

Background

NNSA has assigned support work to LANL for the stockpile stewardship and management program, which is critical to NNSA's mission of providing the Nation with nuclear weapons, ensuring their safety and reliability, and supporting programs that reduce nuclear proliferation. The Chemistry and Metallurgy Research (CMR) Building in TA-3 is a critical element of LANL's mission support to NNSA. The CMR Building was designed and built between 1949 and 1952 as an actinide chemistry and metallurgy research facility. An addition (Wing 9) was constructed in 1960 to also give the CMR Building the capability of remote handling of radioactive materials in hot cells. CMR's operational capabilities currently include analytical chemistry, material characterization, and actinide research and development. These capabilities are not available elsewhere in the DOE Complex.

The CMR Building was designed to comply with the building codes in effect at the time of its construction. In 1992, after the CMR Building had been in continuous operation for approximately 40 years, DOE initiated a program of building upgrades to address safety, reliability and security issues with the intent of extending the life of the facility for another 20 to 30 years. However, in 1997 and 1998 a number of operational, safety and seismic issues were identified that seriously affected the long-term viability of the CMR Building and its critical research functions. DOE made the decision to reduce the planned building upgrades and limit the design life of the facility to the year 2010. In January 1999, the DOE approved a risk management strategy for continuing the mission-critical research capabilities. The strategy included restricting some activities at the CMR Building to ensure safe operations while moving forward with long-term facility and site planning to relocate the CMR capabilities elsewhere at LANL by 2010. In July 2002, NNSA released the Notice of Intent (67 FR 48160) to prepare an EIS for a proposed replacement project for the CMR Building.

The final CMRR EIS was issued in November 2003. The EIS evaluated four main alternatives for replacement of the CMR Building, plus the no action alternative. Alternative 1 (NNSA's Preferred Alternative) was to construct the CMRR Project at the TA-55 site; this alternative was selected by NNSA in its 2004 ROD. Figure 1 delineates the boundaries of the proposed construction site as it was analyzed in the CMRR EIS. The location of the CMRR Facility was originally proposed for location within TA-55 either at the southeast corner of TA-55 near the intersection of Pajarito Road and Pecos Drive, at the west side of TA-55 between the Plutonium Facility and TA-48, or at the east side of TA-55 in the existing parking area. An additional area of potential disturbance was analyzed on the south side of Pajarito Road for use as a parking lot for displaced vehicle parking.

The total square footage for the administrative offices and support functions building will not exceed 200,000 square feet and the total disturbed area of the Phase A components will be about 4.0 acres. A utility support area of approximately 25,000 square feet is included in the total estimated square footage for the administrative offices and support

functions building. An additional 2.0 acres would be disturbed for construction lay down area and 5.0 acres for the parking lot.

Proposed Action

In responses to changes to nuclear facility Design-Basis Threat (DBT) guidance issued by DOE in October 2004, which requires moving lower hazard, lower security operations outside of and away from the immediate vicinity of the PIDAS at TA-55, NNSA must now consider moving the Phase A components of the CMRR Facility from the originally planned location at TA-55. Two alternative site locations for Phase A components (Figure 1) have been identified. This SA will consider the impacts of these changes to the project and compare these to the environmental impact analyses performed in the CMRR EIS.

In 2003, the new structures proposed for the CMRR Project were in the conceptual design stage and, as a result, were not described in great detail within the CMRR EIS. Since the ROD was issued in February 2004, NNSA has completed the conceptual design and has more clearly identified the structural requirements and the building layouts. The conceptual design identified a three-phased approach to completing the project. The CMRR Facility Phase A Project consists of the construction of the administrative offices and support functions building, a connecting tunnel together with a small entrance control structure, and the utility support area.

The Phase A administrative offices and support functions building will house about 20,000 net square feet of radiological laboratories capable of handling radiological (less than 8.4 grams plutonium 239 equivalent) quantities of special nuclear material (SNM). The building will also include office space for CMRR workers located outside of the TA-55 PIDAS, a Training Center with space for classrooms and training personnel, and an Operations Center to monitor functions for all of the CMRR facility. A utility building would be constructed to provide utility services (including heating and chilled water, potable hot and cold water, compressed air, and process gasses) for all CMRR Facility components. Phase A construction start is planned for the fourth quarter of Fiscal Year (FY) 05 and will end in FY 07 or 08.

Potential Consequences of Proposed Action

This section addresses the potential environmental impacts of the Proposed Action and compares them to the impacts that were bounded and analyzed in the CMRR EIS. Environmental impacts are identified and addressed based on the sliding scale approach discussed in DOE's NEPA guidance (DOE 1993); that is, certain aspects of the Proposed Action have a greater potential for creating environmental impacts than others. Therefore, they are discussed in greater detail in this SA than those aspects of the action that have little potential for effect. For instance, the Proposed Action could affect potential threatened and endangered species habitat, while it is not expected that visual resources would be affected. Tables 1 and 2 list the potential environmental consequences of each location alternative and identify those that are not likely to be affected by the Proposed Action.

Alternative Location 1: West of TA-55

Preliminary review of the CMRR EIS indicates that selecting Alternative Location 1 immediately west of the TA-55 PIDAS near TA-48 would not have any further environmental impacts than those analyzed in the CMRR EIS. The proposed area for CMRR Facility Phase A components falls within the study area outlined in Figure 1 that was considered in preparation of the final EIS. The area of disturbance west of the TA-55 PIDAS would be less than the 4 acres analyzed in the CMRR EIS for the Phase A components of the CMRR Facility. Additional disturbance of up to 2.0 acres for construction lay down and 5.0 acres for a new parking lot south of Pajarito Road were included in the total 26.75 acres of affected land analyzed in the EIS. The western portion of TA-55 has access to closely located utilities; electrical, water, sanitary sewer and gas utilities are present between TA-55 and TA-48 and are readily accessible. Short pipelines and electric service lines would need to be installed to service the CMRR Facility. The pedestrian/utility tunnel that is part of the CMRR Facility Phase A, would be constructed from the Alternative Location 1 site underground into the TA-55 PIDAS area for future connection to the CMRR Hazard Category 2 nuclear building, which would be part of a later phase of the overall project.

The location description for the Preferred Alternative, found on page 2-11 of the CMRR EIS, states that the CMRR Facility would be located either on the southeast corner near the Pajarito Road and Pecos Road intersection (on the east side of TA-55 where the parking lots are currently located); or on the west side of TA-55 between the TA-55 Plutonium Facility and the TA-48 boundary. The latter location is similar to the area described in Alternative Location 1, except that the proposed construction site would slightly extend across the TA-55/TA-48 boundary into the edge of TA-48.

Cultural resource considerations: As noted in Sections 3.8 and 4.3.7 of the CMRR EIS, there are no prehistoric sites within TA-55, but there is one site eligible for the National Register within TA-48 a few hundred feet from the TA-48/TA-55 boundary. The mitigation for adverse effects to this site would be through avoidance. Alternative Location 1 for CMRR Facility Phase A would extend into TA-48 and extra precautions would need to be taken to avoid this site during construction activities. LANL archaeologists would flag the boundaries of the prehistoric site with tape or some other prominent marker and would provide oversight during construction.

The CMRR EIS did not specifically discuss cultural resources located within the proposed TA-50 area for parking spaces displaced by the CMRR Facility, on the south side of Pajarito Road. There are several pre-Manhattan era homestead features present in this area that were the subject of a July 2001 cultural resource report to the State Historic Preservation Office (SHPO) prepared for a different proposed project. The Cerro Grande Fire burned through this area, so that there are no standing cabin remains, but several homestead features are present, including a cistern, a dugout complex, scattered remains of a wooden corral and a fence line, and a trash disposal area. A separate consultation letter to the SHPO was submitted in May 2003 for the proposed CMRR Facility parking lot. The letter describes NNSA's proposal to execute a Memorandum of Agreement (MOA) between the NNSA and the SHPO. The MOA would ensure that adverse effects

of destroying the homestead remains through construction actions would be resolved first through data recovery. LANL archaeologists would perform the data excavation fieldwork, submit any artifacts and samples from the excavation for analysis, and prepare an excavation report for the SHPO.

Biological resource considerations: Consultation was initiated in April 2003 with the U.S. Fish and Wildlife Service (the Service) for the CMRR Project as described in the CMRR EIS that included the parking lot area south of Pajarito Road. The NNSA's determination of affect was that there would be no direct effects from the CMRR Facility north of Pajarito Road but that parking south of Pajarito Road would be in close proximity to potential Mexican spotted owl habitat and that there could be possible indirect affects from nighttime lighting. NNSA took a conservative approach and determined that the proposed CMRR Project was "likely to adversely affect" the Mexican spotted owl's potential habitat area. After telephone discussions with Service staff during which the Service noted that the likely affects of the CMRR Project on the Mexican spotted owl potential habitat would be insignificant because of the small area of disturbance and the fact that the habitat had not been occupied for at least 8 years, the NNSA changed its determination of affect for the proposed project to "may affect, not likely to adversely affect" any individual Mexican spotted owls or critical habitat for the species. The Service concurred in an April 2003 response letter with NNSA's determination of affect for the CMRR Project. As there would be no change to the area or use originally described in the consultation package, the April 2003 Service response letter completed the necessary Endangered Species Act section 7 consultation requirements for CMRR Facility actions at the subject location.

Conclusions: If NNSA elects to build CMRR Facility Phase A at Alternative Location 1, the environmental impacts would not exceed the bounding conditions analyzed in the CMRR EIS, provided construction and operations comply with the bounding requirements in Table 2-1 (page 2-21) and Table 2-2 (page 2-26) of the CMRR EIS. The construction footprint for Phase A should be 4 acres or less with a total floor area of 200,000 square feet or less. Additional disturbed acreage would include up to 2 acres for construction laydown and 5 acres for a new parking lot. The CMRR EIS describes a security station associated with the underground tunnel. The pedestrian/utility tunnel that is part of the CMRR Facility Phase A would be constructed from the Alternative Location 2 site under Pajarito Road into the TA-55 PIDAS area for future connection to the CMRR Hazard Category 2 nuclear building, which would be part of a later phase of the overall project. The utilities area is described in the CMRR EIS and its square footage is included in the 200,000 square foot figure. Thus, CMRR Facility Phase A as currently proposed is bounded by the CMRR EIS description provided the total area of all buildings is 200,000 square feet or less.

**Table 1. Potential Effects of the Proposed Action, Alternative Location 1
Location of CMRR Phase A West of TA-55**

Resource Area	CMRR EIS/ROD	Proposed Action Alternative Location 1
Land Use	Total area of land disturbance for buildings, parking lots and construction lay down areas is 26.75 acres. CMRR Facility Phase A would disturb about 4 acres, plus 2 acres for construction lay down and 5 acres for a new parking lot.	No changes projected.
Visual Resources	General appearance of the CMRR Facility structures would be consistent with the industrial nature of other buildings within the TA-35, TA-50, TA-55 complex.	No changes projected.
Site Infrastructure	LANL infrastructure resources would be adequate to support proposed mission activities.	No changes projected.
Air Quality	No major changes in emissions or air pollutant concentrations at LANL.	No changes projected.
Noise	Temporary and minor noise associated with construction; no change in noise impacts on the public outside of LANL.	No changes projected.
Geology and Soils	LANL activities are not expected to change geology in the area, trigger seismic events, or substantively change slope stability	No changes projected.
Surface Water	Storm water runoff from construction activities could potentially impact downstream surface water resources, but would be minimized through implementation of a Storm Water Pollution Prevention Plan. No surface water impacts are expected as a result of operations.	No changes projected.
Groundwater	No impacts on groundwater are anticipated for construction and operation of the CMRR Project.	No changes projected.
Terrestrial Resources	The CMRR EIS noted the potential loss of some wooded areas, depending on the site selected.	Some trees in the area west of the TA-55 PIDAS would be lost in building on this location. No changes projected.
Threatened and Endangered Species	No likely adverse effects expected to potential Mexican spotted owl habitat. Concurrence of U.S. Fish & Wildlife Service obtained for "may affect, not likely to adversely affect" determination finding.	No changes projected.
Cultural Resources	One prehistoric site eligible for the National Register of Historic Places located west of the TA-55/TA-48 boundary to be mitigated by avoidance. A memorandum of agreement would be signed between NNSA and SHPO to mitigate any adverse effects.	Construction of parking lot south of Pajarito Road would result in loss of several historic features related to pre-Manhattan era homesteads. Data recovery would mitigate loss of these resources. Concurrence of State Historic Preservation Officer would be obtained prior to start of construction.

affect, not likely to adversely affect” either individual Mexican spotted owls or potential habitat for the species has been made by NNSA and is under consideration for concurrence by the U. S. Fish and Wildlife Service. Thus, construction of CMRR Phase A at Alternative Location 2 would have environmental impacts that are bounded by the analysis of impacts presented in the CMRR EIS.

**Table 2. Potential Effects of the Proposed Action, Alternative Location 2
Location of CMRR Phase A South of Pajarito Road**

Resource Area	CMRR EIS/ROD	Proposed Action Alternative Location 2
Land Use	Total area of land disturbance for structures, parking lots and construction lay down areas is 26.75 acres. CMRR Phase A would disturb about 4 acres, plus 2 acres for construction lay down and 5 acres for a new parking lot.	No changes projected.
Visual Resources	General appearance of the CMRR Facility would be consistent with the industrial nature of other buildings within the TA-35, TA-50, TA-55 complex.	No changes projected.
Site Infrastructure	LANL infrastructure resources would be adequate to support proposed mission activities. Up to 1,200 linear feet of pedestrian/utility tunnel would be required.	Some additional trenching would be required to relocate and connect utilities. Also, a pedestrian/ utility tunnel would be constructed under Pajarito Road to connect with the future CMRR Hazard Category 2 nuclear structure. The linear footage of the tunnel is bounded by the CMRR EIS analysis.
Air Quality	No major changes in emissions or air pollutant concentrations at LANL.	No changes projected.
Noise	Temporary and minor noise associated with construction; no change in noise impacts on the public outside of LANL.	No changes projected.
Geology and Soils	LANL activities are not expected to change geology in the area, trigger seismic events, or substantively change slope stability	No changes projected.
Surface Water	Storm water runoff from construction activities could potentially impact downstream surface water resources, but would be minimized through implementation of a Storm Water Pollution Prevention Plan. No surface water impacts are expected as a result of operations.	No changes projected.
Groundwater	No impacts on groundwater are anticipated for construction and operation of the CMRR Project.	No changes projected.
Terrestrial Resources	The CMRR EIS noted the potential loss of some wooded areas, depending on the site selected.	Some trees in the area due south of the Pajarito Road/Pecos Drive intersection and along the mesa edge would be lost in building on this location. No changes projected.

Resource Area	CMRR EIS/ROD	Proposed Action Alternative Location 2
Threatened and Endangered Species	No likely adverse effects expected to Mexican spotted owl habitat. Concurrence of U.S. Fish & Wildlife Service to be obtained.	Re-initiation of consultation necessary to reflect additional disturbance. No changes to affects projected. Concurrence of U.S. Fish & Wildlife Service would be obtained prior to construction.
Cultural Resources	Construction and operation impacts to be resolved by avoidance or memoranda of agreement between NNSA and SHPO to mitigate any adverse effects.	Data recovery of historic features on south side of Pajarito Road in proposed area of building construction and parking lot would mitigate loss of these resources. Data recovery and final concurrence of State Historic Preservation Officer would be obtained prior to start of construction.
Public Health-Radiological	The average annual dose to an individual in the population is 0.0063 mrem for CMRR operations compared to the annual limit of 10 mrem established for DOE operations in 40 CFR 61. Majority of the CMRR dose from the Hazard Category 2 laboratory.	No changes projected.
Environmental Justice	No disproportionately high or adverse impacts to minority or low-income populations identified.	No changes projected.
Waste Management	Generation of solid nonhazardous waste, hazardous waste, sanitary waste, and radioactive waste would be within the existing capacity of waste treatment and disposal facilities available to LANL.	No changes projected.

Conclusion

The CMRR EIS analyzed four different action alternatives, plus the no action alternative, for the replacement of the aging CMR building at LANL and evaluated the environmental impacts of construction and operations for each of these alternatives. In its ROD for the CMRR EIS, NNSA announced its decision to select the Preferred Alternative for construction of a new CMRR facility at TA-55. New security considerations at LANL have led to proposals for a change to the site location of the administrative offices and support functions building that would include radiological laboratory space and utilities support, a connecting tunnel, and a small access control station. This Phase A component of the CMRR Project would now be located to one of two possible locations in or near Technical Area (TA) 55 that differ slightly from the proposed locations for these structures identified and analyzed in the CMRR EIS. The CMRR EIS provides the NEPA compliance analysis for the Preferred Alternative projected activities. This SA compares key impact assessment parameters of this proposal to the CMRR Project evaluated in the CMRR EIS and provides an explanation of any differences between the current proposal and the Preferred Alternative described in the ROD.

