grade materials. Also includes insight on programs with Russia and other nuclear states.

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Weapons Complex Monitor ■ *Nuclear Weapons & Materials Monitor* ■ *RadWaste Monitor* ■*Nuclear New Build Monitor* ■ *GHG Transactions & Technologies*

Kyl convinced House Speaker John Boehner (R-Ohio) to back the funding, working behind the scenes to make the case for the NNSA funding, which under a House budget plan was not considered "security spending" and was not shielded from cuts like other national security programs. Led by Chairman Michael Turner (R-Ohio), the House Armed Services Strategic Forces Subcommittee also made a strong case for the NNSA, with all 16 Democrats and Republicans on the panel signing on to a letter to House Budget Chairman Paul Ryan (R-Wisc.) that urged the lawmaker to reconsider the agency's designation as "non-security" spending and provide full funding. "I just have nothing but accolades for House leadership, especially Speaker Boehner, for his commitment to see this was done," Kyl said, acknowledging the challenge that faced House leaders in balancing a push from within Republican ranks to cut spending and the need to maintain national security funding.

Kyl also suggested that the Administration played a large role in convincing Senate Democrats to go along with the funding. "After some amount of urging and telephone calls and the like, the Administration seemed to be supportive, primarily on the Senate side," he said. But he acknowledged that there would be challenges in the future stemming from what he described as the Administration's "reluctant" support for nuclear modernization and pressure to trim the entire federal budget. "I hope that my House colleagues and a couple in the Senate who are very highly motivated to reduce spending, appreciate the need to prioritize and distinguish between programs," Kyl said. "Some programs need to be cut, some need to be eliminated, some need to stay the same, and some need to be plussed up. That's just the reality of life as we go on."

An Easier Fight for FY2012?

Turner, however, suggested this week that budget battles over NNSA funding could get easier in the future now that the justification for funding the agency's modernization program has been made. The Administration has requested $7.6 billion for the program in FY2012, a $621 million increase from its FY2011 request. The funding battle "exposed at times some of the mistakes that could have been made in 2012," said Turner, who suggested that the NNSA's designation as "non-security spending" was a result of a lack of knowledge about the program from lawmakers. "Largely it was a misunderstanding of when we said we're not going to have cuts to national security, we're going to protect national security, that this is a program that was in DoD," Turner said. "I think it was misidentified, and then it was subject to the same level of cuts that a non-security program would be." He suggested that wouldn't be the case in the FY2012 budget. "Because we had to do this run-through … we were able to catch some of the mistakes that hopefully mean some of the battles will be easier for Fiscal Year 2012," he said.

—Todd Jacobson

LANL DIRECTOR, TOP FED OFFICIAL ADVOCATE INCREASED PARTNERSHIP

LOS ALAMOS, N.M.—The way Los Alamos National Laboratory is managed could look significantly different in coming years if the top contractor executive and senior National Nuclear Security Administration official at the site have their way. During a visit to the lab last week by a National Academy of Sciences panel tasked with examining the impact of management changes on the institution and its effect on science, retiring LANL Director Mike Anastasio said safety and security improvements in the five years since a Bechtel-led team took over management of the lab demonstrated that the NNSA should ease up on its oversight of lab operations. "I think we've made tremendous strides here, and I don't see that trust level has changed in a significant way or a positive way," Anastasio said, later adding: "What can NNSA do to help? I'm trying to find the right way to say this: To spend more energy enabling our success and less energy managing us."

The issue of contractor oversight has emerged over the last few years as a contentious issue among Department of Energy officials and the Defense Nuclear Facilities Safety Board. Energy Secretary Steven Chu, a former national laboratory director, has pushed for more freedom for DOE contractors, and the NNSA has moved to implement the 'Kansas City' governance model across the weapons complex, a system of governance that relies less on extensive government oversight and more on contractor assurance systems. The safety board, however, has questioned that approach, especially in areas involving nuclear operations.

NNSA Moving Away From Being 'Dictatorial'

For his part, Los Alamos Site Office Manager Kevin Smith told the NAS panel that he is committed to moving toward a new form of cooperation, "from being dictatorial … to opening the door for things as opposed to using the rules to say no." Smith, who came to Los Alamos last July from a post as deputy site manager at the Y-12 National Security Complex, cited his experience as a former Air Force pilot to back his claim that he was "all about alignment and empowerment," adding: "I am used to taking added risks more than others, and I have to call myself back a bit." In his conversation with the committee, Smith emphasized that he was completely committed to the partnership. "I've even offered Mike Anastasio the ability to pick one-third

Tab 43

Chemistry and Metallurgy Research Replacement (CMRR) Project

CMRR Project Update

Los Alamos, New Mexico
June 10, 2010

Rick Holmes, *LANL*
CMRR Division Leader

Los Alamos NATIONAL LABORATORY
NNSA National Nuclear Security Administration

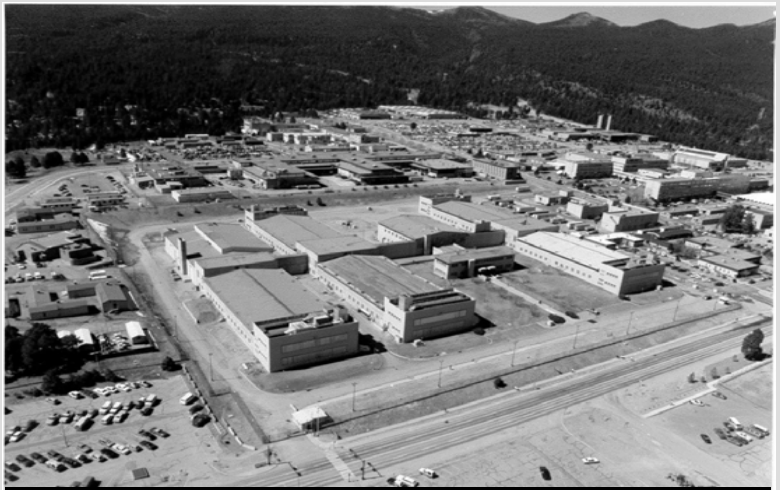
CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

LA-UR 10-01115

CMRR Mission Need Statement

"The CMR Replacement (CMRR) Project seeks to relocate and consolidate mission-critical CMR capabilities at LANL to ensure continuous support of NNSA stockpile stewardship and management strategic objectives; these capabilities are necessary to support the current and directed stockpile work and campaign activities at LANL beyond 2010."

1949 CMR Construction Site

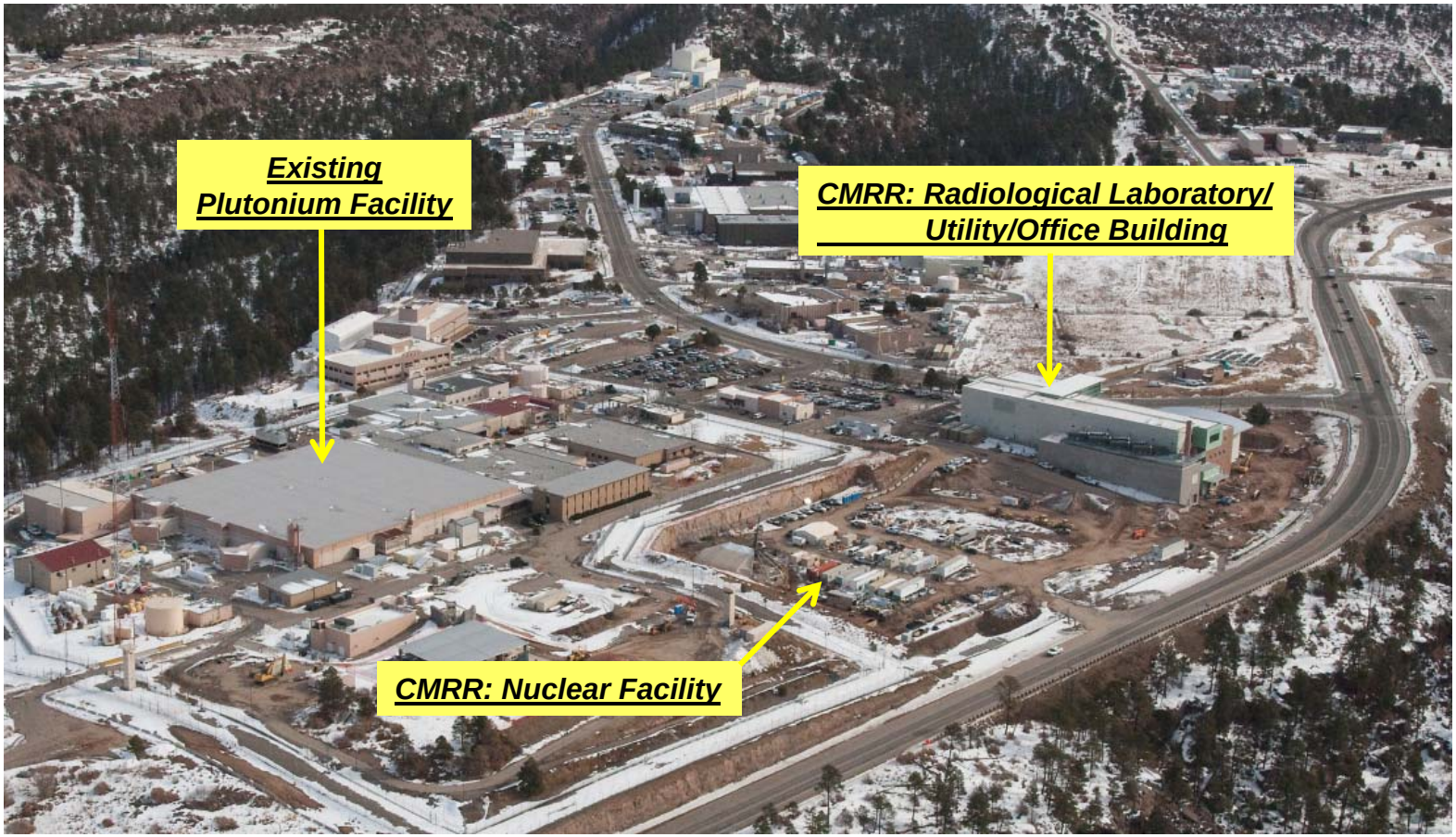


Existing Chemistry and Metallurgy Research Building

Los Alamos NATIONAL LABORATORY EST.1943 NNSA

CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

CMRR at Technical Area-55



Project Overview

- Budget Authority – $97M for FY10
- President's Request – $225M for FY11
- NNSA Headquarters Program Direction
  - Complete RLUOB within approved performance baseline **– Complete**
  - Complete REI according to performance baseline **– Ongoing/Ahead of schedule**
  - Plan for CMRR NF completion by 2020 with operations in 2022
- NF Final Design
  - Technical Safety Strategy ready for Definitive Design
    - **NNSA and DNFSB validation of nuclear safety approach**
  - Executive and Congressional support
  - Nuclear Posture Review – Published

Radiological Laboratory/Utility/Office Building (RLUOB)

Radiological Laboratory Utility Office Building (RLUOB) and RLUOB Equipment Installation (REI)

Radiological Laboratory/Utility/Office Building (RLUOB)

Building Shell

- Facility Performance Baseline ($164M TPC):
- 19,500 NSF radiological lab space (<8.4g 239 Pu equivalent)
- Centralized utilities/services for all CMRR facility elements
- Office space for 350 CMRR workers
- Consolidated training facility
- Facility incident command; emergency response capabilities

Status: Substantially Complete – Sept 2009
Closeout (CD-4) – Feb 2010

Equipment

- RLUOB Equipment and Installation (REI)
- Operational equipment to complete functionality of RLUOB

Status: CD-2/3 Approved – July 2009
TPC = $199.4M
Completion – 2013

RLUOB Highlights

- **CD-4 (tailored) Closeout Submitted to NA-1**
  - Complete within baseline
- **Claims Process Continues**
- **Sustainable Design:**
  - *FY10 NNSA Best in Class:* Sustainable Design – Green Buildings
  - *FY10 DOE EStar:* Sustainable Design - Green Buildings
  - *LEED Silver/Gold applicant* (summer 2010 review)

RLUOB Equipment Installation

- Working Ahead of Plan
- Laboratory walls construction complete
- NDC coating underway
- Construction Subcontracts (mechanical/electrical/piping) Awarded this Summer

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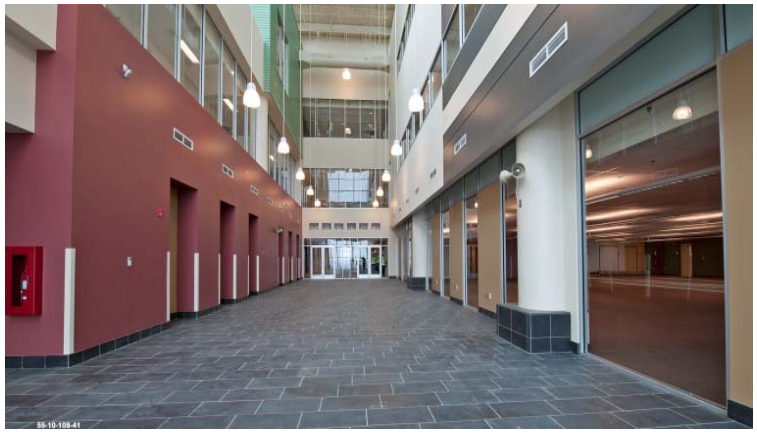
CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

Radiological Laboratory/Utility/Office Building

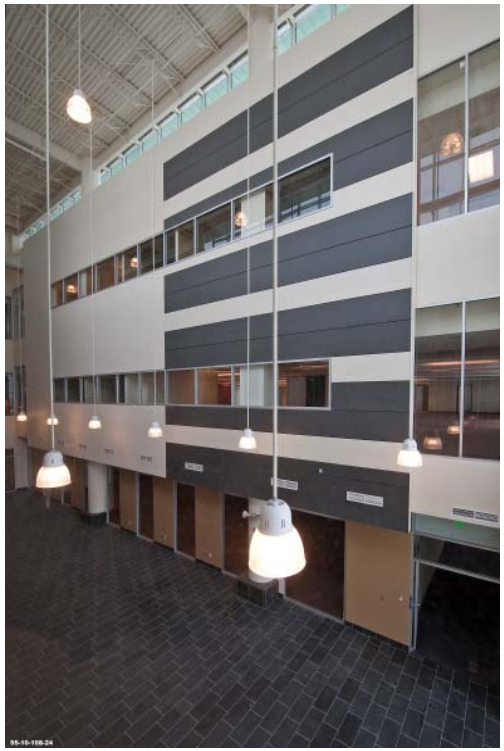
- Over two million man-hours worked with no lost time accidents
- Leadership in Energy and Environmental Design (LEED) – "Silver" certification award anticipated
- FY10 NNSA Pollution Prevention Award, Best in Class for Sustainable Building
- Highest Quality Standards – Nuclear Quality Assurance (NQA-1)

Los Alamos NATIONAL LABORATORY EST.1943 NNSA CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

RLUOB Progress Photos



RLUOB Progress Photos



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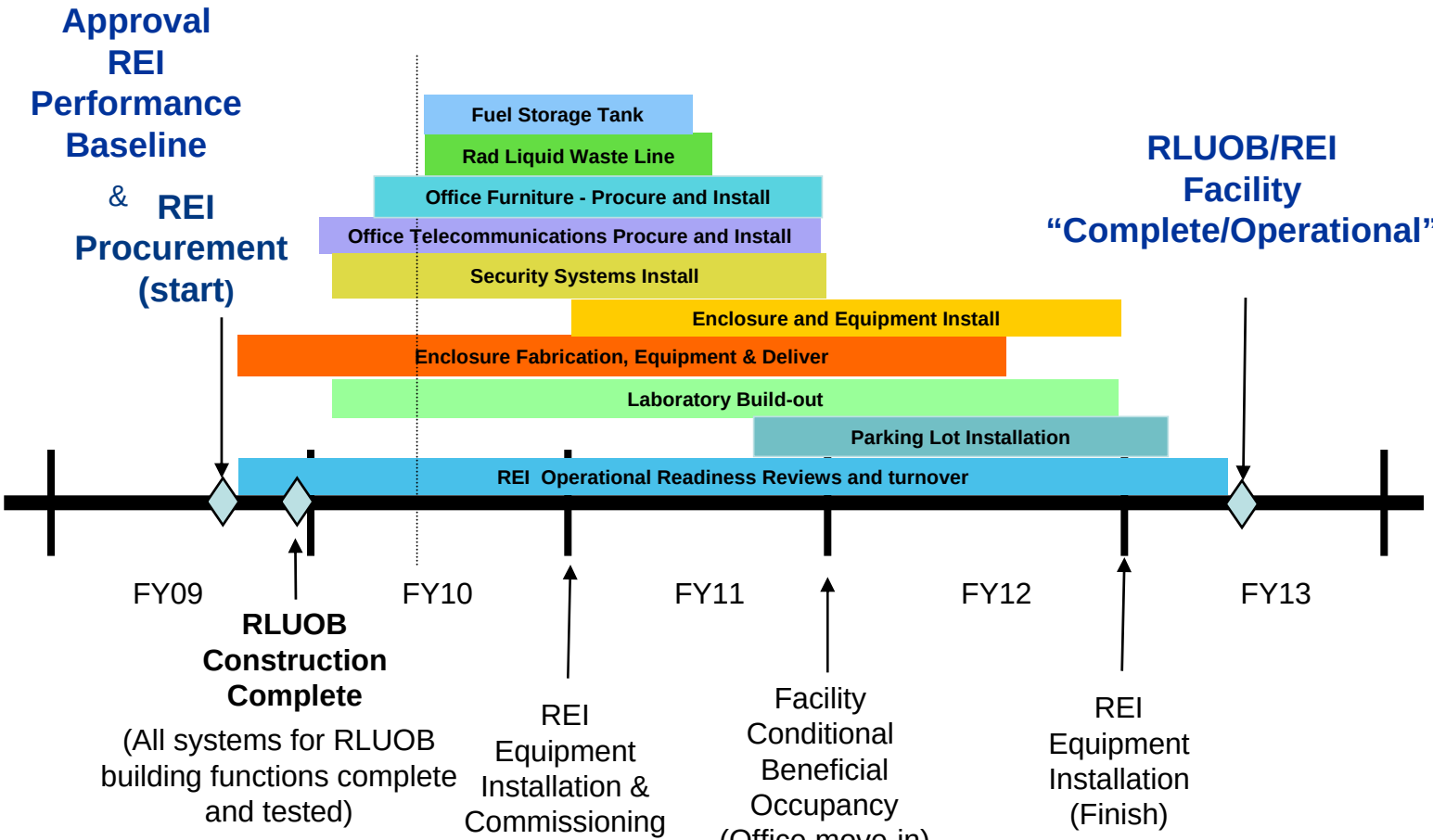
NNSA

CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

RLUOB Equipment Installation (REI)

RLUOB Equipment Installation Plan

Total Project Cost = $199.4M



Nuclear Facility (NF)

Program Requirements

NF shall include laboratory and research capabilities for:

- Missions assigned to LANL for Analytical Chemistry and Materials Characterization
- Special Nuclear Material long-term storage
- Capability to handle Large Vessel Handling Mission in future
- Mission support operations necessary to perform the above including, material handling, short-term storage, waste management, sample management, and sample preparation

Additional NF Design Requirements

- Laboratory spaces shall be designed to be flexible and modular to accommodate changes in mission
- Service life shall be 50 years
- Gloveboxes, hoods, and other nuclear specialty equipment shall utilize standard design platforms as much as practical

Nuclear Facility (NF) – Status

Nuclear Facility (NF)

- Baseline under Development:
- CMR Laboratory Replacement Capability
- Nuclear "Hazard Category 2" Facility
- 22,500 Net Square Feet Lab Space
- Special Nuclear Material storage (6M tons)
- Special Facility Equipment
- Robust "Security Category 1"

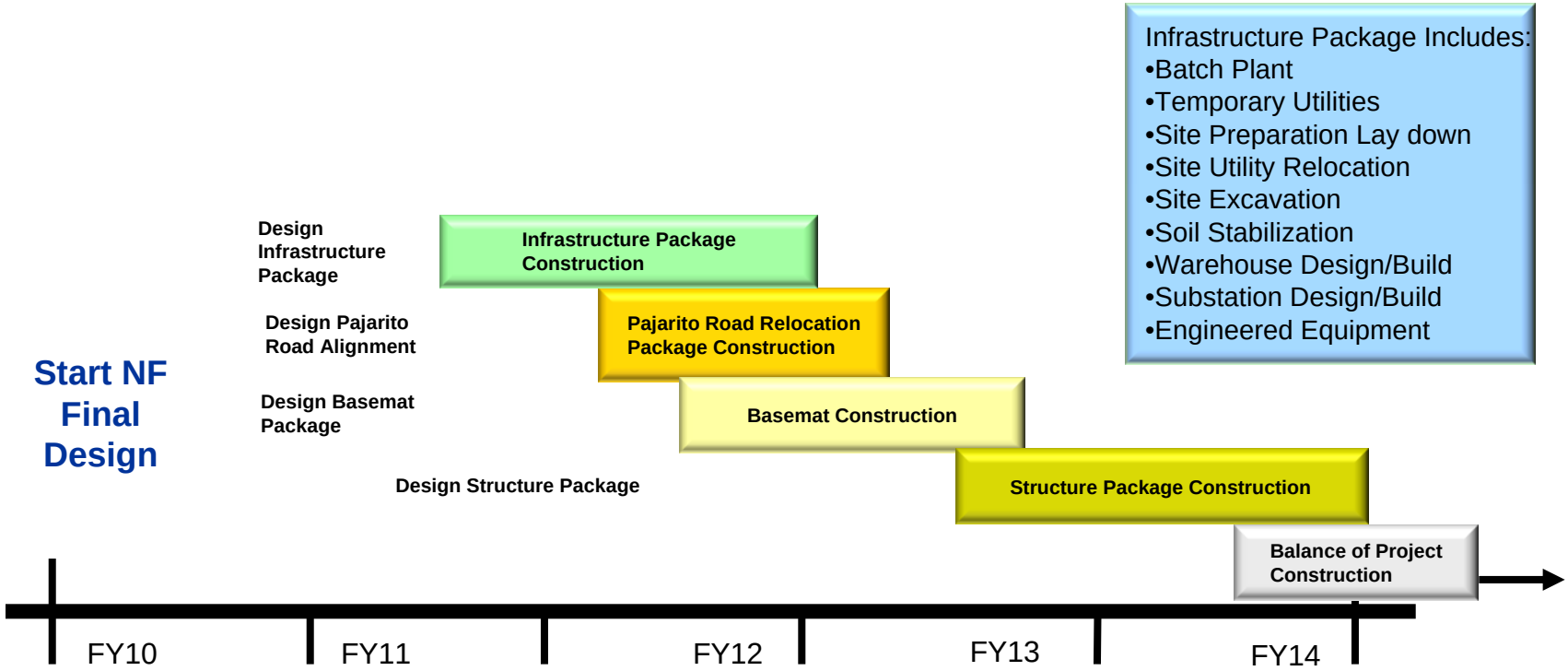
Status: Interim design

- **Rev 0 Preliminary Documented Safety Analysis – published in April**
- **Preliminary Safety Analysis Report: Review Underway**
- **Maintain active, continuous dialog w/DNFSB – sustain certification**
- **User Validation and Optimization of Lab layouts**
- **Engineering publishing technical baseline documents – complete this Summer**
- **Issue Final Design Contracts – preserve current design teams**
- **Supported NNSA HQ TPC Cost range Review (two scenarios) - April**
- **Execute Acquisition approach**
  - **Baseline/Execution Chunks**
  - **Non-Nuclear Infrastructure start FY11**
- **NF Completion will be to NQA-1 (2008/2009 addenda)**

Los Alamos NATIONAL LABORATORY EST.1943 NNSA

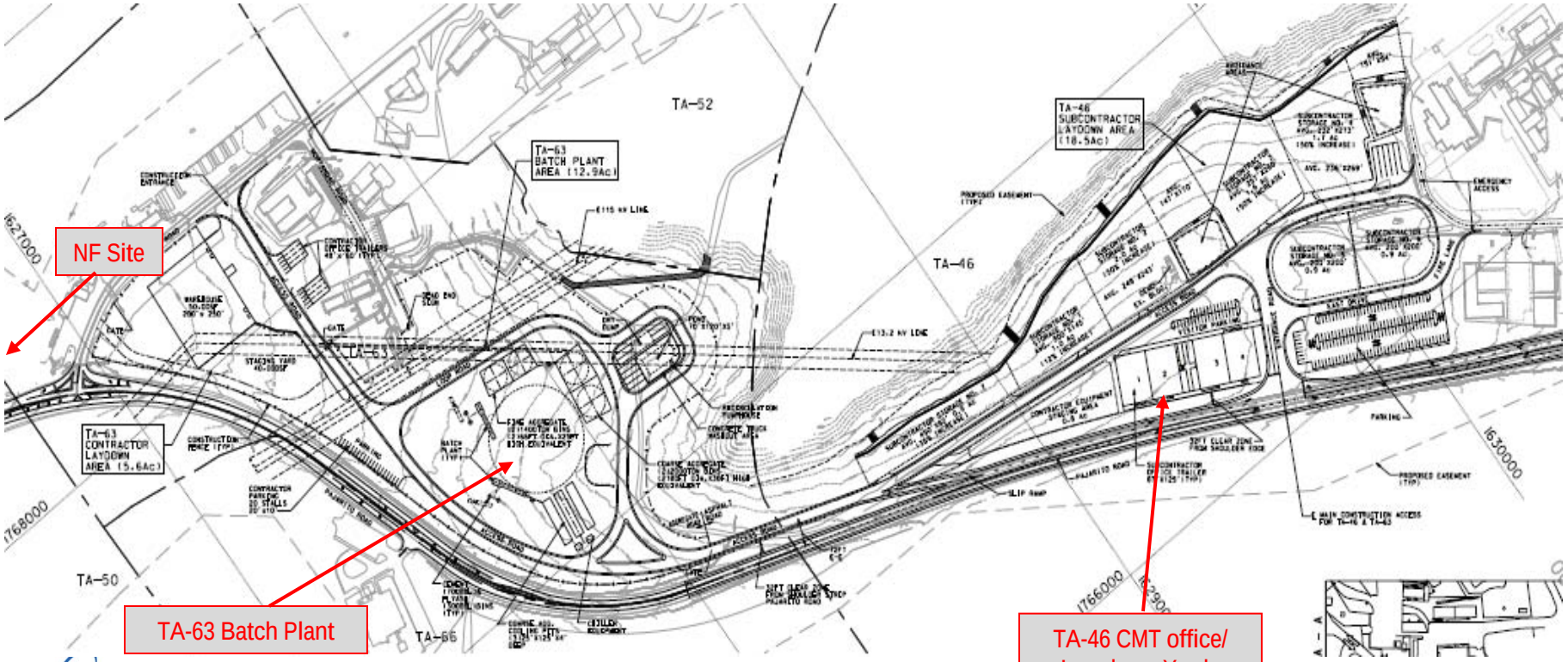
CHEMISTRY & METALLURGY RESEARCH REPLACEMENT

Planned Nuclear Facility Baselines



Construction Site Infrastructure

Lay-down/fabrication yards offices will be established approximately 1 mile from the NF construction site at TA-63 and TA-46 due to lack of available space at the NF construction site.



Closing Comments/Questions

term needs; develop an integrated action plan to implement the concrete sourcing strategy
2. Conducted a comprehensive make-buy analysis of site taxi/shuttle service including a comparison to outsourcing to the County.

Fee Schedule:
Stretch: $100,000

- $50,000 for completion of Target 1
- $50,000 for completion of Target 2

Assumptions Specific to This Measure:
- LANS and LASO will agree to completion evidence for each target by April 15, 2010.
- A TA-50/55 specific concrete strategy is included in 16.2.2 which must tie to this deliverable.
- A TA-50/55 specific transportation plan is included in 16.2.2 which must tie to this deliverable.
- Sourcing Strategies must evaluate a credible set of acquisition and packaging considerations.

Measure 16.2.2 Pajarito Corridor Construction Activities (Objective/Stretch)

Expectation Statement:
Develop integrated planning to support the Pajarito corridor construction activities.

Completion Target:
Measure is achieved when the Contractor has:
Instituted a process to manage the institutional interfaces and resolve issues for TA-50/55 related projects (CMRR, TA-55 Reinvestment, RLWTF, New TRU, and NMSSUP2) that enhance overall site project performance and minimize operational impacts for the next decade. The product shall produce at a minimum the following fully coordinated effective and efficient results:

1. Development and submission of an integrated laydown, staging and warehousing plan for TA-50/55 projects (to include any impacts to Pajarito Road) – DUE: June 30, 2010
2. Development of a concrete batch plant strategy coordinated with existing and future concrete plant operation - DUE: June 30, 2010
3. Development of a parking and workforce transportation plan for the TA-55 corridor that will facilitate construction execution, emergency response, and workforce safety. The plan shall determine impacts upon Pajarito road. - DUE: July 30, 2010
4. Development of a security (access control, material staging, inspection & badging) strategy. The strategy shall consider intermediate security posture during construction of projects and needs for compensatory measures. DUE: June 30, 2010
5. Identification and (cost vs benefit) study of any major scope or schedule conflicts or opportunities; DUE: May 30, 2010
6. Development and submission of a single master integrated schedule (and a process to maintain it) to support efficient execution for Pajarito corridor project activities - DUE: June 30, 2010
7. Development of a multi-year staffing plan for recruitment and retention of critical laboratory project staff (for each project). - DUE: June 30, 2010.
8. Assessment of each project's anticipated FY 2011 and FY 2012 budgets to assess capability to sufficiently staff and execute as well as to identify any significant revisions to project planning: June 30, 2010

Fee Schedule:
Stretch: $300,000

- $150,000 for completion of any 7 out of 8 Targets
- $150,000 for completion of the remaining Target

Tab 45

2. Initiate an effort to acquire and utilize Pu-242 to conduct small scale R&D in radiological facilities. *(Strategy 11.1)*
3. Develop a practical mechanism to ensure that TA-55 adequately supports plutonium and actinide science. *(Strategy 10.1)*
4. Maintain an institutional priority for plutonium science in the LDRD program. *(Strategy 9.1)*

Goal 3 – Increase workforce strength.

1. Develop an outline for updating the plutonium handbook, and an assessment of what resources (personnel and funding) it would take to complete the update. *(Strategy 14.1)*
2. Establish a baseline for plutonium and actinide science and engineering publications, and develop a mechanism for future year tracking. *(Strategy 14.1)*
3. Establish a technical working group series in plutonium and actinide science. *(Strategy 13.1)*
4. Host an external visiting scholar in plutonium or actinide science. *(Strategy 13.1)*
5. Develop a plutonium/actinide science visitor program and host four external lectures as part of the Seaborg lecture series. *(Strategy 13.1)*
6. Offer three "Plutonium Topics" summer lecture series as part of the Materials Science Summer Student Lecture series. *(Strategy 13.2)*
7. Complete a plutonium workforce gap analysis which identifies technical areas for focused recruitment. *(Strategy 13.2)*
8. Offer at least three summer Internships for targeted graduate students in plutonium science via the Seaborg Institute. *(Strategy 13.2)*

Completion Target:
This measure has been satisfied when the Contractor has completed the three goals and submitted summary reports demonstrating achievement by September 30, 2011.

Deliverables:

1. A summary report demonstrating completion of the actions taken in FY 2010 and FY 2011 to rejuvenate and strengthen plutonium science, to develop a practical mechanism for conducting plutonium science in PF-4.
2. A summary report demonstrating completion of actions taken in FY 2010 and FY 2011 to recapitalize the scientific infrastructure and establish the capability for casting alpha phase plutonium, and conducting small-scale R&D in radiological facilities using Pu-242.
3. A summary report demonstrating completion of the actions taken in FY 2010 and FY 2011 to increase workforce strength through visiting scholars, summer schools, working groups, new awards, etc.
4. A summary report demonstrating completion of the actions undertaken in FY 2010 and FY 2011 addressing areas of substantial collaboration with LLNL and external entities, onsite and remotely.
5. Provide deliverable updates to LASO at quarterly meetings and semi-annual updates to NNSA/DOE HQ.

Measure 18.3 Delivery of CMRR and NMSSUP II
(Award Term)

Expectation Statement:
LANS will accelerate and/or complete key Nuclear Materials Safeguards and Security Upgrades (NMSSUP) Phase II and CMRR milestones as well as integration and planning of the Pajarito Road corridor.

Completion Target:
This measure has been achieved when the Contractor has by September 30, 2011:

A. <u>NMSSUP2</u>

1. All Physical Construction is complete and accepted for the following subprojects: Utility Trunk, Utility Building and SWDS; North PIDADS; South PIDAS Enhancements and West Vehicle Access
   - Site conditions are returned to the desired endstate and associated temporary facilities, security compensatory measures, and construction impacts have been removed/remediated for the WVA.
   - Associated transition to Operations and Systems startup activities are complete and the security systems are operational for the WVA, UT/UB, and SWDS.

- Training requirements have been met and sufficient operators are in place. The MSA/AVCO will not be completed for the South PIDAS Enhancements.
- Sector 7, 17, and transitions physical construction are complete.

2. Entry Control Facilities sub-project is well underway.
   - All GFE equipment has been procured and delivered.
   - Associated PIDADS physical construction complete
   - Achieve at least a three (3) month Early Finish acceleration of the entire baseline ECF schedule activities (measured against the beneficial occupancy milestone as of September 20, 2011).

B. CMRR

- Actions necessary to issue and execute construction contracts for Infrastructure Package(s) in FY 2011 are achieved on schedule.
- Nuclear Facility basemat and structural design achieve planned maturity and schedule goals.
- Demonstrate acceleration of the RLUOB REI scheduled completion from FY 2013 to FY 2012.

Assumptions Specific to This Measure:

- CMRR schedules assume appropriate NEPA documentation is completed prior to March 30, 2011.
- For the purpose of this measure, South PIDAS efforts reflect only NMSSUP II funded work.
- Transition sectors are assumed to be part of the associated subproject effort.
- No other CMRR interface points change/interfere with South PIDAS enhancements.
- Construction substantial completion may include reasonable outstanding punchlist items.

Measure 18.4 Reduce Site Nuclear Safety and Worker Safety Risks (Award Term)

Expectation Statement:
Address longstanding safety issues and demonstrate improvement on the following: Plutonium Facility seismic safety; nuclear facility safety bases and controls; work planning and work control.

Completion Target:
This Measure has been achieved when LANS has completed the following by September 30, 2011:

A. 1. Addressed DNFSB Recommendation 09-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety,* by completing LANS FY 2011 commitments, described in 09-2 Implementation Plan, as transmitted to the DNFSB on July 13, 2010, by September 30, 2011.

A. 2. Submitted FY 2011 annual updates as defined in a NNSA concurred list, submitted final Implementation Plans, as required, within 30 days of NNSA approval and (as scheduled in the Implementation Plan) implemented annual updates to documented safety analyses (DSAs) and technical safety requirements (TSR). Active management of annual DSA update submittals and implementation of the approved updates will be used to demonstrate that the annual update process required by 10 CFR 830, *Nuclear Safety Management*, is implemented at the Los Alamos National Laboratory.

B. Improve activity-level work planning and work control for research and development activities, as well as other activities, as evidenced by:
   - Executing upon the *Moderate Hazard Research & Development Safety Improvements at Los Alamos National Laboratory Integrated Project Execution Plan*, dated April 15, 2010.
   - Achieve a satisfactory rating from a federal work planning and work control assessment, anticipated for the fourth quarter of FY 2011, with no major issues identified.

Deliverables:

1. Evidence demonstrating completion of each LANS deliverable from the in 09-2 Implementation Plan commitment list.
2. Evidence demonstrating completion of each safety basis annual update submittal; the NNSA acceptance action ; the implementation verification review (IVR) report or an implementation status report, demonstrating implementation is on schedule if implementation is not completed if required.
3. Evidence demonstrating completion of the actions taken in FY 2010 and FY 2011 to improve activity-level work planning and work control; the LANS effectiveness reviews and follow-up reviews that demonstrate that the

2. Initiate an effort to acquire and utilize Pu-242 to conduct small scale R&D in radiological facilities. *(Strategy 11.1)*
3. Develop a practical mechanism to ensure that TA-55 adequately supports plutonium and actinide science. *(Strategy 10.1)*
4. Maintain an institutional priority for plutonium science in the LDRD program. *(Strategy 9.1)*

Goal 3 – Increase workforce strength.

1. Develop an outline for updating the plutonium handbook, and an assessment of what resources (personnel and funding) it would take to complete the update. *(Strategy 13.1)*
2. Establish a baseline for plutonium and actinide science and engineering publications, and develop a mechanism for future year tracking. *(Strategy 13.1)*
3. Establish a technical working group series in plutonium and actinide science. *(Strategy 14.1)*
4. Host an external visiting scholar in plutonium or actinide science. *(Strategy 14.1)*
5. Develop a plutonium/actinide science visitor program and host four external lectures as part of the Seaborg lecture series. *(Strategy 14.1)*
6. Offer three "Plutonium Topics" summer lecture series as part of the Materials Science Summer Student Lecture series. *(Strategy 14.2)*
7. Complete a plutonium workforce gap analysis which identifies technical areas for focused recruitment. *(Strategy 14.2)*
8. Offer at least three summer Internships for targeted graduate students in plutonium science via the Seaborg Institute. *(Strategy 14.2)*

Completion Target:
This measure has been satisfied when the Contractor has completed the three goals and submitted summary reports demonstrating achievement by September 30, 2011.

Deliverables:

1. A summary report demonstrating completion of the actions taken in FY 2010 and FY 2011 to rejuvenate and strengthen plutonium science, to develop a practical mechanism for conducting plutonium science in PF-4.
2. A summary report demonstrating completion of actions taken in FY 2010 and FY 2011 to recapitalize the scientific infrastructure and establish the capability for casting alpha phase plutonium, and conducting small-scale R&D in radiological facilities using Pu-242.
3. A summary report demonstrating completion of the actions taken in FY 2010 and FY 2011 to increase workforce strength through visiting scholars, summer schools, working groups, new awards, etc.
4. A summary report demonstrating completion of the actions undertaken in FY 2010 and FY 2011 addressing areas of substantial collaboration with LLNL and external entities, onsite and remotely.
5. Provide deliverable updates to LASO at quarterly meetings and semi-annual updates to NNSA/DOE HQ.

Measure 18.3 Delivery of CMRR and NMSSUP II
(Award Term)

Expectation Statement:
LANS will accelerate and/or complete key Nuclear Materials Safeguards and Security Upgrades (NMSSUP) Phase II and CMRR milestones as well as integration and planning of the Pajarito Road corridor.

Completion Target:
This measure has been achieved when the Contractor has by September 30, 2011:

A. <u>NMSSUP2</u>

1. All Physical Construction is complete and accepted for the following subprojects: Utility Trunk, Utility Building and SWDS; North PIDADS; South PIDAS Enhancements and West Vehicle Access
   - Site conditions are returned to the desired endstate and associated temporary facilities, security compensatory measures, and construction impacts have been removed/remediated for the WVA.
   - Associated transition to Operations and Systems startup activities are complete and the security systems are operational for the WVA, UT/UB, and SWDS.

- Training requirements have been met and sufficient operators are in place. The MSA/AVCO will not be completed for the South PIDAS Enhancements.
- Sector 7, 17, and transitions physical construction are complete.

2. Entry Control Facilities sub-project is well underway.
   - All GFE equipment has been procured and delivered.
   - Associated PIDADS physical construction complete
   - Achieve at least a three (3) month Early Finish acceleration of the baseline ECF schedule activities (measured against the baseline as of September 20, 2011).

B. CMRR

- Actions necessary to support S-EIS alternatives development and position for infrastructure execution.
- Nuclear Facility design achieve planned maturity and schedule goals.
- Demonstrate acceleration of the RLUOB REI scheduled completion from FY 2013 to FY 2012.

Assumptions Specific to This Measure:

- CMRR provides project documentation to support a draft CMRR S-EIS for public review and final CMRR S-EIS..
- Transition sectors are assumed to be part of the associated NMSSUP2 subproject effort.
- CMRR interface points do not change/interfere with South PIDAS enhancements.

Measure 18.4 Reduce Site Nuclear Safety and Worker Safety Risks (Award Term)

Expectation Statement:
Address longstanding safety issues and demonstrate improvement on the following: Plutonium Facility seismic safety; nuclear facility safety bases and controls; work planning and work control.

Completion Target:
This Measure has been achieved when LANS has completed the following by September 30, 2011:

A. 1. Addressed DNFSB Recommendation 09-2, *Los Alamos National Laboratory Plutonium Facility Seismic Safety,* by completing LANS FY 2011 commitments, described in 09-2 Implementation Plan, as transmitted to the DNFSB on July 13, 2010, by September 30, 2011.

A. 2. Submitted FY 2011 annual updates as defined in a NNSA concurred list, submitted final Implementation Plans, as required, within 30 days of NNSA approval and (as scheduled in the Implementation Plan) implemented annual updates to documented safety analyses (DSAs) and technical safety requirements (TSR). Active management of annual DSA update submittals and implementation of the approved updates will be used to demonstrate that the annual update process required by 10 CFR 830, *Nuclear Safety Management*, is implemented at the Los Alamos National Laboratory.

B. Improve activity-level work planning and work control for research and development activities, as well as other activities, as evidenced by:
   - Executing upon the *Moderate Hazard Research & Development Safety Improvements at Los Alamos National Laboratory Integrated Project Execution Plan*, dated April 15, 2010.
   - Achieve a satisfactory rating from a federal work planning and work control assessment, anticipated for the fourth quarter of FY 2011, with no major issues identified.

Deliverables:

1. Evidence demonstrating completion of each LANS deliverable from the in 09-2 Implementation Plan commitment list.
2. Evidence demonstrating completion of each safety basis annual update submittal; the NNSA acceptance action ; the implementation verification review (IVR) report or an implementation status report, demonstrating implementation is on schedule if implementation is not completed if required.
3. Evidence demonstrating completion of the actions taken in FY 2010 and FY 2011 to improve activity-level work planning and work control; the LANS effectiveness reviews and follow-up reviews that demonstrate that the improvements are implemented and sustained; the federal assessment, constituting federal acceptance of these improvements with no major issues identified.

Tab 47 - Mello aff 3, par 19, ref 21a

CHEMISTRY
METALLURGY
RESEARCH
REPLACEMENT

CMRR Public Meeting, September 23, 2009

Volume 8

Los Alamos National Laboratory
Los Alamos, New Mexico

Los Alamos
NATIONAL LABORATORY
EST. 1943

National Nuclear Security Administration

LA-UR 10-00676

done that too. And keep working on the design, essentially, to maintain continuity of the design teams. And then, the budget for '09 was 97.2 million. For '10, the House [US House of Representatives] mark is at 55 million. We're at 97 million in the Senate [US Senate] version. I don't think the two committees have joined yet to reach a conference committee decision, um, because I think Congress has been a little busy lately. So the direction has not changed substantially to the project.

[RICK HOLMES]
Next chart.

[LANL Slide 11]
[RICK HOLMES]
Kinda the highlight schedule. For those of you that haven't seen the history of the project, it's been around for a very long time. Um, a couple of things that have been done is the Congressional Commission on Strategic Posture, sometimes known as the Perry Commission Report, is out there and available. Uh, the Nuclear Posture Review is now planned. We're hearing sometime in February. And we don't control any of that. It's, y'know, the administration's document. Um, and I'll talk about the details of the rad lab schedule and how we get into, ready for radiological operations in that building, when we get to the REI [RLUOB equipment installation] part.

[RICK HOLMES]
Next chart.

[LANL Slide 12]
[RICK HOLMES]
Go ahead

[LANL Slide 13]
[RICK HOLMES]
So, the rad lab itself is essentially three stories of offices. So the fourth floor is the training center, which is intended to replace the training center that's located currently downtown. It will have a couple of simulated laboratories in it, meaning there's some equipment that people can get, get their training on. There are two full levels of office spaces: some hard-walled offices; some are cubicles.

[RICK HOLMES]
The first level has all of the radiological labs in it, in 26 modules. It's scope has not changed in terms of that. And in below grade in the basement, with the mezzanine in it, is all the utility infrastructure: the ventilation systems, etcetera, to run the laboratory, er run, run the building. Adjacent to the rad lab itself is a centralized utilities building. And that building provides for certain commodities: hot water, chilled water, those types of things that support the rad lab operations.

[RICK HOLMES]

Tab 47 - Mello aff 3, par 19, ref 21b

9. Required D&D Information

As directed by the DOE Acquisition Executive at CMRR CD-0, NNSA and LANL developed a pre-conceptual cost and schedule range for the D&D requirements of the existing CMR Building located at TA-3 during the CMRR conceptual design. The initial pre-conceptual cost estimate range for D&D of the CMR Building is approximately $200,000,000 - $350,000,000 (un-escalated FY 2004 dollars) with an associated schedule estimate range of 4-5 years. This information was presented as part of CMRR CD-1 per Secretarial direction issued at CD-0.

During the 3rd Quarter of FY 2005, the D&D of the existing CMR facility received CD-0 in conjunction with CMRR CD-1 approval. Current Future Years Nuclear Security Program/Integrated Construction Program Plan (FYNSP/ICPP) funding profiles do not include the funding for the D&D of the CMR Facility. NNSA will not initiate CMR D&D activities until completion and operational start-up of the CMRR Nuclear Facility, currently projected to be operational well after the FYNSP budget planning window. As such, budget formulation for CMR D&D is premature for the FY 2011 budget submission. The inclusion of the D&D CMR Facility budget will occur upon the establishment of a project number and update of the FYNSP/ICPP in out year budget cycles.

The CMR D&D commitment is reflected in this CPDS for completeness. However, as planning for this D&D activity matures, NNSA may elect to enable this effort as a separate project, execute it as an element of a wider project or program for a portfolio of D&D activities at LANL, or bundle it with other, yet undefined activities.

Area	Gross Square Feet (gsf)
TA-55-400 (Radiological Laboratory & Office Building) TA-55-440 (Central Utility Building)	187,127 20,998
TA-55-500 (Security Category I/Hazard Category II Nuclear Facility)	406,000 (beneficial occupancy post FY 2018)
TA-3, Building 29 (CMR)	(571,458)
LANL “banked excess” necessary to offset one-for-one requirement	42,667

Name and site location of existing facility to be replaced: CMR (TA-3, Building 29)

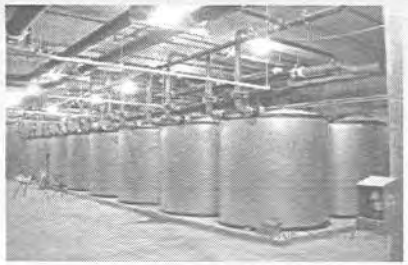
When originally conceptualized, the replacement facilities for CMR, the RLUOB and NF, were thought to result in a significantly smaller space than the CMR facilities being replaced. However, owing to needs to meet modern health, waste, safety, and security functions, the combined space for CMRR is now expected to exceed the space for CMR.

CMRR has incorporated the NNSA Fiscal Year Banking of Excess Facilities Elimination, New Construction and Net Banked Square Footage reporting process that documents, through the DOE Facilities Information Management System (FIMS), the data associated with new construction added by the RLUOB and the NF. The new construction square footage is accounted for once beneficial occupancy is received and is subsequently offset with LANL “banked excess” additional D&D space to meet the “one-for-one” requirement within the FY 2002 Energy and Water and Water Development Appropriations Bill conference report (107-258). Given planned new construction (including CMRR) at LANL and planned excess facility reductions, the excess program is projecting it will have banked well

Chemistry and Metallurgy Research Replacement (CMRR)

Construction

Tab 47 - Mello aff 3, par 19, ref 21c



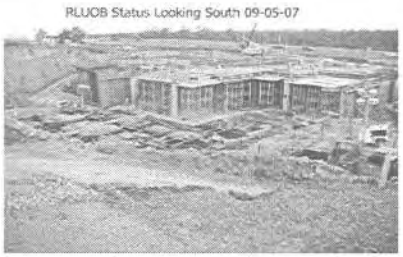
RLUOB Construction Scope

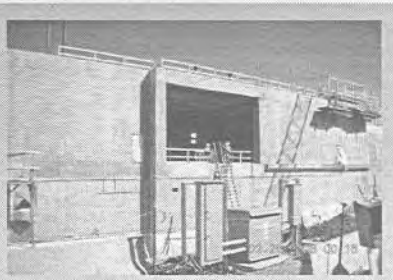
Laboratory - 19,500 sf of Radiological Space

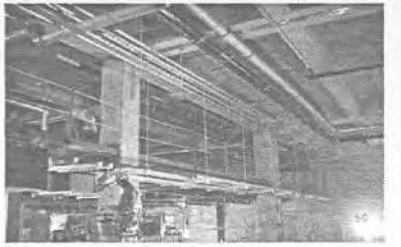
- Capability for 26 Lab Modules
- Laboratory spaces are designed to be flexible and modular
- 4 Lab Modules fitted out in ACCLP contract

Centralized Utility Building - (RLUOB and Nuclear Facility)

- Skid-mounted water treatment system
- Skid-mounted unit to produce de-ionized water
- Packaged boilers to produce heating water
- Chillers to produce cooling water
- Thermal energy (ice) storage unit
- A skid-mounted compressor system to produce compressed air
- Standard electrical power with diesel generated back up supply
- Specialty Gases: argon, helium, nitrogen, regen, & P-10







LALP-08-065

Chemistry and Metallurgy Research Replacement (CMRR)

Construction

RLUOB Construction Scope

Office space for 350 workers

Training Facility and 46 Trainer offices

- 4 classrooms capable of holding 25 trainees
- Space for 2 simulated Labs

Facility Incident Command Center & Emergency Response Capabilities

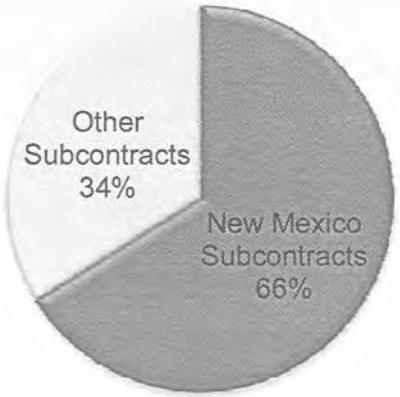
Facility Operations Center

Construction Bulk Commodities

Structural Concrete	16,800 cubic yards
Structural Steel	1,010 tons SF: incl. rebar? probably.
Electrical Conduit and Raceway	197,000 linear feet
Electrical Wire and Cable	412,000 linear feet
Process Piping and Tubing	50,000 linear feet
Sheet Metal Duct Work	8,000 linear feet

New Mexico Procurements vs.
other CMRR RLUOB ACCLP Procurements

New Mexico Subcontracts vs.
other CMRR RLUOB ACCLP Subcontracts



Tab 47 - Mello aff 3, par 19, ref 21d

CMRR Project

CMRR Project: An Overview

The Chemistry and Metallurgy Research Replacement (CMRR) Project primarily supports Defense Program activities at Los Alamos National Laboratory (LANL). Costing $745M to $975M over 8 to 12 years, construction is planned in three phases:

A Radiological Laboratory Utility Office Building (RLUOB)

B Special facilities equipment, including long-lead equipment and instrumentation

C Nuclear Laboratory Facility

The CMRR Project will provide the capabilities the National Nuclear Security Administration (NNSA) and LANL need to continue the nuclear mission to maintain and certify the US nuclear stockpile through work in the following areas:

- Pit manufacturing, surveillance, and disassembly
- Enhanced surveillance
- Milliwatt radioisotope thermoelectric generator surveillance
- Retired stockpile component processing
- Aboveground subcritical experiments
- Special nuclear material readiness and materials storage
- Advanced design/production technologies
- Dynamic materials properties
- Material certification in a hostile environment
- Arms control and nonproliferation
- Advanced nuclear fuels

These analytical chemistry, materials characterization, and actinide research and development capabilities, currently housed in the 550,000 sq ft CMR building, will move to the new CMRR facilities as they are completed.

Phase A:

Radiological Laboratory Utility Office Building (RLUOB)

Phase B:

Special facilities equipment, including long-lead equipment and instrumentation

Phase C:

Nuclear Laboratory Facility

Phase A: Radiological Laboratory Utility Office Building

The RLUOB will house radiological laboratory space; a training center, 4 classrooms, and 2 nonradiological training simulation labs; a utility building that supports all CMRR Project facilities; and office space to support 350 personnel in segregated (cleared and uncleared) areas.

An Entrance Control Facility will connect a tunnel from the RLUOB to the Nuclear Laboratory Facility.

The RLUOB also will have a Facility Incident Command Center, an operations center, and space for future support of the existing Technical Area 55 Plutonium Facility, PF-4.

A design-build contract, a procurement method already successfully demonstrated at LANL, was issued to Austin Commercial Contractors, LP, of Dallas, TX, in November 2005.

The proposed RLUOB total project cost performance baseline is $164M (contract life is 1095 calendar days). Approximately 300 construction workers will be employed during the RLUOB contract.

Phases B and C

Preliminary design work is under way on Phases B and C. Construction work for Phase C is scheduled to begin in 2008 and is expected to be complete by 2013.

Tab 48 - Mello Aff #1, par. 65, ref 2:
http://appropriations.house.gov/index.php?option=com_content&view=article&id=237&Itemid=12

110TH CONGRESS *1st Session* } HOUSE OF REPRESENTATIVES { REPORT 110–185

ENERGY AND WATER DEVELOPMENT APPROPRIATIONS BILL, 2008

JUNE 11, 2007.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. VISCLOSKY, from the Committee on Appropriations, submitted the following

R E P O R T

together with

ADDITIONAL VIEWS

[To accompany H.R. 2641]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making appropriations for energy and water development for the fiscal year ending September 30, 2008, and for other purposes.

INDEX TO BILL AND REPORT

ditional funding to restore the baseline Uranium Processing Facility (UPF) PED funding that was reprogrammed in fiscal year 2007 to fund other purposes by the NNSA. The Committee supports the facility and material consolidation activities at the Y–12 Plant.

Project 04–D–125, Chemistry and Metallurgy Research Facility Replacement (CMRR), LANL.—The recommendation provides no funds for the CMRR project, a decrease of $95,586,000 from the budget request. The Committee direction halts the construction activity at the CMRR facility. Proceeding with the CMRR project as currently designed will strongly prejudice any nuclear complex transformation plan. The CMRR facility has no coherent mission to justify it unless the decision is made to begin an aggressive new nuclear warhead design and pit production mission at Los Alamos National Laboratory. The NNSA is directed to develop a long-term plan to maintain the nation's nuclear stockpile requirements that does not assume an a priori case for the current program. Production capabilities proposed in the CMRR should be located at the future production sites identified in a detailed complex transformation plan that supports the long-term stockpile requirements. The Committee is concerned the NNSA is proceeding with large expenditures for this project while there are significant unresolved issues, and recommends the fiscal year 2007 funding be held in reserve. Although the NNSA claims the Nuclear Facility Phase 3 of the project is under review, the Committee notes the Laboratory excavated 90,000 cubic yards of soil at the construction site where the CMRR Phase 3 Nuclear Facility is proposed to be built. The Committee also notes the Department's CMRR acquisition strategy combines Critical Decision 2 (approval of performance baseline) and Critical Decision 3 (approval to start construction) under DOE Order 413.3A on project management. The Committee does not support construction projects that fail to strictly adhere to DOE Order 413.3 requirements by abbreviating the process.

Project 04–D–128, TA–18 mission relocation project, Los Alamos National Laboratory.—The Committee recommends $14,455,000, a decrease of $15,000,000 from the budget request. The Department of Energy's Inspector General conducted an audit on the NNSA's ability to maintain capability of the TA–18 mission to conduct nuclear criticality experiments during the transfer of the special nuclear materials from the TA–18 facility at Los Alamos National Laboratory to the Device Assembly Facility (DAF) at the Nevada Test Site. Although the NNSA goal was to restore interim criticality operations as early as 2005, the current NNSA plan delays transfer and reestablishment of capability at DAF until 2010 at the earliest. The Department recognized the security requirement to remove the SNM from TA–18 in 1999; however, according to the DOE IG, it will now take over a decade for the NNSA to complete the relocation of the criticality experiments mission. While the Committee is disappointed at the failure of the NNSA and Los Alamos National Laboratory to complete the SNM consolidation activity, the funding reduction reflects the schedule slip and reallocation of funding for higher priorities.

08-D-701, Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP) Phase II, Los Alamos National Laboratory (LANL), Los Alamos, New Mexico
Project Data Sheet is for Construction

Tab 49 - Mello Aff #2, Par 7

1. Significant Changes

The most recent DOE O 413.3A approved Critical Decisions (CD) is CD-3B Approve Start of Construction that was approved on December 16, 2009 with a Total Project Cost (TPC) of $245,166,000 and CD-4 of January 2013.

A Federal Project Director at the appropriate level has been assigned to this project.

This PDS is an update of FY 2009 PDS. The performance baseline scope does not include the Technical Area Isolation Zone and the Airborne Mitigation System. These two items that were included in the preliminary scope were found to be no longer essential.

2. Design, Construction, and D&D Schedule

(fiscal quarter or date)

	CD-0	CD-1	PED Complete	CD-2	CD-3	CD-4	D&D Start	D&D Complete
FY 2008	4QFY2002	2QFY2007	1QFY2008	1QFY2008	2QFY2008	3QFY2012	N/A	N/A
FY 2009	4QFY2003	1QFY2007	1QFY2008	2QFY2008	4QFY2008	4QFY2011	N/A	N/A
FY 2011	08/25/2003	05/30/2008	09/30/2009	06/23/2009	06/23/2009	2QFY2013	N/A	N/A

CD-0 – Approve Mission Need
CD-1 – Approve Alternative Selection and Cost Range
CD-2 – Approve Performance Baseline
CD-3 – Approve Start of Construction
CD-4 – Approve Start of Operations or Project Closeout
D&D Start – Start of Demolition & Decontamination (D&D) work
D&D Complete – Completion of D&D work

	CD-3A	CD-3B
FY 2009	06/23/2009	
FY 2010		12/16/2009

3. Baseline and Validation Status

(dollars in thousands)

	TEC, PED	TEC, Construction	TEC, Total	OPC Except D&D	OPC, D&D	OPC, Total	TPC
FY 2008			214,755	25,245	N/A		240,000
FY 2009	43,094	170,715	213,809	25,245	N/A	25,245	239,054[a]
FY 2011	43,094	176,822	219,916	25,250	N/A	25,250	245,166

[a] The FY 2008 appropriated funding was reduced based on the rescission of 0.91 percent ($71,000) and use of prior year balances from construction projects ($82,000) in accordance with the FY 2008 Consolidated Appropriations Act, (P.L. 110-161).

4. Project Description, Justification, and Scope

Project Description

The project is being conducted in accordance with the project management requirements in DOE O 413.3A and DOE M 413.3-1, Program and Project Management for the Acquisition of Capital Assets, and all appropriate project management requirements have been met.

The Nuclear Materials Safeguards and Security Upgrades Project (NMSSUP) Phase II will support the viability of stockpile management and other current missions carried out in Technical Area (TA)-55 at the Los Alamos National Laboratory (LANL) by providing an effective, robust physical security system to address the core essential physical security systems, protection strategies, and security requirements.

The LANL nuclear missions, as they currently exist and as they are planned in the future, require a reliable safeguards and security system to assure the protection and control of special nuclear materials (SNM), classified matter, and NNSA property. The nuclear materials operation at TA-55 involves the ability to securely store, move, process, and track nuclear materials that are attractive to the adversaries both in terms of the quantity of materials and the forms. The NMSSUP Phase II project plays a key role in the support of this mission by replacing or improving the aging exterior physical security systems and installing enhanced systems to support a new protection strategy for the TA-55 site.

The primary components of the project include, at a minimum:

Perimeter Intrusion Detection, Assessment, and Delay System (PIDADS)
East Vehicle and Pedestrian Entry Control Facility (ECF)
Utility Infrastructure (to support the items above)
West Vehicle Access (WVA)

Tab 49 - Mello Aff #2 Par 7

soil stabilization. In the following years, both plants will likely be used to supply structural concrete for the CMRR-NF.

The TA-48/55 concrete plant action has previously been evaluated for NEPA compliance and cultural and biological resources impacts, and actions have been identified and will be followed to avoid impacts to nearby cultural and biological resources. NNSA determined that the TA-48/55 concrete plant action was adequately considered in the CMRR EIS impact analyses and that no further NEPA analysis was necessary. The use of a similar site at TA-63/46 has also been previously evaluated for NEPA compliance and cultural and biological resources impacts, and actions have been identified and will be followed to avoid impacts to nearby cultural and biological resources. NNSA determined that the TA-63/46 concrete plant action was eligible for categorical exclusion from the need to prepare any further NEPA impact analyses documents (10 CFR 1021, Appendix B1.15; DOE 2008a; LANL 2008c; LANL 2007d).

- **Move NMSSUP Security Perimeter Fence (Planned Action)**
  Responding to an NNSA directive, the CMRR Project will coordinate with NMSSUP to temporarily relocate a portion of the TA-55 Perimeter Intrusion Detection Assessment and Delay System (PIDADS) fence during the CMRR-NF construction activities. This action is needed to allow access to the TA-48/55 laydown areas and the CMRR-NF construction site while maintaining a security perimeter during construction. In addition, this action creates space to allow the Project to provide construction craft worker break trailers, a nurses station, and delivery access for construction materials. The CMRR Project will move an estimated 600 feet of the south PIDADS fence northward up to 200 feet. In the final constructed configuration, the PIDADS fence will be to the south and east sides of the CMRR-NF, thus enclosing the CMRR-NF within a special security perimeter. The area affected by this action is included in the TA-48/55 laydown areas discussed above.

  The relocation of the NMSSUP Security Perimeter Fence action has previously been evaluated for NEPA compliance and cultural and biological resources impacts, and actions have been identified and will be followed to avoid impacts to nearby cultural and biological resources. Although relocation of the PIDADS fence was not specified in the CMRR EIS impact analyses for the laydown area, the area affected by this action was analyzed in the CMRR EIS for impacts associated with using the site for CMRR Project construction and this included the extension of the existing PIDADS to enclose the CMRR-NF. NNSA determined that the similar temporary relocation of the NMSSUP Security Perimeter Fence was eligible for categorical exclusion from the need to prepare any further NEPA impact analyses documents (CFR 1021, Appendix B1.15; DOE 2010d; DOE 2008a).

- **Temporary Power Upgrades (TA-55 to TA-05) (Proposed Action)**
  The CMRR Project will upgrade temporary power services for the CMRR-NF construction site and support activities. The Project proposes to bring in temporary power along a route from the CMRR-NF site (at TA-55) along Pecos

Tab 50 - Mello Aff#1, Par 74:
http://www.cfo.doe.gov/budget/11budget/Content/Volume%201.pdf

	(dollars in thousands)		
	Appropriations	Obligations	Costs
OPC			
FY 2009	3,079	3,079	5,602
FY 2010	10,700	10,700	8,177
FY 2011	14,100	14,100	14,100
FY 2012	14,123	14,123	14,123
FY 2013	4,498	4,498	4,498
Total, OPC	46,500	46,500	46,500
Total Project Cost (TPC)			
FY 2007	11,489	11,489	2,959
FY 2008	21,613	21,613	9,410
FY 2009	8,077	8,077	10,672
FY 2010	50,700	50,700	68,177
FY 2011	73,100	73,100	69,561
FY 2012	29,923	29,923	34,123
FY 2013	4,498	4,498	4,498
Total, TPC	199,400	199,400	199,400

Nuclear Facility

	(dollars in thousands)		
	Appropriations	Obligations	Costs
Total Estimated Cost (TEC)			
PED			
FY 2004	9,500	0	0
FY 2005	13,567	23,067	1,848
FY 2006	27,910	27,910	19,147
FY 2007	14,161	14,161	27,213
FY 2008	0	0	15,079
FY 2009	0	0	-329
FY 2010	0	0	2,180
Total, PED (PED 03-D-103-01)	65,138	65,138	65,138
Final Design			
FY 2008	39,406	39,406	15,454
FY 2009	92,196	92,196	45,972
FY 2010	57,000	57,000	75,000
FY 2011	166,000	166,000	104,500
FY 2012	102,800	102,800	102,800
FY 2013	60,000	60,000	112,375
Total, Final Design (TEC 04-D-125)	TBD	TBD	TBD
Total, Design	TBD	TBD	TBD
Construction			
FY 2011	0	0	0
FY 2012	186,400	186,400	155,200
FY 2013	240,000	240,000	187,625
FY 2014	299,961	299,961	300,000
FY 2015	300,000	300,000	300,000
FY 2016	TBD	TBD	TBD
FY 2017	TBD	TBD	TBD
Total, Construction (TEC 04-D-125)	TBD	TBD	TBD

Tab 51

operations scheduled to begin in 2013.

23. Once the SEIS process is completed, if NNSA decides to proceed with construction of the proposed CMRR-NF, the building would become operational in 2022.

Importance of Continuing the CMRR Design Process

24. Compliance with Plaintiff's request to "halt any and all design activities, make no further contractual obligations, and seek no further funding" for the proposed CMRR Project would involve firing most, if not all, of the 283 LANL and contract staff employed on the CMRR-NF Project in a time of economic hardship.

25. Continuing the design process on its current track allows NNSA to advance its national security mission to manage the nation's nuclear weapons and further nuclear nonproliferation efforts. Between October 2010 and June 2011, the expected SEIS period, the overall design is expected to advance by only about 15 percent. The design activities during this period will enhance

our understanding of the requirements for the project and will save a substantial amount of time and taxpayer money in the event that construction ultimately goes forward. NNSA will not undertake any excavation or grading activities until the SEIS process is completed.

26. I swear under the penalty of perjury that the foregoing is true and correct.

Dated this 4th day of October, 2010 in Washington, D.C.

DONALD L. COOK
Deputy Administrator for Defense Programs

DOE F 1325.8
(8-89)

United States Government **Department of Energy**

memorandum

DATE: June 17, 2003 Tab 52

REPLY TO ATTN OF: Office of NEPA Policy and Compliance (B. Mills, 202-586-8267)

SUBJECT: Guidance Regarding Actions That May Proceed During the National Environmental Policy Act (NEPA) Process: Interim Actions

TO: Secretarial Officers
Heads of Field Organizations

The Department of Energy (DOE) frequently needs to decide whether an action that is within the scope of an ongoing environmental impact statement (EIS) may proceed before a record of decision (ROD) is issued. An action within the scope of an EIS that is taken before a ROD is commonly referred to as an "interim action." DOE may propose to take the action before a ROD to reduce risk or mitigate adverse impacts to human health and the environment or reduce program costs. Indeed, interim actions to respond to an immediate need are often permissible and should be pursued, as appropriate. This issue arises most frequently with respect to actions that fall within the scope of a programmatic or site-wide EIS.

In preparing the attached guidance, we consulted with the Office of General Counsel, and we considered suggestions made by NEPA Compliance Officers. We prepared this guidance to help respond to the concern that compliance with NEPA could become the reason for near-term hazards to go unmitigated, as expressed in the February 2002 Environmental Management Top-To-Bottom Review. The guidance is based on criteria established by the Council on Environmental Quality in its regulations implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508), DOE's NEPA implementing regulations (10 CFR Part 1021), which rely on those criteria, and DOE Order 451.1B, *National Environmental Policy Act Compliance Program*. Examples of the types of actions that may proceed as interim actions and a flow diagram summarizing key aspects of the guidance are provided.

If you have any questions regarding this guidance or its application to particular proposed actions, please direct them to Carol Borgstrom, Director, Office of NEPA Policy and Compliance (EH-42), at 202-586-4600.

Beverly A. Cook

Beverly A. Cook
Assistant Secretary
Environment, Safety and Health

Attachment
cc: William Dennison, GC-51
NEPA Compliance Officers

Tab 52 - Mello aff 3, par 93, ref 77

Guidance Regarding Actions That May Proceed
During the National Environmental Policy Act (NEPA) Process:
Interim Actions

The Department of Energy (DOE) frequently needs to decide whether an action that is within the scope of an ongoing environmental impact statement (EIS) may proceed before a record of decision (ROD) is issued. An action within the scope of an EIS that is taken before a ROD is commonly referred to as an "interim action." DOE may propose to take an action before a ROD to reduce risk or mitigate adverse impacts to human health and the environment or to reduce program costs. Indeed, interim actions to respond to an immediate need are often permissible and should be pursued, as appropriate. This issue arises most frequently with respect to actions that fall within the scope of a programmatic or site-wide EIS.

The following guidance is based on criteria established by the Council on Environmental Quality (CEQ) in its regulations implementing the procedural provisions of NEPA (40 CFR Parts 1500-1508; 40 CFR 1506.1 attached as Exhibit 1), DOE's NEPA implementing regulations (10 CFR 1021.104 and 1021.211, attached as Exhibit 2, which define interim action and incorporate the CEQ criteria), and DOE Order 451.1B, *National Environmental Policy Act Compliance Program*. This guidance does not create any additional requirements beyond those in these sources.

To provide assistance in determining whether an action within the scope of an EIS may be taken before a ROD, the guidance reviews applicable requirements, gives examples of the types of actions that may proceed as interim actions, describes case studies, and outlines the steps in the EIS process for interim actions.

Requirements for project-specific and programmatic EISs are distinguished where appropriate. In brief, for a project-specific EIS, an interim action must be one that would not adversely affect the environment nor limit the choice of reasonable alternatives. For a programmatic EIS, an EIS must be prepared for a proposed interim action that has potential for significant environmental effects, and the interim action must be one that would neither affect nor be affected by the proposed program. In general, an action of relatively limited scope or scale that would have only local utility normally could be taken as an interim action before a ROD.

CEQ Criteria for Interim Actions

CEQ's criteria for interim actions (at 40 CFR 1506.1) are best understood in the context of the purpose of an EIS. As stated in the CEQ regulations, the primary purpose of an EIS is to serve as an action-forcing device to ensure that the policies and goals defined in NEPA are infused into an agency's

ongoing programs and actions (40 CFR 1502.1). An EIS is more than a disclosure document; it is to be used by decision makers in conjunction with other relevant information to plan actions and make decisions.

At 40 CFR 1502.2, the CEQ regulations state that:

> "(f) Agencies shall not commit resources prejudicing selection of alternatives before making a final decision ([Section] 1506.1).
>
> (g) Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made" (emphasis added).

CEQ established separate criteria for project-specific EISs in Section 1506.1(a) and for required programmatic EISs in Section 1506.1(c), as discussed below.[1] Both sets of criteria address, in part, the need to avoid improper segmentation, in particular with regard to connected actions, e.g., actions that are interdependent parts of a larger action and depend on the larger action for justification (in 40 CFR 1508.25(a)).

Application of CEQ Criteria to DOE Actions Covered by Project-specific EISs

[1]In addition, Section 1506.1(b) states an agency's responsibility to ensure that non-Federal applicants meet the objectives of 40 CFR 1506.1(a), and Section 1506.1(d) allows limited activities (e.g., plans, designs) specifically in support of Federal, State or local permit applications.

CEQ also discusses the Section 1506.1 criteria in two items in Forty Most Asked Questions Concerning CEQ's NEPA Regulations (51 FR 15618; April 25, 1986). In item 10a, CEQ reiterates the criteria in 1506.1(a) and (c). In item 11a, CEQ provides examples of actions an agency could take under 40 CFR 1506.1(b) to ensure that the objectives and procedures of NEPA are met when an applicant proposes to take an invalid interim action within the agency's jurisdiction; the agency's actions could range from negotiation to non-approval of the permit application.

Under Section 1506.1(a), until an agency issues a ROD[2], no action concerning the proposal can be taken that would:

(1) Have an adverse environmental impact; or

(2) Limit the choice of reasonable alternatives.

Many types of actions could be interim actions to a project-specific EIS. In general, project managers may proceed with conceptual design (under DOE O 413.3, *Program and Project Management for the Acquisition of Capital Assets*) and feasibility studies in support of a project because these activities meet both criteria of Section 1506.1(a). Site characterization activities to support a meaningful analysis of the environmental impacts of the proposed project also generally may be undertaken. Small scale corrective actions under the Resource Conservation and Recovery Act or installing fences to enhance security represent other classes of actions that usually may proceed under the criteria of Section 1506.1(a).

Although the activities discussed in the paragraph above would take place while a more extensive action (e.g., a waste management or nuclear materials action) is being evaluated in its associated ElS, the activities normally are unlikely to involve adverse environmental impacts or limit the choice of reasonable alternatives for the final action. An action that is not within the scope of the EIS, such as ongoing site operations, would not be constrained by the criteria for an interim action and could proceed.

In the context of this guidance "adverse environmental impact" means a negative environmental impact at such a level that an element of the human environment is impaired or damaged. Judgment of whether the level of negative impact is high enough to impair or damage depends on the situation and the resource. For some resources, adverse impact is defined in the statute protecting the resource or in implementing regulations.

[2]The CEQ regulations address criteria for interim actions during the preparation of an EIS only. A project or program for which an environmental assessment (EA) is prepared is normally smaller in scope than a project or program for which an EIS is prepared, and the EA process is shorter in duration than the EIS process. Thus the question of interim actions is less likely to arise during EA preparation. However, EAs, like EISs, are intended to inform decisions and therefore, normally should be completed before an action is taken. In those exceptional cases where part of a proposed action needs to proceed while the EA is being prepared, DOE managers should be mindful of the principles enunciated by the Section 1506.1(a) criteria, i.e., that the activity does not have an adverse environmental impact nor does it limit the choice of reasonable alternatives. Early and continued consideration of the Section 1506.1 criteria should lead to better project and program planning and decisions, regardless of whether an EA or an EIS is being prepared.

- For example, under the implementing regulations for the National Historic Preservation Act, "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." [36 CFR 800.5(a)(1)]

- Under the implementing regulations for the Endangered Species Act, an adverse impact would be a "take" (of an endangered or threatened species or a species proposed for listing as endangered or threatened), which means "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." [50 CFR 10.12] With regard to critical habitat, the implementing regulations define destruction or adverse modification to mean "a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species." [50 CFR 402.02]

NEPA documentation is not normally needed for permissible interim actions under project-specific EISs. See Exhibit 3 for a diagram of steps in the NEPA process for interim actions for project-specific EISs. Valid interim actions associated with project-specific EISs should be minor in scope (as discussed above), not require analysis to show that the criteria are met, and be similar in nature to categorical exclusions. That a proposed interim action is similar in nature to a categorical exclusion does not in itself indicate that it is a valid interim action. As with the application of categorical exclusions or many other project or programmatic decisions, a record of interim action determination is recommended.

Proceeding with detailed design under DOE O 413.3, *Program and Project Management for the Acquisition of Capital Assets*, before the NEPA review process is completed (in contrast to conceptual design noted above) is normally not appropriate because the choice of alternatives might be limited by premature commitment of resources to the proposed project and by the resulting schedule advantage relative to reasonable alternatives. For example, detailed design for containers that could only be transported via rail may prejudice consideration of truck or barge transport as alternatives. Concern about limiting the choice of reasonable alternatives is the basis for the DOE policy, expressed in the DOE NEPA regulations at 10 CFR 1021.210(b), that NEPA review normally should be completed before deciding to start detailed design.[3]

[3] Note, too, that DOE O 413.3 similarly provides for NEPA documentation to be completed before critical decision-2 (detailed design). Conceptual design and detailed design are defined under this DOE Order.

Application of CEQ Criteria to DOE Actions Covered by Programmatic EISs

Section 1506.1(c) states "While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:

(1) Is justified independently of the program;

(2) Is itself accompanied by an adequate environmental impact statement[4]; and

(3) Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives."

In applying the first criterion ("independent justification"), DOE needs to determine that the proposed interim action could be undertaken irrespective of whether or how the program goes forward.

- In most cases in which DOE is obligated by law to carry out the proposed interim action (e.g., usually cases involving compliance with environmental requirements), DOE would be able to demonstrate independent justification by showing that no reasonably foreseeable decision based on the programmatic EIS would affect the proposed interim action.

- In cases that involve an existing facility that is within the scope of a programmatic EIS in preparation, DOE would need to establish, for example, that a proposed interim action involving a change in the facility (structure or operation) is needed to allow the facility to fulfill its existing mission before decisions can be made and implemented on the basis of the programmatic EIS. If so, a near-term modification would be permissible because it would be necessary for the ongoing program, regardless of how decisions based on the programmatic EIS may affect the future of the facility or the ongoing program.

[4]Section1506.1(c) speaks in terms of interim actions that require an EIS ("major Federal actions"), and thus the criteria of that section do not specifically apply to interim actions to which a categorical exclusion has been applied or for which an environmental assessment and finding of no significant impact have been issued. However, proceeding with these kinds of interim actions when they do not meet the first and third criteria of section 1506.1(c) could present a risk that DOE could be found to be impermissibly segmenting the programmatic action. Therefore, it is recommended that DOE managers consider these criteria and determine that the interim action is independently justified and will not prejudice the ultimate decision on the program before proceeding with the action.

The second criterion indicates that an EIS must be prepared for a proposed interim action that has potential for significant environmental impact.

In applying the third criterion ("non-prejudicial to programmatic decision"), DOE needs to determine whether a proposed interim action would tend to determine subsequent programmatic development or limit programmatic alternatives, as these types of actions could not be taken until a ROD were issued.

- In general, interim actions of relatively limited scope or scale that have only local utility are unlikely to prejudice programmatic development or decisions. A number of related interim actions, however, when considered collectively could unduly influence programmatic decision-making. For example, proceeding with a number of decentralized waste treatment projects could prejudice the choice of programmatic options involving centralized treatment.

- In the case of a site-wide EIS[5], ongoing site operations are not considered interim actions and may continue. Ongoing site operations are considered under No Action.

See Exhibit 3 for a diagram of steps in the NEPA review process for interim actions for programmatic EISs.

Case Studies of the NEPA Process for Interim Actions to Programmatic EISs

A proposed interim action satisfies criteria (1) and (3) in Section 1506.1(c) when the action neither is affected by nor affects the program. An example of such an interim action was the proposed disposal of a limited quantity of mixed-waste from DOE and other Federal facilities at the Nevada Test Site (NTS) while mixed-waste disposal approaches were being considered system-wide in DOE's *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste* (DOE/EIS-0200, May 1997). The interim action was proposed to provide for short-term waste disposal needs and was judged appropriate because its scope was constrained by limiting the volume of waste to be disposed of and the period over which disposal would occur. No decision based on the Waste Management Programmatic EIS was foreseen to be in conflict with the interim decision for waste disposal at NTS. Likewise, because the interim action would not require a large capital expenditure, the interim action would not limit subsequent development at NTS or alternative sites, nor would it limit the choice of programmatic alternatives considered. Criterion (2) in Section 1506.1(c) was met by a site-wide EIS for NTS (*Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations*

[5] DOE considers site-wide NEPA reviews to be programmatic in nature (although site-wide EISs are not necessarily "required programmatic EISs" within the meaning of Section 1506.1(c)).

in the State of Nevada, DOE/EIS-0243, August 1996) that adequately analyzed past, present, and reasonably foreseeable future mixed-waste disposal activities at the site.

As another example, in April 1996, a U.S. District Court ruled that DOE could proceed with a new major nuclear defense program facility, the Dual Axis Radiographic Hydrodynamic Test facility, at the Los Alamos National Laboratory as an interim action (based on a ROD for the project-specific EIS, *Final Environmental Impact Statement (EIS), Dual Axis Radiographic Hydrodynamic Test Facility*, DOE/EIS-0228, May 1995) while two programmatic EISs were being prepared (*Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management*, DOE/EIS-0236, September 1996; *Site-Wide Environmental Impact Statement for Continued Operation of the Los Alamos National Laboratory*, DOE/EIS-0238, January 1999). In considering the criteria for valid interim actions, the Court found that DOE had adequately demonstrated that the new facility would be useful notwithstanding the range of alternatives considered in the two programmatic EISs.

Interim Action Determination

The preceding guidance describes the key considerations necessary to determine whether an action that is within the scope of an ongoing NEPA review may proceed as an interim action. Under DOE's NEPA Order, 451.1B, Section 5.a.(12), Secretarial Officers and Heads of Field Organizations have the responsibility to determine whether an interim action is clearly allowable under DOE's NEPA regulations and should factor these considerations into a project's planning process. When it is not clear whether an interim action can proceed, a Secretarial Officer or Head of Field Organization is to provide the Assistant Secretary for Environment, Safety and Health (EH-1) with a recommendation for a determination, and EH-1 will decide, in consultation with the manager, whether the interim action may be taken. The exception to this is that the Administrator, National Nuclear Security Administration (NNSA), makes all determinations concerning NNSA interim actions, consulting with EH-1, as appropriate (DOE O 451.1B, Sections 3 and 6).

EXHIBIT 1

Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA 40 CFR 1506.1

1506.1 Limitations on actions during NEPA process.

(a) Until an agency issues a record of decision as provided in 40 CFR 1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would:

(1) Have an adverse environmental impact; or
(2) Limit the choice of reasonable alternatives.

(b) If an agency is considering an application from a non-federal entity and is aware that the applicant is about to take an action within the agency's jurisdiction that would meet either of the criteria in paragraph (a) of this section, then the agency shall promptly notify the applicant that the agency will take appropriate action to insure that the objectives and procedures of NEPA are achieved.

(c) While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:

(1) Is justified independently of the program;
(2) Is itself accompanied by an adequate environmental impact statement; and
(3) Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

(d) This section does not preclude development by applicants of plans or designs or performance of other work necessary to support an application for Federal, State or local permits or assistance. Nothing in this section shall preclude Rural Electrification Administration approval of minimal expenditures not affecting the environment (e.g., long leadtime equipment and purchase options) made by non-governmental entities seeking loan guarantees from the Administration.

EXHIBIT 2

Department of Energy
National Environmental Policy Act Implementing Provisions
10 CFR 1021

Sec. 1021.104 Definitions.

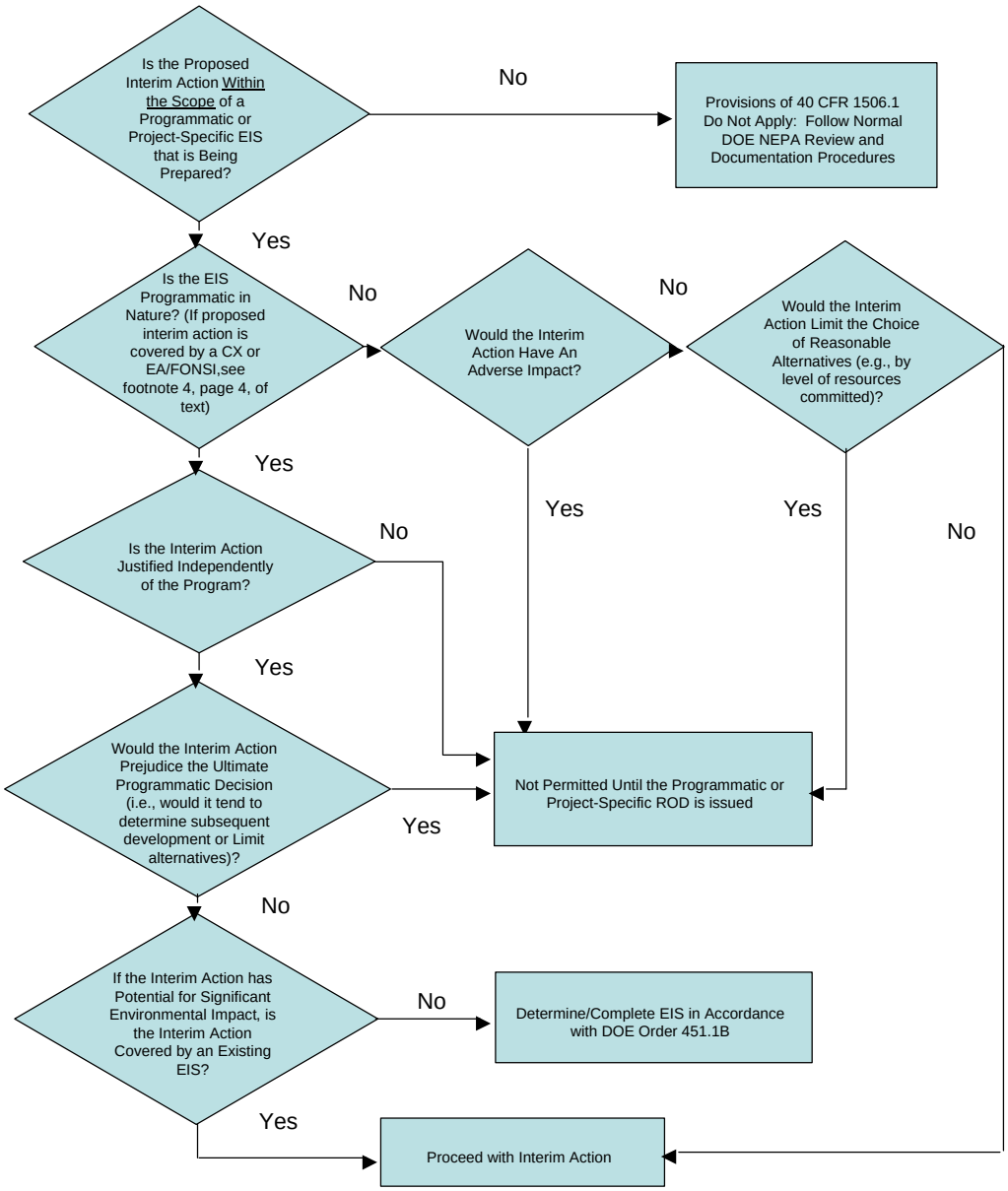
Interim action means an action concerning a proposal that is the subject of an ongoing EIS and that DOE proposes to take before the ROD is issued, and that is permissible under 40 CFR 1506.1: Limitations on actions during the NEPA process.

Sec. 1021.211 Interim actions: Limitations on actions during the NEPA process.

While DOE is preparing an EIS that is required under Sec.1021.300(a) of this part, DOE shall take no action concerning the proposal that is the subject of the EIS before issuing an ROD, except as provided at 40 CFR 1506.1. Actions that are covered by, or are a part of, a DOE proposal for which an EIS is being prepared shall not be categorically excluded under subpart D of these regulations unless they qualify as interim actions under 40 CFR 1506.1.

Exhibit 3

Steps to Follow for Determining Whether Actions May Proceed During the NEPA Process: Interim Actions



Tab 53 - Mello Aff #1, par. 44, ref 1&2
http://www.lanl.gov/orgs/cmrr/publicmeetings/documents/proceedings/laur10-02173vol9.pdf

CHEMISTRY
METALLURGY
RESEARCH
REPLACEMENT

CMRR Public Meeting, March 3, 2010

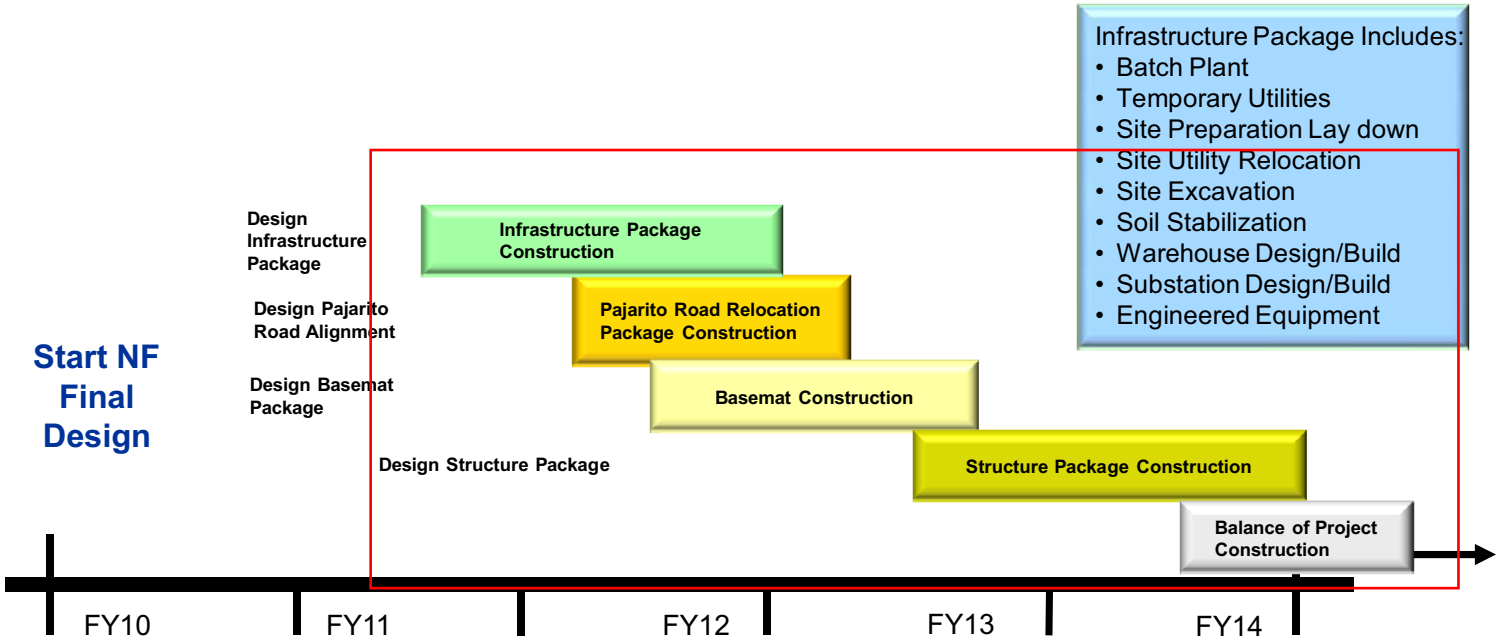
Volume 9

Los Alamos National Laboratory
Los Alamos, New Mexico

Los Alamos
NATIONAL LABORATORY
EST. 1943

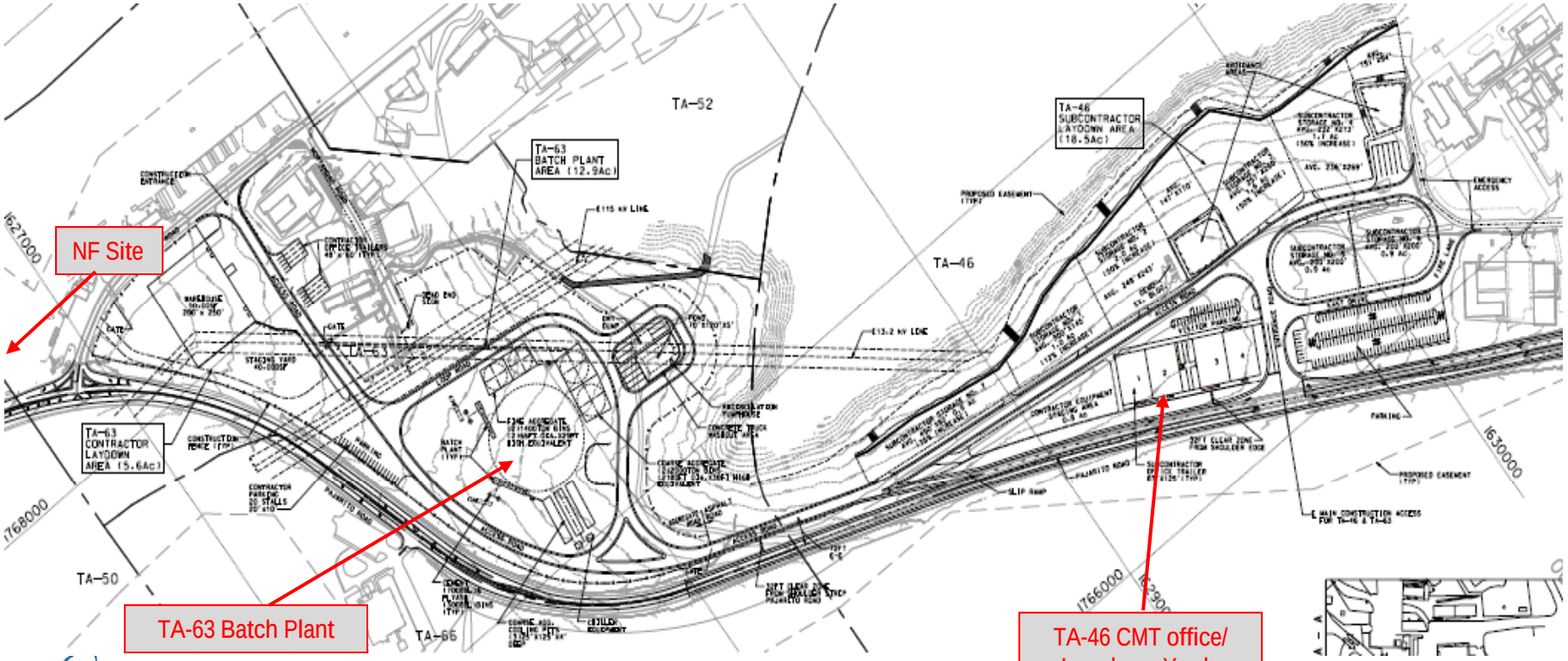
National Nuclear Security Administration

Planned Nuclear Facility Baselines



Construction Site Infrastructure

Lay-down/fabrication yards offices will be established approximately 1 mile from the NF construction site at TA-63 and TA-46 due to lack of available space at the NF construction site.



Tab 54 - Exhibit 7

Acquisition Services Management Division , ASM

Note 1: Click on the ID Number to view the entire record.

ID	NAICS	Description	Estimated Value ($)	Estimated RFP Release Date	Estimated Award Date	Competition Type
142	236210	Architectural Finishes. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	1 M	9/30/2010		
143	236210	RF Radio Antenna. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	1 M	1/1/2011		
144	236210	Red Net Testing. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	1 M	8/20/2010		
145	236210	RLW Line. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	5 M	9/16/2010		
146	236210	Fuel Oil Tank. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	1 M	11/4/2010		
148	423610	IVR Refurbishment. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1.5 M			O
149	423430	Timing Network. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	2 M	12/14/2010		O
150	423830	Industrial Controls. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	2 M	12/14/2010		O
151	423430	Time Data System. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	5 M	9/15/2010		O
152	423620	805 RF Modular Deck. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1 M	10/15/2010		O
153	334411	TH628 Diacrodes (6 each). Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1 M	10/15/2010		O
154	423620	LLRF Field Control Modules. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1 M	10/15/2010		O
155	423740	DTL Water System. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1 M	10/15/2010		O
156		FPA Cavity. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	3 M	8/16/2010		O
157	333298	IPA Integrated Cabinet/Cavity. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1 M	12/16/2010		O
158	423430	LLRF New Reference Transmission Line. Contact: Dennis Mack, dmack@lanl.gov, (505) 667-9897	1 M	7/17/2010		O
160	324110	SUBCONTRACTOR shall furnish qualified personnel, equipment, materials and facilities to perform all services necessary to provide the Laboratory with bulk and cylinder propane gas supply and the delivery of Propane to LANL. Contact: Robert Manzanares, rbmanzanares@lanl.gov, (505) 665-0504	1.5 M	9/30/2010		S
163	335313	Low Voltage Electrical Maintenance, Contact: Kathy Smith, kathys@lanl.gov, (505) 667-3259	14.5 M	10/15/2010		S
164	562910	Environmental Remediation Services - Off-Site Analytical Laboratory Services. Multiple subcontract awards may be awarded to cover a 3 year base period and 2 1 year options. Contact: Feliz Vigil,	100 M	6/1/2011		O

		vigil_f@lanl.gov, (505) 667-3219			
165	562910	Environmental Remediation Services - Technical Services with a focus on technical, regulatory, and non-field support. Multiple Master Task Ordering Agreements (MTOA) will be awarded to cover a 3 year base period with a 2 1 year option. Prequalifications will be requested in August, 2010. Contact: Larry Quinlan, quinlan_l@lanl.gov, (505) 606-0094	150 M	10/1/2010	S
166	562910	Environmental Remediation Services - Environmental Services will include RA/D&D, sampling, and a focus on field support. Multiple MTOAs will be awarded to cover a 3 year base period with 2 1 year options. Prequalifications will be requested in August, 2010. Contact: Mark Backus, backus_mark_k@lanl.gov, (505) 665-9781	400 M	10/1/2010	S
167	562910	Environmental Remediation Services - Waste Characterization, Processing, & Nuclear Facilities Operations Management Support Services. Multiple MTOAs will be awarded to cover a 3 year base period with 2 1 year options. Prequalifications will be requested in August, 2010. Contact: James McGill, mcgill_james@lanl.gov, (505) 665-5638	200 M	10/1/2010	S
168	562910	Environmental Remediation Services -Waste Management, Treatment, Transportation, and Disposal. Multiple MTOAs will be awarded to cover a 3 year base period with 2 1 year options. Prequalifications will be requested in August, 2010. Contact: Jean Renner, jcrenner@lanl.gov, (505) 606-2172	250 M	10/1/2010	S
78	TBD	Vacuum Products, Contact: TBD RFP Date: TBD	14 M		O
82	423120	Automotive Parts, Contact: Frank Sedlacek, sedlacek@lanl.gov, (505) 667-0418	3 M	8/30/2010	S
122	423430	Networking Equipment - Edge Switches, Contact: Barbara Wolf, bwolf@lanl.gov, (505) 606-1673	14.5 M	11/30/2010	S
132	325120	SUBCONTRACTOR shall furnish qualified personnel, equipment, materials and facilities to perform all services necessary to provide the Laboratory with Grade A or higher refrigerated liquid helium, dewar rentals, service of government owned dewars. Contact: Robert Manzanares, rbmanzanares@lanl.gov, (505) 665-0504	5.3 M	8/30/2010	S
137	237130	Temporary Utilities. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	10 M	11/1/2010	S
138	238910	Site Preparation Laydown. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	25 M	10/1/2010	
139	237130	Site Utilities Relocation. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539	5 M	10/1/2010	
140	236210	OSP Security Cable & Horizontal Pull. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539 RFP Date: TBD	5 M	8/20/2010	
141	238910	Site Excavation. Contact: Robert Ping, rwping@lanl.gov, (505) 664-0539 RFP Date: TBD	30 M	10/1/2010	

Competition Type

O = Open Competition
S = Small Business Set-Aside
8 = 8(a) Set-Aside
D = Service Disabled Veteran-Owned Set-Aside

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Job Number: 221238
Engineer 2

Date Posted:	4/13/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$69,300.00	$91,400.00	$113,400.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

Engineer 2 position will interface with a team of other engineers, under the supervision of an Engineer 3, responsible for the CMRR project systems design / analysis work & review of outside A/E and vendor design documents to ensure that the designs comply with Federal, State and Laboratory codes & standards. Engineer 2 position will be responsible for mechanical engineering performance or oversight of design/analysis, calculations, drawings & specifications typical for a non-reactor nuclear project. Specific duties include review/oversight of major mechanical design elements for the nuclear facility. Engineer 2 staff must have solid design experience, requiring knowledge & application of construction procedures, DOE/LANL/Industrial standards, and building codes & specifications.

Key Position Requirements

Demonstrated, solid mechanical engineering experience with projects involving new facilities, facility modifications, & specification/installation of equipment. Basic technical knowledge in non-reactor nuclear facility mechanical design & analysis and implementation of DOE Facility Safety and Design publications. Experience in mechanical analyses in accordance with the IBC, UPC, ASME, ASHRAE is required. Primary focus will be on the performance of design/analysis calculations, preparation of specifications and/or details for sketches and drawings, as well as

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Job Number: 221263
Engineer 2

Date Posted:	4/13/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$69,300.00	$91,400.00	$113,400.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

Structural Engineer 2 will report to the CMRR CSA team leader and will work with a team of experienced engineers responsible for oversight of LANL CMRR nuclear facility structural design/analysis work, including drawings, specifications, calculations and test/inspection plans of structures, systems & components. The Engineer 2 will perform seismic/structural design projects, seismic analysis/design, as well as for the oversight/review of work submitted by external Architect-Engineer firms under the mentorship of senior Engineer 3 staff. Applicant must have appropriate level of non-reactor nuclear design experience, requiring knowledge and application of construction procedures, DOE/LANL/Industrial standards, building codes and technical specifications.

Key Position Requirements

Position requires demonstrated, structural engineering experience with projects involving new or modification to existing non-reactor nuclear facilities. Significant technical knowledge in non-reactor nuclear facility structural design and seismic analysis is essential. Commensurate experience in structural analyses, seismic analyses, & floor loading analyses in accordance with the IBC, ASCE 7, and ASCE 43 is required. Bachelor of Science in Structural Engineering is required. Work experience in the DOE complex is highly desired. Familiarity with DOE-STD 1189 is highly desirable. Professional engineer license is desired

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Job Number: 221222
Engineer 3

Date Posted:	4/13/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$76,500.00	$100,900.00	$128,000.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Engineer 3 position will interface with a team of other deployed engineers responsible primarily for the CMRR project systems design / analysis work & review of outside A/E and vendor design documents to ensure that the designs comply with Federal, State and Laboratory codes & standards. This Engineer 3 position will be responsible for mechanical engineering performance or oversight of design/analysis, calculations, drawings & specifications typical for a non-reactor nuclear project. Specific duties include review/oversight of major mechanical design elements for the nuclear facility. Engineer 3 staff must have wide-ranging design experience, requiring knowledge & application of construction procedures, DOE/LANL/Industrial standards, and building codes & specifications.

Key Position Requirements

Demonstrated broad-based, mechanical engineering experience with projects involving new facilities, facility modifications, & specification/installation of equipment. Extensive technical knowledge in non-reactor nuclear facility mechanical design & analysis and implementation of DOE Facility Safety and Design publications. Extensive experience in mechanical analyses in accordance with the IBC, UPC, ASME, ASHRAE is required. Primary focus will be on the performance of design/analysis calculations, preparation of specifications and/or details for sketches and drawings, as well as special tests & inspection for the mechanical discipline. BS in Mechanical Engineering required.

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Job Number: 221223
Engineer 3

Date Posted:	4/7/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$76,500.00	$100,900.00	$128,000.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

Engineer 3 position will interface with a team of other engineers responsible for the CMRR project site design / analysis work & review of outside A/E and vendor design documents to ensure that the designs comply with Federal, State and Laboratory codes & standards. Engineer 3 position will be responsible for civil engineering performance or oversight of design/analysis, calculations, drawings & specifications typical for the civil portion of a non-reactor nuclear project. Specific duties include review/oversight of major civil design elements for the nuclear facility. Engineer 3 staff must have wide-ranging design experience, requiring knowledge & application of construction procedures, DOE/LANL/Industrial standards, and building codes & specifications.

Key Position Requirements

Demonstrated broad-based, civil engineering experience with projects involving new facilities, facility modifications, & specification/installation of site facilities. Extensive technical knowledge in non-reactor nuclear facility civil design & analysis and implementation of DOE O 1189. Extensive experience in civil analyses in accordance with the IBC, IEBC, ACES is required. Primary focus will be on the performance of design/analysis calculations, preparation of specifications and/or details for sketches and drawings, as well as special tests & inspection for the civil discipline. Bachelor of Science in Civil Engineering required. Knowledge of building site civil codes & standards is required.

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email: jobs@lanl.gov

Job Number: 221236
Engineer 3

Date Posted:	4/7/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$76,500.00	$100,900.00	$128,000.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

Structural Engineer 3 will report to the CMRR CSA team leader and will work with a team of experienced engineers responsible for oversight of LANL CMRR nuclear facility structural design/analysis work, including drawings, specifications, calculations and test/inspection plans of structures, systems & components. The engineer 3 is responsible for leading seismic/structural design projects, seismic analysis/design, as well as for the oversight/review of work submitted by external Architect-Engineer firms. Applicant must have wide-ranging non-reactor nuclear design experience, requiring knowledge and application of construction procedures, DOE/LANL/Industrial standards, building codes and technical specifications.

Key Position Requirements

Position requires demonstrated, broad-based structural engineering experience with projects involving new or modification to existing non-reactor nuclear facilities. Significant technical knowledge in non-reactor nuclear facility structural design and seismic analysis is essential. Significant experience in structural analyses, seismic analyses, & floor loading analyses in accordance with the IBC, ASCE 7, and ASCE 43 is required. Work experience in the DOE complex is required. Bachelor of Science in Structural Engineering is required. Familiarity with DOE-STD 1189 is highly desirable. Professional engineer license is desired.

- contacts
- **phone:** 505-665-5627
- **email:** jobs@lanl.gov

Job Number: 221243
Subcontract Specialist 3

Date Posted:	4/12/2011	**Division:**	ASM-DO
Employment Type:	LANL	**Organization:**	ASM-DEP
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$69,300.00	$91,400.00	$113,400.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Subcontract Specialist 3 will report to the Acquisition Services Manager 5 within the Acquisition Services Management assigned to the CMRR Project. The individual forms and administers large, complex construction subcontracts for REI and the Nuclear Facility. Will prepare change order and amendments, negotiates with subcontractors and customers to obtain settlements on assigned subcontracts. Responsibilities include interfacing with functional units, customers, auditors, and subcontractors; providing solutions to customer acquisition issues; development of solicitations, negotiating and subcontracts;

managing, administering subcontracts; providing subcontract interpretations and assisting with financial, legal, or technical issues.Follows Laboratory and procurement guidance and works independently with input from supervisors and management.

Key Position Requirements

Broad experience in formation, negotiation, award, administration, and closeout of all types of subcontracts (cost re, fixed price, fixed unit price, time and materials). Good working knowledge of change management procedures pertaining to Requests for Information, Change Notices, Change Orders, modifications/amendments, claims and dispute resolution. Experience in both commercial and government subcontracting. Understanding of Federal Acquisition Regulations and their application.

Job Description (show details...)

Pre-Employment Drug Test

The Laboratory requires successful applicants to complete a pre-employment drug test and maintains a substance abuse policy that includes random drug testing.

Government Conflict of Interest

To ensure that you and LANL avoid any potential conflicts of interest, all current/former Government Officials must read and respond, if applicable, to the LANL Applicant Disclosure Form.

Contact

For specific questions about the status of this job, call (505)665-8043

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Job Number: 221195
Project Engineer 3

Date Posted:	4/4/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-PE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$83,100.00	$111,700.00	$142,500.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The successful applicant will work as a Project Engineer within the Engineering Services Division and will be assigned to the CMRR capital project. This position provides the following project engineering services: engineering management of all aspects of the technical execution of the design engineering on assigned CMRR activities including F&ORs, cost account management, and design schedule performance. Responsibilities include: implementing the project requirements from project inception through design, construction, and closeout in accordance with the Conduct of Engineering processes utilizing either internal or external design agencies. The PE will take daily work direction from the CMRR Project Engineering Manager.

Key Position Requirements

Demonstrated successful experience in performing the PE function for facility,programmatic, nuclear or radiation waste type projects, successful experience in leading multi-discipline project and engineering design teams, execution of complex construction projects, extensive knowledge of cross-discipline engineering design, industry standards, DOE requirements, NQA-1 quality requirements and a demonstrated experience in managing a matrix type organization. A record of personal integrity, trustworthiness and commitment to development of the PE team. Candidate should have a minimum of 8 years experience in project engineering, design engineering or project

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Job Number: 221197
Project Engineer 3

Date Posted:	4/4/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-PE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$83,100.00	$111,700.00	$142,500.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The successful applicant will work as a Project Engineer within the Engineering Services Division and will be assigned to the CMRR capital project. This position provides the following project engineering services: engineering management of all aspects of the technical execution of the design engineering on assigned CMRR activities including F&ORs, cost account management, and design schedule performance. Responsibilities include: implementing the project requirements from project inception through design, construction, and closeout in accordance with the Conduct of Engineering processes utilizing either internal or external design agencies. The PE will take daily work direction from the CMRR Project Engineering Manager.

Key Position Requirements

Demonstrated successful experience in performing the PE function for facility,programmatic, nuclear or radiation waste type projects, successful experience in leading multi-discipline project and engineering design teams, execution of complex construction projects, extensive knowledge of cross-discipline engineering design, industry standards, DOE requirements, NQA-1 quality requirements and a demonstrated experience in managing a matrix type organization. A record of personal integrity, trustworthiness and commitment to development of the PE team. Candidate should have a minimum of 8 years experience in project engineering, design engineering or project

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Job Number: 218784
Engineer 3

Date Posted:	5/3/2010	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$76,500.00	$100,900.00	$128,000.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

This position serves as the subject matter expert Fire Protection Design reporting directly to the CMRR Design Leader and indirectly to the Core Lead Fire Protection Design Engineer of the Engineering Services (ES) Division, Design Engineering (DE) Group. The DE Group provides institutional leadership, processes, and technical resources for safe, high quality, and cost-effective engineering, construction and operational configuration management in support of LANL operations. The Fire Protection Design Engineer position is part of a group of engineers responsible primarily for design and review of projects to ensure that designs are developed in compliance with LANL, State, Federal and U.S. Department of Energy requirements. The primary focus of this position is the analysis, design review and modification of fire protection systems in nuclear facilities including both alarm and suppression systems applicable to the Chemistry Metallurgy Research Replacement (CMRR) Project, including providing operational technical support, performing calculations, generating designs, and leading design projects. Additional responsibilities include analysis of plant Fire Protection systems/equipment and potential operational deficiencies, definition of fire protection design and safety envelope requirements, and review of proposed facility designs/modifications for maintainability, operability, and conformance to facility operational and safety requirements.

Key Position Requirements

Demonstrated experience as a fire protection engineer at a major commercial, industrial, or nuclear facility with a strong background in fire suppression and fire alarm system design. Demonstrated experience in the design and maintenance of wet pipe and specialty suppression systems. Demonstrated experience trouble shooting fire protection systems. Demonstrated experience in the application of codes and standards in a highly regulated work environment. Demonstrated ability to develop and implement Fire Hazard Analysis. Demonstrated ability to perform analysis and calculations required to support fire protection system design solutions and in the use of fire modeling software to support engineering solutions. Ability to work independently with minimum guidance for assigned tasks and effectively communicate engineering solutions both verbally and written with management, customers, peers and craft personnel and to manage multiple tasks requiring varying resource. Proven ability to integrate and coordinate multi-facility, deployed, cross-functional technical work activities. Ability to develop reports for senior managers. Active or reinstatable Q-clearance; otherwise the ability to obtain and maintain a Q-Clearance, which normally requires US Citizenship. BS degree in an Engineering discipline.

Job Description (show details...)

Pre-Employment Drug Test

The Laboratory requires successful applicants to complete a pre-employment drug test and maintains a substance abuse policy that includes random drug testing.

Government Conflict of Interest

To ensure that you and LANL avoid any potential conflicts of interest, all current/former Government Officials must read and respond, if applicable, to the LANL Applicant Disclosure Form.

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Job Number: 219109
Engineer 3

Date Posted:	3/18/2010	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$76,500.00	$100,900.00	$128,000.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Engineer 3 will work with a team of deployed engineers responsible for LANL CMRR Project development. This engineer will be responsible for providing technical oversight of the CMRR electrical procurements. Duties of the procurement engineer include: participation in audits and surveillances of NQA-1 suppliers and sub-tier suppliers to ensure requirements are met and properly flowed down; development and approval of commercial grade item dedication (CGD) plans for items that cannot be sourced from qualified suppliers; assist in the development and/or interpretation of technical specifications; assist in resolving conflicting requirements; concur with proposed Supplier Deviation Disposition Request/Non-Conformance Report (SDDR/NCR) dispositions; and ensure CGD is completed accurately.

Key Position Requirements

Bachelor of Science degree in Electrical Engineering. The primary focus of this position is the technical oversight of the item procurement process and commercial grade item dedication process to ensure that CMRR structures, systems, and components meet both technical and quality requirements. Demonstrated broad-based experience procurement engineering and/or manufacturing. Specific experience in the implementation of ASME NQA-1 requirements with emphasis on design, procurement, control of items, material traceability, records,

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Job Number: 219122
Engineer 4

Date Posted:	5/3/2010	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$91,700.00	$122,800.00	$154,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

This position serves as the subject matter expert for Fire Protection Design reporting directly to the Chemistry and Metallurgy Research Replacement (CMRR) Design Engineering First Line Manager. The Fire Protection Design Engineer position is part of a group of engineers responsible primarily for design and review of the CMRR project to ensure that designs are developed in compliance with LANL, State, Federal and U.S. Department of Energy requirements. The primary focus of this position is the analysis, design review and modification of fire protection systems in nuclear facilities including both alarm and suppression systems applicable to the CMRR Project, including providing operational technical support, performing calculations, generating designs, and leading design projects. Additional responsibilities include analysis of plant Fire Protection systems/equipment and potential operational deficiencies, definition of fire protection design and safety envelope requirements, and review of proposed facility designs/modifications for maintainability, operability, and conformance to facility operational and safety requirements. The Fire Protection subject matter expert will be expected to represent the project on fire protection issues with external customers and oversight agencies.

Key Position Requirements

Demonstrated expert level knowledge resulting from senior experience as a fire protection engineer at a major

commercial, industrial, or nuclear facility with a strong background in fire suppression and fire alarm system design. Demonstrated experience in the design and maintenance of wet pipe and specialty suppression systems. Demonstrated experience trouble shooting fire protection systems. Demonstrated experience in the application of codes and standards in a highly regulated work environment. Demonstrated ability to develop and implement Fire Hazard Analysis. Demonstrated ability to perform analysis and calculations required to support fire protection system design solutions and in the use of fire modeling software to support engineering solutions. Ability to work independently with minimum guidance for assigned tasks and effectively communicate engineering solutions both verbally and written with management, customers, peers and craft personnel and to manage multiple tasks requiring varying resource. Proven ability to integrate and coordinate multi-facility, deployed, cross-functional technical work activities. Ability to develop reports for senior managers. Active or reinstatable Q-clearance; otherwise the ability to obtain and maintain a Q-Clearance, which normally requires US Citizenship. BS degree in Fire Protection or BS degree in an Engineering discipline with a Master degree in Fire Protection. Registered Professional Engineer in the Fire Protection discipline preferred. 10 years Fire Protection experience at a DOE complex preferred.

Job Description (show details...)

Pre-Employment Drug Test

The Laboratory requires successful applicants to complete a pre-employment drug test and maintains a substance abuse policy that includes random drug testing.

Government Conflict of Interest

To ensure that you and LANL avoid any potential conflicts of interest, all current/former Government Officials must read and respond, if applicable, to the LANL Applicant Disclosure Form.

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Job Number: 219194
Engineering Manager 2

Date Posted:	3/29/2010	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$83,100.00	$111,700.00	$142,500.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Procurement Engineering Lead (EM2) will work with a team of deployed engineers responsible for LANL CMRR Project development. This EM2 will supervise a group of procurement engineers responsible for providing technical oversight of the CMRR item procurements. Duties of the procurement engineering team include: participation in audits and surveillances of NQA-1 suppliers and sub-tier suppliers to ensure requirements are met and properly flowed down; development and approval of commercial grade item dedication (CGD) plans for items that cannot be sourced from qualified suppliers; assist in the development and/or interpretation of technical specifications; assist in resolving conflicting requirements; concur with proposed SDDR/NCR dispositions; and ensure CGD completed accurately.

Key Position Requirements

Bachelor of Science degree in Mechanical, Electrical, I&C, or Chemical Engineering. Demonstrated broad-based experience procurement engineering and/or manufacturing. Specific experience in the implementation of ASME NQA-1 requirements with emphasis on design, procurement, control of items, material traceability, records, shipping/handling, test and inspection control, and special processes. Specific experience in commercial grade item dedication. Demonstrated ability to comprehend, analyze, and resolve complex problems. The primary focus of this

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Job Number: 221241
Procurement Specialist 2

Date Posted:	4/12/2011	**Division:**	ASM-DO
Employment Type:	LANL	**Organization:**	ASM-DEP
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	2

Salary Band

Minimum	Mid	Maximum
$57,800.00	$74,800.00	$91,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Procurement Specialist 2 will report to the Acquisition Services Manager within the Acquisition Services Management assigned to the Chemistry & Metallurgy Research Replacement Project (CMRR). Responsibilities include expediting schedules, submittals, fabrication, and delivery of engineered equipment, as well as heavy interface with Engineering, Purchasing, Supplier Quality. The individual should have a good working knowledge of placement, administration and closeout of purchase orders for engineered equipment.

Key Position Requirements

Experience in reviewing schedules, expediting submittals from suppliers and responses from Engineering, understanding statements of work, specification requirements, price, and other contractual provisions with suppliers/subcontractors.Knowledge of contract terms and conditions. Demonstrated experience interacting effectively with suppliers, customers,co-workers, and managers in a collaborative manner to achieve organizational objectives. Excellent verbal and written communication skills. Basic research and evaluation skills. Basic knowledge of the Federal Acquisition Regulations and must have good computer skills in Microsoft Word, Excel (ability to build spreadsheets, make graphs).

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Job Number: 221242
Procurement Specialist 2

Date Posted:	4/12/2011	**Division:**	ASM-DO
Employment Type:	LANL	**Organization:**	ASM-DEP
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$57,800.00	$74,800.00	$91,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Procurement Specialist 2 will report to the Acquisition Services Manager within the Acquisition Services Management assigned to the Chemistry & Metallurgy Research Replacement Project (CMRR). The Procurement Specialist will work with and through ASM-Purchasing organization Supplies & Services, commercial items, repairs, etc. The individual is responsible for placement, administration and closeout of subcontracts/purchase orders. Responsibilities include drafting, soliciting, evaluating and negotiating terms and conditions for small to large dollar fixed-price and cost type services and task order services, interfacing with functional units, customers, auditors, and suppliers/subcontractors; providing solutions to customer acquisition issues; development of solicitations, negotiating negotiations.

Key Position Requirements

Experience in performing price analysis, negotiating specifications, statements of work, price, and other contractual provisions with suppliers/subcontractors. Knowledge of contract terms and conditions, allowability of costs, award criteria, and closeout preparation. Demonstrated experience interacting effectively with customers, co-workers, and managers in a collaborative manner to achieve organizational objectives. Excellent verbal and written communication skills. Basic research and evaluation skills. Basic knowledge of the Federal Acquisition Regulations

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phone: 505-665-5627

email: jobs@lanl.gov

Job Number: 221116
Subcontract Specialist 3

Date Posted:	3/23/2011	**Division:**	ASM-DO
Employment Type:	LANL	**Organization:**	ASM-DEP
Appointment Type:	Limited Term 3 YEARS	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$69,300.00	$91,400.00	$113,400.00

Clearance: None

Position Overview

The Subcontract Specialist 3 will report to the Acquisitions Service Manager 5 within the Acquisition Services Management Division. The individual forms and administers large, complex construction subcontracts in support of the Chemistry and Metallurgy Research Replacement (CMRR) Project. Will prepare change order and amendments; negotiate with subcontractors and customers to obtain settlements on assigned subcontract. Responsibilities include interfacing with functional units, customers, auditors, and subcontractors; providing solutions to customer acquisition issues; development of solicitations, negotiating and subcontracts; managing, administering subcontracts; providing subcontract interpretations and assisting with financial, legal, or technical issues.

Key Position Requirements

Broad experience in formation, negotiation, award, administration, and closeout of all types of subcontracts (cost re, fixed price, fixed unit price, time and materials). Good working knowledge of change management procedures pertaining to Requests for Information, Change Notices, Change Orders, modifications/amendments, claims and dispute resolution. Experience in both commercial and government subcontracting. Understanding of Federal Acquisition Regulations and their application.

Job Description (show details...)

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phone: **505-665-5627**

email: jobs@lanl.gov

Job Number: 221164
Engineer 3

Date Posted:	3/30/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Regular	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$76,500.00	$100,900.00	$128,000.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Seismic/Structural Engineer 3 will be a member of the LANL Earthquake Engineering Team that is primarily responsible for understanding the seismic hazard in Los Alamos and for understanding the risk associated with that hazard on facilities at the site. To enhance capability and to better understand the hazard and mitigate the risk, the Earthquake Engineering Team is involved in research in a number of areas including, behavior of the local fault systems, site response, and structural, system and component behavior. The team provides consultation to facility construction projects and safety basis to ensure LANL facilities are designed, constructed and operated such the safety goal of the DOE are met. The Seismic/Structural Engineer 3 position will work with a team of licensed engineers responsible primarily for LANL facility seismic design / analysis work, which includes assessments of structures, systems and components of non-reactor nuclear facilities. In addition, the seismic/structural engineer 3 is responsible for the oversight of project designs performed by external AE firms to ensure compliance with applicable Federal, State, and Laboratory codes and standards. This position is assigned responsibility for leading seismic/structural design projects, the performance of seismic/structural engineering work, as well as the review of submittal documents, such as design/analysis calculations, drawings, specifications, and test / inspection plans. The Applicant must have design experience, requiring knowledge and application of construction procedures, DOE/LANL/Industrial standards, nuclear facility seismic/structural codes and standards, building codes and technical

specifications. In addition, work includes seismic/structural analysis of re-configured facility space, and design to conform with the IEBC requirements for alterations. Seismic/Structural engineer will develop design criteria and perform analysis, modeling, and evaluation of non-reactor nuclear structures exposed to normal operating loads and loads from natural phenomena hazards. The primary tasks will include writing structural design criteria for new projects, reviewing designs and supporting analyses submitted by external design teams for conformance to the design criteria, performing independent verification analyses to ensure that the submitted designs will satisfy the design criteria, and performing structural analyses and evaluations in support of safety analysis reports. Other tasks will include presenting results and conclusions from these analyses to Laboratory staff, the DOE, and the Defense Nuclear Facilities Safety Board.

Key Position Requirements

Position requires demonstrated broad-based, seismic/structural engineering experience with projects involving new facilities, facility modifications, and support/anchorage of equipment. Specific requirements include: Demonstrated experience in facility structural design and seismic analysis; Demonstrated experience with material codes used for structural design (ACI, AISC, ASCE, IBC); Demonstrated experience in performing structural analysis using commercially available codes such as SAP2000, GTSTRUDL, ANSYS or ABAQUS; and, Demonstrated experience working in a team environment with members with diverse capabilities and experience. Desired capabilities include: Familiarity with DOE Safety Policy, Orders (420.1) and Implementing NPH Standards (1020, 1189); Experience in performing dynamic analysis for non-reactor nuclear structures; Familiarity with soil-structure interaction; and, Computer programming skills for engineering applications. Bachelor of Science in Seismic or Structural Engineering, Engineering Mechanics, or equivalent combination of education and experience degree in seismic / structural engineering or equivalent. MS preferred. Licensing as a PE in NM is preferred, or the ability to become licensed in NM within a short period of time is necessary.

Job Description (show details...)

Notes To Applicants

Participates as a member of the Earthquake Engineering Team. Responsible for assigned activities within a seismic/structural engineering discipline in support of facility assessments and design. Develops and participates in focused research and development to enhance capability and advance the state-of ¿the ¿art . Applies broad and diversified knowledge of engineering principles and practices in the preparation of complex engineering analyses. Performs all aspects of work in engineering operations and coordinates inter-disciplinary activities. Performs conventional and unique structural design and analysis. Identifies system integration activities within and across disciplines. May lead projects and supervise the work of others. Able to work independently and as part of a team. Utilizes engineering technology to accomplish work. Identifies and manages work process improvement to meet customer needs.

Pre-Employment Drug Test

The Laboratory requires successful applicants to complete a pre-employment drug test and maintains a substance abuse policy that includes random drug testing.

Government Conflict of Interest

To ensure that you and LANL avoid any potential conflicts of interest, all current/former Government Officials must read and respond, if applicable, to the LANL Applicant Disclosure Form.

Contact

For specific questions about the status of this job, call **(505)606-2325**

Apply

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phone: **505-665-5627**

email: jobs@lanl.gov

Job Number: 221296
Engineer 4

Date Posted:	4/15/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Regular	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$91,700.00	$122,800.00	$154,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

The Seismic/Structural Engineer 4 will be a member of the LANL Earthquake Engineering Team that is primarily responsible for understanding the seismic hazard in Los Alamos and for understanding the risk associated with that hazard on facilities at the site. To enhance capability and to better understand the hazard and mitigate the risk, the Earthquake Engineering Team is involved in research in a number of areas including, behavior of the local fault systems, site response, and structural, system and component behavior. The team provides consultation to facility construction projects and safety basis to ensure LANL facilities are designed, constructed and operated such the safety goal of the DOE are met.

This Seismic/Structural Engineer 4 position focuses on the seismic qualification of systems and components (equipment). The selected candidate will work with a team of licensed engineers responsible primarily for LANL facility seismic design / analysis work, which includes assessments of structures, systems and components of non-reactor nuclear facilities. In addition, the seismic/structural engineer is responsible for the oversight of project designs performed by external AE firms to ensure compliance with applicable Federal, State, and Laboratory codes and standards. This position is assigned responsibility for leading seismic/structural design projects, the performance of seismic/structural engineering work, as well as the review of submittal documents, such as design/analysis calculations, drawings, specifications, and test / inspection plans. The Applicant must have wide-

ranging design experience, requiring knowledge and application of construction procedures, DOE/LANL/Industrial standards, nuclear facility seismic/structural codes and standards, building codes and technical specifications. In addition, work includes seismic/structural analysis of re-configured facility space, and design to conform with the IEBC requirements for alterations.

Seismic / Structural engineer will develop design criteria and to perform analysis, modeling, and evaluation of nuclear structures exposed to normal operating loads and loads from natural phenomena hazards with an emphasis on equipment qualification. The primary tasks will include writing structural design criteria for new projects, reviewing designs and supporting analyses submitted by external design teams for conformance to the design criteria, performing independent verification analyses to ensure that the submitted designs will satisfy the design criteria, and performing structural analyses and evaluations in support of safety analysis reports. Other tasks will include presenting results and conclusions from these analyses to Laboratory staff, the DOE, and the Defense Nuclear Facilities Safety Board.

Key Position Requirements

Position requires demonstrated broad-based, seismic/structural engineering experience with projects involving new facilities, facility modifications, and support/anchorage of equipment. Extensive technical knowledge in non-reactor nuclear facility structural design and seismic analysis is essential. Specific requirements include: Familiarity with DOE Safety Policy, Orders (420.1) and Implementing NPH Standards (1020, 1189) and experience working within the DOE complex; Demonstrated experience in facility structural design and seismic analysis; Demonstrated experience with material codes used for structural design (ACI, AISC, ASCE, IBC); Experience in performing dynamic analysis for non-reactor nuclear structures using commercially available codes such as SAP2000, GTSTRUDL, ANSYS or ABAQUS; Experience with the evaluation of component and seismic qualification of components (ASME, IEEE, SQUG); Familiarity with structural reliability theory to include seismic fragility analysis, and, Demonstrated experience working in a team environment with members with diverse capabilities and experience. Desired capabilities include: Familiarity with soil-structure interaction analysis; and, Computer programming skills for engineering applications.

MS in Seismic or Structural Engineering, Engineering Mechanics, Mechanical Engineering or equivalent combination of education and experience degree in seismic / structural engineering or equivalent is required. PhD in seismic or structural engineering is preferred. Licensing as a PE in NM is preferred, or the ability to become licensed in NM within a short period of time is necessary.

Job Description (hide details...)

Summary

Identifies and/or leads activities within an engineering discipline in support of facility design, operation and maintenance. Applies broad and diversified knowledge of engineering principles and practices in the preparation of complex engineering analyses. Performs all aspects of work in engineering operations and coordinates inter-disciplinary activities. Performs conventional and unique structural design and analysis. Identifies system integration activities within and across disciplines. Integrates construction and project activities. Lead projects and supervise the work of others. Able to work independently and as part of a team, Utilizes engineering technology to accomplish work. Identifies and manages work process improvement to meet customer needs.

Job Duties

1. Safety and security are primary responsibilities for all Laboratory employees. Maintains required safety and security training and assures compliance; makes safety and security an integral part of every task. Takes steps to stop work if unsafe conditions exist or security is compromised.
2. Adheres to engineering policies, programs, procedures and practices.
3. Researches, assembles, and/or evaluates information or data regarding industry practices or applicable regulatory changes affecting engineering policies or programs; recommends sound, practical solutions to complex issues.
4. Uses broad and/or unique knowledge and skills to contribute to the development of objectives and principles and to achieve goals in creative and effective ways.
5. Develops advanced concepts, techniques, and standards based on professional principles and theories. Has impact on success of future concepts, products or technologies.
6. Viewed as expert within field within the Laboratory.

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email: jobs@lanl.gov

Job Number: 221298
Engineer 4

Date Posted:	4/15/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Regular	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$91,700.00	$122,800.00	$154,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

This Seismic/Structural Engineer 4 position focuses on the soil-structure interaction analysis of nuclear and high hazard facilities. The selected candidate will be a member of the LANL Earthquake Engineering Team that is primarily responsible for understanding the seismic hazard in Los Alamos and for understanding the risk associated with that hazard on facilities at the site. To enhance capability and to better understand the hazard and mitigate the risk, the Earthquake Engineering Team is involved in research in a number of areas including, behavior of the local fault systems, site response, and structural, system and component behavior. The team provides consultation to facility construction projects and safety basis to ensure LANL facilities are designed, constructed and operated such the safety goal of the DOE are met.

The Seismic/Structural Engineer 4 position will work with a team of licensed engineers responsible primarily for LANL facility seismic design / analysis work, which includes assessments of structures, systems and components of non-reactor nuclear facilities. In addition, the seismic/structural engineer is responsible for the oversight of project designs performed by external AE firms to ensure compliance with applicable Federal, State, and Laboratory codes and standards. This position is assigned responsibility for leading seismic/structural design projects, the performance of seismic/structural engineering work, as well as the review of submittal documents, such as design/analysis calculations, drawings, specifications, and test / inspection plans. The Applicant must have wide-

ranging design experience, requiring knowledge and application of construction procedures, DOE/LANL/Industrial standards, nuclear facility seismic/structural codes and standards, building codes and technical specifications. In addition, work includes seismic/structural analysis of re-configured facility space, and design to conform with the IEBC requirements for alterations.

Seismic / Structural engineer will develop design criteria and to perform analysis, modeling, and evaluation of nuclear structures exposed to normal operating loads and loads from natural phenomena hazards with an emphasis on Soil-Structure Interaction. The primary tasks will include writing structural design criteria for new projects, reviewing designs and supporting analyses submitted by external design teams for conformance to the design criteria, performing independent verification analyses to ensure that the submitted designs will satisfy the design criteria, and performing structural analyses and evaluations in support of safety analysis reports. Other tasks will include presenting results and conclusions from these analyses to Laboratory staff, the DOE, and the Defense Nuclear Facilities Safety Board.

Key Position Requirements

Position requires demonstrated broad-based, seismic/structural engineering experience with projects involving new facilities, facility modifications, and support/anchorage of equipment. Extensive technical knowledge in non-reactor nuclear facility structural design and seismic analysis is essential. Specific requirements include: Familiarity with DOE Safety Policy, Orders (420.1) and Implementing NPH Standards (1020, 1189) and experience working within the DOE complex; Demonstrated experience in facility structural design and seismic analysis; Demonstrated experience with material codes used for structural design (ACI, AISC, ASCE, IBC); Experience in performing dynamic analysis for non-reactor nuclear structures using commercially available codes such as SAP2000, GTSTRUDL, ANSYS or ABAQUS; Demonstrated experience with soil-structure interaction analysis; Familiarity with structural reliability theory to include seismic fragility analysis, and, Demonstrated experience working in a team environment with members with diverse capabilities and experience. Desired capabilities include: Experience with the evaluation of component and seismic qualification of components (ASME, IEEE, SQUG); and, Computer programming skills for engineering applications.

MS in Seismic or Structural Engineering, Engineering Mechanics, or equivalent combination of education and experience degree in seismic / structural engineering or equivalent is required. PhD in seismic or structural engineering is preferred. Licensing as a PE in NM is preferred, or the ability to become licensed in NM within a short period of time is necessary.

Job Description (hide details...)

Summary

Identifies and/or leads activities within an engineering discipline in support of facility design, operation and maintenance. Applies broad and diversified knowledge of engineering principles and practices in the preparation of complex engineering analyses. Performs all aspects of work in engineering operations and coordinates inter-disciplinary activities. Performs conventional and unique structural design and analysis. Identifies system integration activities within and across disciplines. Integrates construction and project activities. Lead projects and supervise the work of others. Able to work independently and as part of a team, Utilizes engineering technology to accomplish work. Identifies and manages work process improvement to meet customer needs.

Job Duties

1. Safety and security are primary responsibilities for all Laboratory employees. Maintains required safety and security training and assures compliance; makes safety and security an integral part of every task. Takes steps to stop work if unsafe conditions exist or security is compromised.
2. Adheres to engineering policies, programs, procedures and practices.
3. Researches, assembles, and/or evaluates information or data regarding industry practices or applicable regulatory changes affecting engineering policies or programs; recommends sound, practical solutions to complex issues.
4. Uses broad and/or unique knowledge and skills to contribute to the development of objectives and principles and to achieve goals in creative and effective ways.
5. Develops advanced concepts, techniques, and standards based on professional principles and theories. Has impact on success of future concepts, products or technologies.
6. Viewed as expert within field within the Laboratory.

- contacts
- **phone:** 505-665-5627
- **email:** jobs@lanl.gov

Job Number: 221299
Engineer 4

Date Posted:	4/15/2011	**Division:**	ES-DO
Employment Type:	LANL	**Organization:**	ES-DE
Appointment Type:	Regular	**Status:**	OPEN
Recruiting Scope:	External	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$91,700.00	$122,800.00	$154,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

Position Overview

This Seismic/Structural Engineer 4 position focuses on the structural response of structures systems and components through appropriate use of dynamic analysis and application of national consensus codes and standards. The selected candidate will be a member of the LANL Earthquake Engineering Team that is primarily responsible for understanding the seismic hazard in Los Alamos and for understanding the risk associated with that hazard on facilities at the site. To enhance capability and to better understand the hazard and mitigate the risk, the Earthquake Engineering Team is involved in research in a number of areas

including, behavior of the local fault systems, site response, and structural, system and component behavior. The team provides consultation to facility construction projects and safety basis to ensure LANL facilities are designed, constructed and operated such the safety goal of the DOE are met.

The Seismic/Structural Engineer 4 position will work with a team of licensed engineers responsible primarily for LANL facility seismic design / analysis work, which includes assessments of structures, systems and components of non-reactor nuclear facilities. In addition, the seismic/structural engineer is responsible for the oversight of project designs performed by external AE firms to ensure compliance with applicable Federal, State, and Laboratory codes and standards. This position is assigned responsibility for leading seismic/structural design projects, the performance of seismic/structural engineering work, as well as the review of submittal documents, such as design/analysis calculations, drawings, specifications, and test / inspection plans. The Applicant must have wide-ranging design experience, requiring knowledge and application of construction procedures, DOE/LANL/Industrial standards, nuclear facility seismic/structural codes and standards, building codes and technical specifications. In addition, work includes seismic/structural analysis of re-configured facility space, and design to conform with the IEBC requirements for alterations.

Seismic / Structural engineer will develop design criteria and perform analysis, modeling, and evaluation of nuclear structures exposed to normal operating loads and loads from natural phenomena hazards. The primary tasks will include writing structural design criteria for new projects, reviewing designs and supporting analyses submitted by external design teams for conformance to the design criteria, performing independent verification analyses to ensure that the submitted designs will satisfy the design criteria, and performing structural analyses and evaluations in support of safety analysis reports. Other tasks will include presenting results and conclusions from these analyses to Laboratory staff, the DOE, and the Defense Nuclear Facilities Safety Board.

Key Position Requirements

Position requires demonstrated broad-based, seismic/structural engineering experience with projects involving new facilities, facility modifications, and support/anchorage of equipment. Extensive technical knowledge in non-reactor nuclear facility structural design and seismic analysis is essential. Specific requirements include: Familiarity with DOE Safety Policy, Orders (420.1) and Implementing NPH Standards (1020, 1189) and experience working within the DOE complex; Demonstrated experience in facility structural design and seismic analysis; Demonstrated experience with material codes used for structural design (ACI, AISC, ASCE, IBC); Experience in performing dynamic analysis for non-reactor nuclear structures using commercially available codes such as SAP2000, GTSTRUDL, ANSYS or ABAQUS; Familiarity with structural reliability theory to include seismic fragility analysis, and, Demonstrated experience working in a team environment with members with diverse capabilities and experience. Desired capabilities include: Experience with the evaluation of component and seismic qualification of components (ASME, IEEE, SQUG); Experience with soil-structure interaction; and, Computer programming skills for engineering applications.

MS in Seismic or Structural Engineering, Engineering Mechanics, or equivalent combination of education and experience degree in seismic / structural engineering or equivalent is required. PhD in seismic or structural engineering is preferred. Licensing as a PE in NM is preferred, or the ability to become licensed in NM within a short period of time, is necessary.

Job Description (show details...)

Notes To Applicants

Participates as a member of the Earthquake Engineering Team with an emphasis on the dynamic response of structures systems and components to seismic input. Identifies and/or leads activities within a seismic/structural engineering discipline in support of facility assessments and design. Develops and participates in focused research and development to enhance capability and advance the state-of ¿the ¿art

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Job Number: 221046
Accounting Manager 4

Date Posted:	3/8/2011	**Division:**	CFO-DO
Employment Type:	LANL	**Organization:**	CFO-PRBEN
Appointment Type:	Regular	**Status:**	OPEN
Recruiting Scope:	Internal	**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$91,700.00	$122,800.00	$154,800.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

*Eligibility requirements: U.S. citizenship and at least 18 years old (DOE Manual 470.4-5)

Position Overview

This Accounting Manager 4 position is responsible for providing oversight and managing the operation of three teams within the Controller's organization. These include a Payroll team with a bi weekly payroll for approximately 9500 employees, a Craft Payroll team with a weekly craft payroll for approximately 800 craft employees, and the Benefits Accounting team for both LANS and LLNS employees. This position has the fiduciary responsibility of more than $1 B annually, which includes ensuring accurate cost disbursement and distribution of institutional salaries, overhead and related benefits in compliance with appropriate federal and state withholding regulations and internal controls.

Key Position Requirements

Demonstrated success in the leadership of a large financial organization responsible for the payroll and benefits operations. Experience in managing company payroll and benefit policies and procedures. Experience with planning, supervising and conducting financial analyses. Significant experience in payroll operations with strong problem solving skills and the ability to effectively and decisively resolve technical payroll and/or benefit related issues. Demonstrated line management and leadership capabilities. Demonstrated superior skills in presentation,

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CONTACTS

phone: 505-665-5627

email: jobs@lanl.gov

Job Number: 221060
Superintendent 3

Date Posted:	4/15/2011	**Division:**	MSS-DO
Employment Type:	LANL	**Organization:**	MSS-FWE
Appointment Type:	Limited Term 3 YEARS	**Status:**	Closed
Recruiting Scope:		**Number of Openings:**	1

Salary Band

Minimum	Mid	Maximum
$83,100.00	$111,700.00	$142,500.00

Clearance: Q (Position will be cleared to this level). Applicants selected will be subject to a Federal background investigation and must meet eligibility requirements for access to classified matter. Individuals applying for this position should review the following memorandum.

*Eligibility requirements: U.S. citizenship and at least 18 years old (DOE Manual 470.4-5)

Position Overview

Responsible for supervising and directing activities of non-reactor nuclear facility trained construction craftsmen, as assigned, and ensure effective resource utilization of assigned area labor, equipment, material and services for the Project Management and Maintenance Site Services Directorate. Oversees, supervises, and directs craft supporting Project/Construction Management for the execution and oversight of industrial/construction work in a non-reactor, nuclear facility. Primary work assignment will be TA55, NMSSUP-RLUOB Projects, with capability to perform other construction projects as required.

Key Position Requirements

Working knowledge of and experience with nuclear construction management/supervision of work activities, to include working with systems engineering design, safety/authorization basis, configuration management programs, work control, facility control systems, major construction projects, upgrades and renovations. Demonstrated ability to understand and interpret various physical, mechanical, and electrical documents, blueprints, drawings, and schematics. Prior work experience with an Earned Value Management System (EVMS) desirable. Demonstrated ability with cost reporting and/or tracking tools. Ensure strict adherence to federal and state rules, regulations, and

Tab 56 - Mello Aff #1, par. 71:
http://www.lanl.gov/projects/pcc/presentations/John-Bretzke_Prensation_for_Community_Forum.pdf

Pajarito Construction Activities

John Bretzke, Deputy Associate Director

Project Management & Site Services, LANL

June 16, 2010

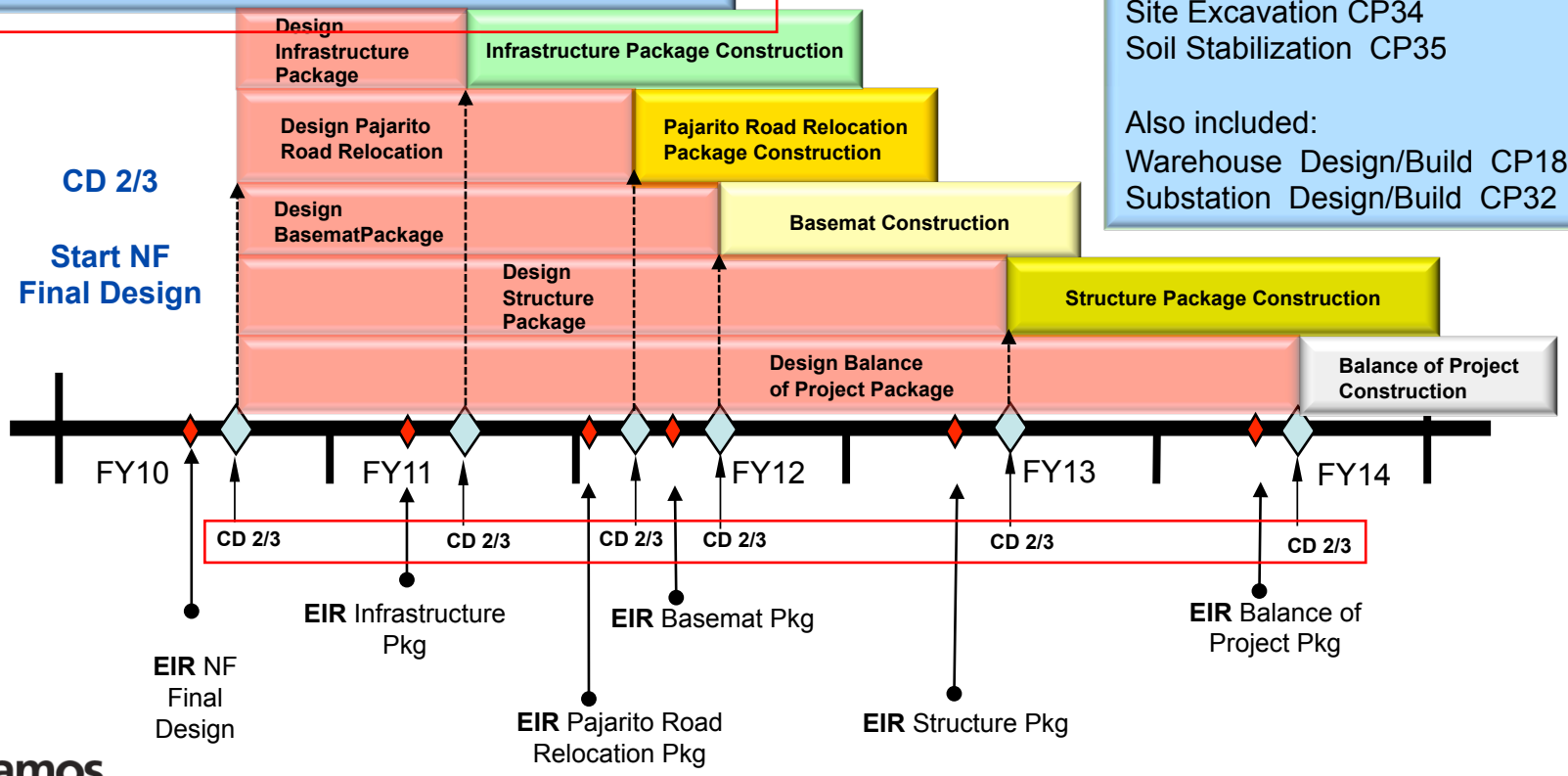
LA-UR-10-04023

CMRR Nuclear Facility Baselines

CD-2/3 Infrastructure Pkg – March 2011
CD-2/3 Pajarito Road Relocation Pkg – December 2011
CD-2/3 Basemat Pkg – March 2012
CD-2/3 Structure Pkg – March 2013
CD-2/3 Balance of Project Pkg –March 2014

Infrastructure Package Includes:
Batch Plant CP01
Temporary Utilities CP02
Site Preparation Laydown CP03
Site Utility Relocation CP33
Site Excavation CP34
Soil Stabilization CP35

Also included:
Warehouse Design/Build CP18
Substation Design/Build CP32



Tab 57 - Mello Aff #1, par 19, ref 6:
http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_reports&docid=f:sr201.111.pdf

Calendar No. 414

111TH CONGRESS *2d Session*	SENATE	REPORT 111–201

NATIONAL DEFENSE AUTHORIZATION ACT FOR FISCAL YEAR 2011

R E P O R T

[TO ACCOMPANY S. 3454]

ON

AUTHORIZING APPROPRIATIONS FOR FISCAL YEAR 2011 FOR MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE AND FOR MILITARY CONSTRUCTION, TO PRESCRIBE MILITARY PERSONNEL STRENGTHS FOR SUCH FISCAL YEAR, AND FOR OTHER PURPOSES

TOGETHER WITH

ADDITIONAL VIEWS

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

JUNE 4, 2010.—Ordered to be printed
Filed, under authority of the order of the Senate of May 28 (legislative day, May 26), 2010

tion line item approach was that the life cycle costs would be less using the GSA/third party approach. The committee is concerned that NNSA may be supplementing the construction costs. The committee also notes that ground breaking for the new building has been delayed until August 2011. For future budget submissions, the committee directs the NNSA to specifically identify funds for the KCRIMS project as a separate element of the RTBF and the purpose for which they will be spent.

The committee continues to believe that replacing the existing Chemical and Metallurgical Research facility is essential but that the new Chemical and Metallurgical Research Replacement (CMRR) facility has many unresolved issues including the appropriate size of the facility. CMRR will be a category I facility supporting pit operations in building PF–4. Now that the Nuclear Posture Review is completed the NNSA and the Department of Defense (DOD) are in a better position to ensure that the facility is appropriately sized. Elsewhere in this act the committee has recommended a provision to require construction project baselines and to track cost and schedule issues. The committee is very concerned that the NNSA follow the DOE 413 order series and project management and guidance. The NNSA is also directed to conduct a true independent cost estimate for the CMRR Nuclear Facility, phase III of the CMRR project. The committee is concerned that the phase III project is being divided into multiple sub-projects. Notwithstanding this management approach the committee directs the CMRR baseline to reflect all phases and subprojects for the purposes of the cost and schedule baseline provision and to be accounted for as a single project.

The committee recommends an increase of $20.0 million for the Los Alamos Neutron Science Center (LANSCE) refurbishment, Project 09–D–007. The LANSCE supports the only machine capable of performing nuclear cross section measurements of weapons materials to support the resolution of significant findings investigations. LANSCE refurbishment would also further enhance the ability of the NNSA to perform surveillance on the stockpile. The committee recognizes that there is considerable deferred maintenance at the LANSCE facility that will need to be addressed as the final design for the LANSCE refurbishment is determined. In the interim the committee authorizes the NNSA to use such funds in fiscal year 2011 as needed to maintain the facility while the design is finalized.

The committee recommends an increase of $10.0 million for the high explosive pressing facility at the Pantex Plant, Project 08–D–802 to accelerate construction of the facility. This new high explosive facility is needed for life extension programs and will provide a modern, safe, working environment for these high risk operations.

Defense Nuclear Nonproliferation programs

The committee recommends $2.7 billion for the Defense Nuclear Nonproliferation program, the same as the budget request. The National Nuclear Security Administration (NNSA) has management and oversight responsibility for the nuclear nonproliferation programs at the Department of Energy (DOE).

Tab 58 - Mello Aff #1, par. 59:
http://foreign.senate.gov/download/?id=4C65B25B-F3E8-4CF6-8660-36E21D639ECC

THE VICE PRESIDENT

WASHINGTON

September 15, 2010

The Honorable John F. Kerry
Chairman, Committee on Foreign Relations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

Since the New Strategic Arms Reduction Treaty (New START) was submitted to the Senate for advice and consent, questions posed during committee hearings on the Treaty have highlighted, among other things, the Administration's plans to modernize the U.S. nuclear weapons complex, in particular the President's budget request for FY 2011 and projected out-year requests to accomplish the missions of the Stockpile Stewardship and Management Programs. I write to assure the Committee of the Administration's strong support for this program.

As you know, the *Nuclear Posture Review* (NPR), published in April, addresses U.S. national security goals and details this Administration's commitment to sustaining an arsenal of nuclear weapons that meets 21st century standards of safety, security, and effectiveness. The entire Administration is committed to taking the steps necessary to realize this objective.

Our budgets seek to reverse five years of declining support for nuclear stockpile management. The President's FY 2011 budget request for weapons activities in the National Nuclear Security Administration (NNSA) provides the funds needed to "ramp-up" activity and revitalize the enterprise in the near term. We have submitted plans for significant funding increases, starting with a $624 million increase in FY 2011 and increasing to a $1.64 billion plus-up by FY 2015. This is a cumulative increase of more than $5.68 billion over the FY 2010 five-year plan. The FY 2011-2015 President's Budget was based on the best estimates available at that time, and reflected our assessment of necessary investments and the capacities to absorb increased funding.

Earlier this spring, the Administration provided reports to Congress describing our 10- and 20-year plans, respectively, to sustain and modernize nuclear delivery systems, and the nuclear stockpile and the associated infrastructure. As the President has demonstrated in these plans and in his budget, he recognizes that the modernization of the Nation's nuclear deterrent will require sustained higher-level investments over many years.

Out-year budgets are, by definition, projections built on assumptions. NNSA has used the time since the spring – when the NPR and New START were concluded – to work on updating initial assumptions. We now have a more complete understanding of stockpile requirements, including the life extension program needs. Similarly, the designs of key facilities such as the Uranium Processing Facility and the Chemical and Metallurgy Research Replacement Facility have progressed. Based on information learned since the submission of the President's FY 2011 budget and the report under section 1251 of the National Defense Authorization Act for FY 2010, we expect that funding requirements will increase in future budget years.

Later this fall, the Administration will provide the Congress with information that updates the Section 1251 report. At that time, and in our future budgets, we will address any deficiencies in the Future Years Nuclear Security Program. We are also prepared to brief the oversight committees and interested Senators as these programs progress, so that Congress can have full visibility into the program and confidence in our processes.

Finally, the Administration has actively engaged the House and Senate Appropriations Committees in support of the President's 2011 request, and we will continue to do so. Moreover, as further evidence of the President's commitment to an immediate start to his modernization initiatives, the Administration earlier this month recommended that the Committees provide for a rate of operations consistent with the President's request for NNSA weapons activities during any continuing resolution period.

This Administration has expressed its unequivocal commitment to recapitalizing and modernizing the nuclear enterprise, and seeks to work with Congress on building a bipartisan consensus in support of this vital project. I look forward to continued work with Congress to ensure that we accomplish our shared objective to maintain and strengthen U.S. nuclear security.

Sincerely,

Joseph R. Biden, Jr.

cc: The Honorable Richard G. Lugar
Ranking Member

Tab 59 - Mello aff 3, par 95, ref 79

The White House

Office of the Press Secretary

For Immediate Release November 17, 2010

Fact Sheet: An Enduring Commitment to the U.S. Nuclear Deterrent

President Obama has made an extraordinary commitment to ensure the modernization of our nuclear infrastructure, which had been neglected for years before he took office. Today, the Administration once again demonstrates that commitment with the release of its plans to invest more than $85 billion over the next decade to modernize the U.S. nuclear weapons complex that supports our deterrent. This represents a $4.1 billion increase over the next five years relative to the plan provided to Congress in May. This level of funding is unprecedented since the end of the Cold War.

In the five years preceding the start of this Administration, the National Nuclear Security Administration (NNSA) – charged with sustaining America's aging nuclear complex and stockpile – lost 20 percent of its purchasing power. As part of the 2010 Nuclear Posture Review, the Administration made a commitment to modernize our nuclear arsenal and the complex that supports it. To begin this effort, the President requested $7 billion for NNSA in fiscal year 2011 (FY 2011) – an increase of nearly 10 percent over the prior year.

Today's release of updated investment plans (in an update to the *'Section 1251 Report to Congress'*) shows this Administration's commitment to requesting the funding needed to sustain and modernize the nuclear complex. In particular, the Administration plans will:

- Add nearly $600 million in funding for FY 2012, resulting in a total planned FY 2012 budget request of $7.6 billion for NNSA weapons activities;
- Increase funding by $4.1 billion increase over the next five years relative to the plan provided to Congress in May – including an additional $340 million for the Uranium Processing Facility (Tennessee) and the Chemistry and Metallurgy Research Replacement (CMRR) facility (New Mexico); and
- Propose spending more than $85 billion for NNSA weapons activities over the next decade.

The above plans provide the best current estimate of costs for the nuclear weapons stockpile and infrastructure. As the UPF and CMRR facilities are only at the 45 percent design level, the Administration recognizes that the costs could change over time. At the present time, the range for the Total Project Cost for CMRR is $3.7 billion to $5.8 billion and the range for UPF is $4.2 billion to $6.5 billion. The Administration is committed to requesting the funds necessary to ensure completion of these facilities. The potential additional costs associated with these facilities are shown in the table below.

Planned Projections for Weapons Stockpile and Infrastructure Spending
(*then-year dollars in billions*)

Fiscal Year										
FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020
6.4	7.0	7.6	7.9	8.4	8.7	8.9	8.9 – 9.0	9.2 – 9.3	9.4– 9.6	9.4– 9.8

BLOG POSTS ON THIS ISSUE

January 19, 2011 6:50 PM EST
First Lady Michelle Obama: "When You Study Abroad, You're Helping to Make America Stronger"

The First Lady focuses on the importance of studying abroad in support of the President's "100,000 Strong Initiative" – a program that aims to increase the number of Americans who have the opportunity to study in China.

January 19, 2011 10:54 AM EST
President Obama Welcomes President Hu of China to the White House
At the Arrival Ceremony for the China State Visit, President Obama welcomes President Hu of China and calls for more productive cooperation between the two nations.

January 19, 2011 8:20 AM EST
Watch Live: The China State Visit
The President hosts Hu Jintao, President of the People's Republic of China, at the White House for an official State visit. Watch the Official Arrival Ceremony, State Dinner toasts, and more on WhiteHouse.gov.

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Tab 60

INTRODUCTION

Despite the Federal Defendants' good faith efforts to dissuade it, Plaintiff has insisted on bringing and continuing a premature challenge to the adequacy of the Department of Energy/National Nuclear Security Administration's ("DOE/NNSA" or "NNSA") analysis of potential environmental impacts from construction and operation of the proposed Chemistry and Metallurgy Research Replacement Nuclear Facility ("CMRR-NF") at Los Alamos National Laboratory ("LANL") in New Mexico. Plaintiff's Complaint should be dismissed.

The proposed CMRR-NF is a unique facility, central to LANL's mission and critical to the national security of the United States. The proposed facility, which will provide capabilities for special nuclear material analytical chemistry, materials characterization, and research and development, is critically necessary as a replacement for the 60-year-old Chemistry and Metallurgy Research Building ("CMR") at LANL that presently houses most of these activities. The CMR is outmoded and sits on a seismic fault trace.

NNSA has already completed extensive environmental review of the proposed CMRR-NF in accordance with the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-4370(f). This review culminated in a November 2003 Environmental Impact Statement ("EIS") and a February 12, 2004, Record of Decision ("ROD") that approved construction of CMRR-NF and the associated Radiological Laboratory Utility Office Building ("RLUOB"). Since the 2004 ROD, new developments and information have necessitated modifications in the design of the proposed CMRR-NF. But, for NEPA purposes, the purpose and need for the proposed CMRR Project have not changed, nor has the scope of operations to be carried out in the proposed CMRR-NF. The laboratory space in which key mission operations will be performed within the proposed facility has

Tab 61

the Atomic Weapons Establishment in the United Kingdom from 2006 to 2009. From 1977 to 2005, I worked at Sandia National Laboratories, in Albuquerque, New Mexico, in Pulsed Power Sciences, Microtechnologies, Infrastructure, and Security. I am a graduate of the University of Michigan, and obtained my Ph.D. from the Massachusetts Institute of Technology. I am a Fellow of the American Association for the Advancement of Science and the Institute of Physics, and I am a member of the American Physical Society and the American Nuclear Society.

2. I oversee the proposed Chemistry and Metallurgy Research Replacement Project ("CMRR Project"), which is the subject of this litigation. This declaration provides information on the role of NNSA, the importance of the CMRR Project to our national defense, and the breadth of environmental analysis NNSA has performed and will perform to evaluate the potential environmental impacts of the proposed CMRR Project. The information contained herein is based on my personal knowledge and information provided to me during the performance of my official duties.

Tab 62 - Mello Aff #2, Par 4a

Published on *National Nuclear Security Administration* (http://nnsa.energy.gov)

Administrator D'Agostino on Nuclear Forces and Nonproliferation

Release Date:
Thu, 2010-10-28

Good morning, and thank you for the opportunity to join you today. Once again, Los Alamos and the Woodrow Wilson Center have done an outstanding job bringing together some of the leading voices in nuclear security to take a look at where things stand today and look ahead to the challenges we continue to face.

A lot has changed since we gathered here last year. In fact, I think it is safe to say that this has been one of the most eventful, important and rewarding years in NNSA's history. It will be remembered as one of the key moments in the 65-year history of the nation's nuclear deterrent.

Earlier this year, we saw the release of a Nuclear Posture Review that adopts a 21st century approach to nuclear security and brings renewed emphasis to reducing global nuclear dangers.

We saw the signing of the New START Treaty that will reduce U.S. and Russian deployed strategic nuclear weapons to their lowest levels in decades. We hope that treaty will be ratified soon. We saw the completion of an historic Nuclear Security Summit – which gathered the leaders of close to 50 countries to take concrete steps toward securing all vulnerable nuclear material around the world within four years.

We saw the release in February of the President's FY2011 Budget Request, which includes a 13 percent increase for NNSA, including a 25.7 percent increase in our nuclear nonproliferation programs and a significant long-term commitment to many of our key initiatives in Defense Programs.

Of course, all of this follows the President's decision to use his first foreign policy speech, during his first trip abroad to highlight the need for a global nuclear security agenda. That "Prague Agenda" is a core part of NNSA's national and international security mission.

Taken together, all of these developments point to the emergence of a new national consensus on the importance of our mission and the need to invest in the resources and infrastructure required to transform a Cold War nuclear weapons complex into a modern, 21st Century Nuclear Security Enterprise. For too long, our nation lacked that consensus, and as a result our enterprise lacked clear direction. Now, thanks to the hard work of many people – including many here in this room – we have a clear path forward.

I also think this has been a year of impressive accomplishments across our enterprise. As President Obama said in his Prague speech, the threat of a terrorist acquiring nuclear weapons "is the most immediate and extreme threat to global security." The President has outlined an ambitious, three-pronged strategy for addressing this threat:

- Reduce nuclear arsenals;
- Halt the proliferation of weapons to additional states; and
- Prevent terrorists from acquiring weapons or the materials to build them.

In each of those areas, NNSA has taken impressive steps forward. Our Defense Nuclear Nonproliferation Program has removed or disposed of 613 kilograms of nuclear weapons-usable highly enriched uranium fuel

and plutonium (enough for over 24 nuclear weapons) from 12 countries. This included the complete removal of all weapons-usable HEU from 5 countries.

In order to minimize the use of HEU in civilian nuclear programs, NNSA and its international partners have converted or verified the shutdown of 9 research reactors that were using HEU. In order to prevent terrorists from acquiring materials that could be used in a so-called “dirty bomb,” NNSA recovered approximately 4,000 radiological sources containing more than 50,000 decayed curies in 2009.

In addition, in September we reached the 400MT milestone of Russian weapons-origin HEU converted to LEU under NNSA’s HEU Transparency Program. That HEU is downblended into LEU fuel for domestic energy production here in the U.S. Russian HEU is responsible for approximately 10% of all electricity produced in this country. We remove approximately 82kgs of HEU per day from Russian stockpiles and when the Program ends in 2013, we will have removed 500MT of HEU, all used to produce electricity in the U.S.

As part of our global campaign to strengthen international capabilities to prevent nuclear smuggling, NNSA upgraded physical security at more than 185 vulnerable buildings around the world that contained high-priority nuclear and radioactive material. We have provided radiation detection equipment to 334 sites around the world and have equipped 31 major ports with equipment to detect dangerous nuclear and radiological material. We are working in over 55 countries.

Through our Next Generation Safeguard Initiative we are working to develop new techniques and technologies to modernize those international safeguards and make them more effective in preventing countries from diverting nuclear materials and technologies to military purposes.

We shut down the last plutonium-producing reactor in Russia with assistance from six international donors, and continue to monitor over 10 metric tons of weapons-grade plutonium that was produced by these, now shut down, reactors.

I am proud that NNSA continues to lead the way in keeping the American people safe from global nuclear threats.

That same commitment drives our work in Defense Programs, as well. As you know, the NPR highlighted our commitment to move toward the peace and security of a world without nuclear weapons, as well as our responsibility to ensure that the United States nuclear stockpile remains safe, secure and effective, for as long as nuclear weapons exist.

We have made tremendous progress in reducing the stockpile and in increasing transparency about the size of the stockpile. The stockpile will be less than one-quarter of what it was at the end of the Cold War—the lowest level in more than 50 years.

These stockpile reductions send the right message to the rest of the world that the U.S. is committed to Article VI of the NPT, and helped create positive momentum for the 2010 NPT Review Conference.

However, as our stockpile gets smaller, it becomes increasingly important that remaining forces are safe, secure and effective, and, to mitigate future technical and geopolitical risks, that our nuclear infrastructure is able to respond.

That is why is it is critical that we complete the design and construction of key facilities like the Uranium Processing Facility at Y-12 and the Chemistry and Metallurgy Research Replacement (CMRR) project at Los Alamos.

That is why we need to continue to push the frontiers of science and discovery. We are leading the way on exa-scale computing, improving our understanding of the behavior of materials in extreme environments, and pioneering inertial fusion energy. These are ground breaking developments that are supporting our stockpile requirements, while also providing the nation the tools to tackle broader challenges.

Finally, we need to ensure we are attracting the best and brightest to our field. The nuclear security

laboratories, the complex of supporting facilities, and the scientists and engineers across our enterprise constitute a very unique and critical set of skills and capabilities that ensure our nation's security. These capabilities are not only essential for maintaining the nuclear stockpile, but also addressing the broader array of nuclear security challenges.

At their core, these capabilities come down to one thing: our people. In order to execute the President's vision, both for stockpile stewardship and nonproliferation, the science, technology and engineering base at the labs must be reinvigorated.

We need to retain the skills and capabilities we currently possess, and we need to attract the next generation's most promising scientists, engineers and technicians. We must give them state of the art facilities in which to work. And we must continue to give them a clear mission and a clear governance model that maximizes the amount of resources directed toward mission work.

As an enterprise, we must rise to meet these challenges together. In the coming months, we will be issuing a new NNSA strategic plan that builds around five core commitments. We are going to:

- Implement the nonproliferation elements of the President's Nuclear Security Strategy;
- Assure the safety, security, and effectiveness of the nation's nuclear stockpile;
- Recapitalize the nuclear infrastructure and deterrent capability;
- Strengthen the science, technology, and engineering base that underpins everything we do in NNSA; and
- Continue NNSA management reforms, so we can to improve our cost effectiveness.

Together, these five commitments represent a clear path forward for our enterprise. And that brings me to the topic of today's discussion.

As you may remember, when we met last year, I closed my remarks by challenging you to take a hard look at some key questions in your panel discussions. I would like to do the same today. For Panel I:

- The President has described his vision of a world without nuclear weapons. What are the functions the nuclear deterrent provides the nation today, and how will the nation accomplish those functions in the absence of nuclear weapons?
- What parts of our current nuclear weapons infrastructure will be needed in the absence of those weapons to assure that we can reliably detect, understand, and potentially respond to breakout from an adversary?

For Panel II:

- How do the NNSA capabilities affect the nation's efforts in Nonproliferation, Counter Proliferation, Arms Control and Disarmament?
- How do we retain the ability to support verification and intelligence activities for the Nation while reducing our nuclear weapons design and production requirements?

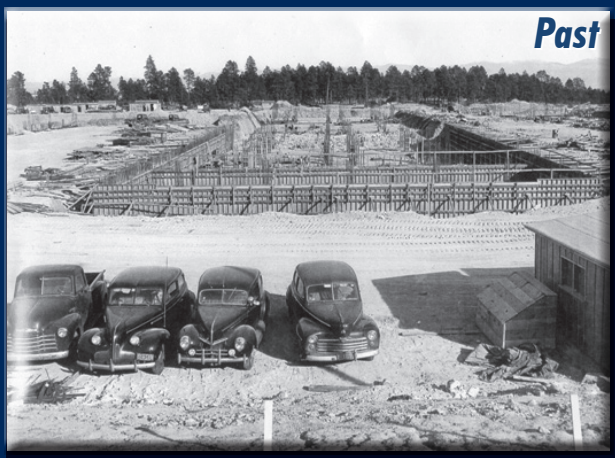
And for both panels: What can NNSA do to assure that we have the skilled people to support the efforts your panels will discuss?

Answers to these questions will build on the thinking that has already been done, and help define the capabilities required to support the U.S. nuclear deterrent, and underpin our nonproliferation, nuclear counterterrorism, and arms control activities.

Thank you again for your time and participation in this valuable effort, I look forward to hearing the rich discussion of your panels.

DOE/EIS-0350-S1
April 2011

Tab 63



Draft Supplemental Environmental Impact Statement for the Nuclear Facility Portion of the Chemistry and Metallurgy Research Building Replacement Project at Los Alamos National Laboratory, Los Alamos, New Mexico

Summary

Conceptual Drawing CMRR Facility

OVERVIEW

The National Nuclear Security Administration (NNSA) is a semi-autonomous agency within the Department of Energy (DOE). NNSA is responsible for the management and security of the nation's nuclear weapons, nuclear nonproliferation and naval reactor programs. NNSA is also responsible for administration of the Los Alamos National Laboratory (LANL).

Since the early 1950s, DOE has conducted analytical chemistry and materials characterization work in the Chemical and Metallurgy Research Building (CMR) at LANL. CMR supports various national security missions including nuclear nonproliferation programs; the manufacturing, development, and surveillance of pits (the fissile core of a nuclear warhead); life extension programs; dismantlement efforts; waste management; material recycle and recovery; and research. CMR is a Hazard Category 2 nuclear facility with significant nuclear material and nuclear operations, and the potential for significant onsite consequences.

The CMR is almost 60 years old and near the end of its useful life. Many of its utility systems and structural components are aged, outmoded, and deteriorated. Recent geological studies identified a seismic fault trace located beneath two of the wings of CMR, which raised concerns about the structural integrity of the facility. Over the long term, NNSA cannot continue to operate the mission-critical CMR support capabilities in the existing CMR building at an acceptable level of risk to worker safety and health. NNSA has already taken steps to minimize the risks associated with continued operations at CMR. To ensure that NNSA can fulfill its national security mission for the next 50 years in a safe, secure, and environmentally sound manner, NNSA proposed in 2002 to construct a CMR replacement facility, known as the CMRR.

NNSA has undertaken extensive environmental review of the CMRR project; after thoroughly analyzing its potential environmental impacts and considering public comments, NNSA issued a Final EIS in November 2003 and a Record of Decision (ROD) in February 2004. The ROD announced that CMRR would consist of two buildings: a single, above-ground consolidated special nuclear material-capable, Hazard Category 2 laboratory building (the CMRR-NF), and a separate but adjacent administrative office and support building, the Radiological Laboratory/Utility/Office Building (RLUOB). Construction of the RLUOB is complete and radiological operations are scheduled to begin in 2013.

Since issuance of the 2004 ROD, new developments have arisen indicating that changes to CMRR are appropriate. Specifically, a new site-wide analysis of the geophysical structures that underlay the LANL area was prepared. In light of this new geologic information regarding seismic conditions at the site, and more detailed information on the various support functions and infrastructure needed for construction such as concrete batch plants and lay-down areas, NNSA has proposed changes to the design of CMRR-NF. Even with these changes, the scope of operations remains the same as before (the 2004 ROD), as does the quantity of special nuclear material that can be handled and stored in CMRR-NF.

Though the changes would affect the structural aspects of the building and not its purpose, NNSA elected to prepare a Supplemental EIS (SEIS) to address the ways in which the potential environmental effects of the proposed CMRR-NF may have changed since the project was analyzed in the 2003 EIS. Development of the SEIS includes a scoping process, public meetings, and a comment period on a draft SEIS to ensure that the public has a full opportunity to participate in this review. Because NNSA decided in the 2004 ROD to build CMRR – as a necessary step in maintaining critical analytical chemistry and materials characterization capabilities at LANL – the SEIS is not intended to revisit that decision. Instead the SEIS is limited to supplementing the prior analysis by examining the potential environmental impacts related to the proposed change in CMRR design. So in addition to the no-action alternative (proceed with