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Floodplain Assessment for the Technical Area 16-0969 Neighborhood Parking Improvements Project

Los Alamos National Laboratory

Los Alamos
NATIONAL LABORATORY

Prepared for: U.S. Department of Energy
National Nuclear Security Administration
Los Alamos Field Office

Prepared by: Environmental Protection and Compliance Division
Stormwater Permitting and Compliance Team
Los Alamos National Laboratory

Editing and Layout by: Communications and External Affairs
Technical Editing and Communications
Los Alamos National Laboratory

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
CFR	Code of Federal Regulations
DOE	(U.S.) Department of Energy
EPA	Envirionmental Protection Agency
EO	Executive Order
LANL	Los Alamos National Laboratory
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
RCRA	Resource Conservation and Recovery Act
SWMU	Solid Waste Management Unit
TA-16	Technical Area 16

INTRODUCTION

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the U.S. Department of Energy (DOE), is proposing new construction in Technical Area 16 (TA-16) at Los Alamos National Laboratory (LANL). The proposed construction in the neighborhood of Building TA-16-0969 is intended to improve safety for pedestrians; improve safety for drivers; and improve parking areas to increase the safety, organization, and efficiency for multiple types of vehicles. The project activities within the 100-year floodplain include a new parking area entrance/exit, improved pedestrian pathways, and an improved road with new pedestrian pathway (Figure 1).

Title 10 Code of Federal Regulations (CFR) Part 1022 was promulgated to implement federal agency (e.g., DOE) requirements under Executive Order 11988, Floodplain Management (EO 1977). A floodplain is defined in 10 CFR 1022 as "the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands," and a base floodplain as "the 100-year floodplain; that is, a floodplain with a 1.0 percent chance of flooding in any given year" (CFR 2003). This floodplain assessment evaluates potential impacts to floodplain values and functions from implementation of the proposed action, identifies alternatives to the proposed action, and allows for meaningful public comment.

DOE/NNSA published this floodplain assessment for a 15-day public review and comment period. Please provide comments on this floodplain assessment to Karen Armijo at

Email: karen.armijo@nnsa.doe.gov

or

Mail: U.S. Department of Energy
Los Alamos Field Office
Attn: Karen Armijo
3747 West Jemez Road
Los Alamos, NM 87544

After the close of the public comment period and before issuing a floodplain statement of findings, DOE/NNSA will reevaluate the practicability of alternatives to the proposed floodplain action and the mitigating measures, taking into account all substantive comments received during the public comment period. After issuing a floodplain statement of findings, DOE/NNSA shall allow at least 15 calendar days of public review before implementing a proposed floodplain action.

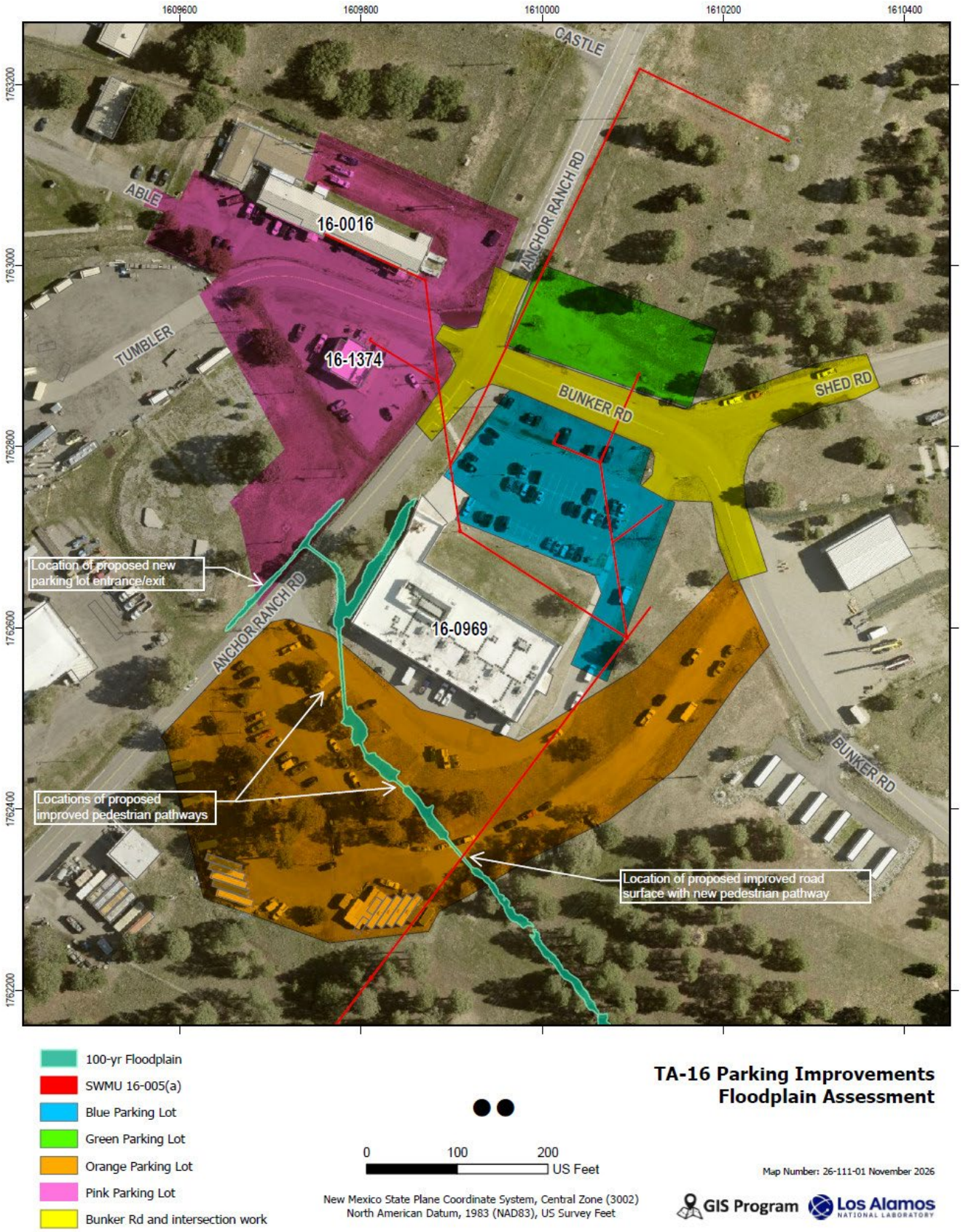

Figure 1. Proposed TA-16-0969 Neighborhood Parking Improvements Project and the Water Canyon 100-year Floodplain.

BACKGROUND

LANL experienced substantial increases in workforce growth over the past 10 years. Limited parking availability is common throughout the facility, which often results in personal and government vehicles being parked in non-parking-designated areas, such as road shoulders (LANL 2022a, LANL 2022b). While the LANL Site-Wide Environmental Impact Statement (DOE 2026) identified a current 2:1 gap in parking across the lab, this project will be one of several sites that will alleviate this pressure on government and personal vehicle parking.

Recent facility analysis identified the need to improve safety for pedestrians and drivers in the neighborhood of Building TA-16-0969. The proposed project will add accessibility parking and improve the organization and efficiency of parking for multiple types of vehicles, such as private vehicles, government vehicles, and utility task vehicles. The project proposes to modify existing areas being used for parking to applicable industry, national, and state codes; expand existing parking area; add a new parking area; improve pedestrian pathways; and improve two intersections.

The segment of the Water Canyon 100-year floodplain, which is also the base flood elevation, runs roughly northwest to southeast in the proposed project location (Figure 1). The segment of floodplain is on the mesa top and consists of roadside swales, culverts, and drainage ditches (Figure 2). The area is developed with buildings, paved and gravel parking areas, paved and gravel sidewalks, and drainage culverts.



Figure 2. Example of the Water Canyon Floodplain in Proposed Project Area.

PROJECT DESCRIPTION

The project proposes to construct or refurbish several areas in the TA-16-0969 neighborhood (Figure 1). In the Green Parking Lot, asphalt paving would be placed over the existing asphalt millings, and new striping and signs would be installed. Bunker Road and its intersections with Anchor Ranch Road and Shed Road (Yellow shaded area) would be repaved with asphalt and crosswalks added for pedestrians. The existing Blue parking area would be restriped and new signs installed. In the area labeled Pink Parking Lot, the project would construct new parking areas to the north of Building 16-0016 and south of Building 16-1374 with new striping and signs. The area to the north and east of Building 16-1374 is existing asphalt and would be repaved. New pedestrian pathways would be constructed around the area, and a new entrance/exit would be added onto Anchor Ranch Road west of Building 16-0969. The Orange Parking Lot is currently a mix of asphalt and gravel roads, unmarked gravel parking, storage, and pedestrian pathways. The project proposes to pave the existing areas with asphalt, strip, add new signs, repave two existing pedestrian pathways, and add new pedestrian pathways. All work would follow applicable LANL engineering standards (http://engstandards.lanl.gov).

This assessment focuses only on activities that occur in the Water Canyon 100-year floodplain, which include:

- construction of a new vehicle entrance/exit onto Anchor Ranch Road as part of the new Pink parking lot,
- improving existing pedestrian pathways south of Building TA-16-0969, between the building and parking areas in the Orange parking lot, and
- repaving a section of existing road with new pedestrian pathway in the Orange parking lot.

The floodplain at Ancho Ranch Road is a previously disturbed roadside swale created when the road was constructed (Figure 2). The swale would be modified from a swale to a culvert under the proposed new entrance/exit. The entrance/exit from the proposed new parking lot in the Pink area would be approximately 60 feet wide (Figure 3). An appropriately sized culvert would be placed in the swale and covered by road base material and asphalt paved from the new parking lot, over the culvert, and connecting to Anchor Ranch Road Inlet and outlet erosion protection, such as rock would be placed at either end of the culvert. Heavy equipment such as front-end loaders, backhoes, and compactors would be used for construction activities.

Two existing 8-foot-wide pedestrian pathways (Figure 4 and Figure 5) south of Building TA-16-0969 in the Orange parking lot area would be improved. Here, the Water Canyon floodplain is a previously disturbed open channel and culverts underneath the pathways. The existing gravel pathways would be milled and paved with asphalt to improve walking surfaces between buildings and parking areas. One additional pedestrian pathway would be constructed; however, this pathway is not in or over the floodplain. A small front-end loader and compactor would be used for construction activities.

Additionally, within the Orange parking lot area, the project proposes to mill and repave the existing section of asphalt road on the east side of Building 16-0969. The road to the south of Building 16-0969 is currently a mix of asphalt and gravel and would be paved with asphalt (Figure 6). A pedestrian pathway would be added along the west side of the road within the footprint of the existing roadway. As with the pedestrian pathways, the floodplain is the culvert under the road cross-section. The new asphalt would be

approximately 45 feet wide. Heavy equipment such as front-end loaders and compactors would be used for construction activities.



Figure 3. Proposed area for new vehicle entrance/exit west of Building 16-0969 looking southwest.



Figure 4. Existing north pedestrian pathways proposed for improvement south of Building 16-0969 looking southwest.



Figure 5. Existing south pedestrian pathways proposed for improvement south of Building 16-0969 looking south.



Figure 6. Existing road proposed for improvement and additional of pedestrian pathway south of Building 16-0969 looking east.

Floodplain Impacts and Mitigations

The portion of the Water Canyon floodplain projected to have short-term impact from this project would be the roadside swale on the west side of Anchor Ranch Rd in the area labeled Pink Parking (Figure 1), totaling 652.6 square feet (0.01 acres) of impacted area. This area was previously disturbed when the road was constructed and the swale created to convey stormwater. The culvert is a modification that would replace the swale and convey the equivalent stormwater flow. Construction in the floodplain would be an excavation with dimensions of 156 feet long by 6 feet wide and to a maximum depth of 3 feet below ground surface. A culvert would be placed in the roadside swale and covered with a road base material (e.g., base course). Erosion protection would be placed around the culvert inlet and outlet (e.g., rock, etc.) and asphalt paved over the culvert connecting the new parking area to Anchor Ranch Road.

Two gravel pedestrian pathways south of Building 16-0969 cross the floodplain over culverts. The new asphalt pathways would remain within the footprint of the existing pathways, and the culvert would remain intact. No construction activities are expected to extend into the floodplain. No additional short-term or long-term impacts to the floodplain are expected.

A section of asphalt/gravel road crosses the floodplain southeast of Building 16-0960. The road paving and addition of a pedestrian path along the roadway would remain within the footprint of the existing road. The culvert would remain intact. No construction activities are expected to extend into the floodplain. No additional short-term or long-term impacts to the floodplain are expected.

All disturbed areas must have final stabilization to control erosion after completion of construction activities (EPA 2022). The project would stabilize any excess soil at the excavation site following guidelines in the LANL Seeding Specification (LANL 2021) or dispose of excess soil in accordance with LANL Procedure (P) 409, *LANL Waste Management* (LANL 2022c). The project would also stabilize any additional disturbance caused by equipment traffic.

Short-Term Impacts and Mitigations

LANL subject matter experts use a LANL-maintained project review tool to identify, evaluate, and resolve project-specific issues, such as the presence of underground utilities, contaminated soils, spills and leaks, soil disturbance and stabilization, threatened and endangered species habitat, floodplains or wetlands; and to ensure regulatory agency authorizations, such as U.S. Army Corps of Engineers permit requirements and Clean Water Act permit requirements. The tool aids in identifying potential impacts to the natural and built environment from the proposed project.

Subject matter experts identified and reviewed the following requirements to avoid potential impacts:

- No wetlands impacts are expected. The project is not adjacent to any wetlands and does not propose work in any wetlands within or adjacent to LANL property.
- The total proposed area of project disturbance will be larger than 1 acre; therefore, National Pollution Discharge Elimination System Construction General Permit coverage is required. The project is required to use industry standard stormwater controls to contain excavated materials and all other potential pollutants within worksite limits and away from potential stormwater flow (EPA 2022). These controls—installed and maintained in accordance with manufacturer guidance—include temporary materials (silt fence, etc.) to reduce erosion and sediment transport,

manage run-on and runoff, contain excavated materials, and keep potential pollutants within the work site limits and away from potential stormwater flow during construction. The project is required to use appropriate, industry standard, best management practices such as procedures that include waste management and spill prevention. All disturbed areas must have final stabilization to control erosion after completion of construction activities. Areas intended to be revegetated will be in accordance with the LANL Seeding Specification (LANL 2021). Any required vegetation stabilization will use the LANL Seeding Specification seed mix, which contains native perennial grasses, forbs, and shrubs. Native species selection benefits local animal species, helps suppress weeds, and restore natural habitats, thus ensuring long-term ecological stability.

- No modifications to stormwater flow paths are proposed. The project would not be subject to any additional requirements regarding the Energy Independence and Security Act, Section 438 (PLAW 2007).
- In accordance with U.S. Army Corps of Engineers regulations, a Clean Water Act Section 404 dredge-and-fill permit or New Mexico State Section 401 Water Quality Certification would not be required for this project (Federal Register 2023).
- Based on LANL surveys and procedures, no historical or archaeological resources are located within 100 feet of the proposed project areas. No impacts are expected to occur to cultural resources; however, the project must follow the LANL procedure for inadvertent discoveries (LANL 2019).
- Based on LANL surveys and procedures, no threatened or endangered species habitat is located near the proposed project area. No impacts are expected to occur to threatened or endangered species.
- The proposed project plans to involve minimal disturbance of Solid Waste Management Unit[1] (SWMU) 16-005(a). SWMU 16-005(a) is a former sanitary septic tank with inlet and outlet lines located south and east of Building 16-0969 (LANL 2011). The tank was removed in 1967, and the inlet line was plugged at an upgradient manhole. Only an outlet line which was connected to the TA-16 wastewater treatment plant is associated with the proposed project. No investigation activities have been conducted, and decision-level data are not available. SWMU contaminants of potential concern are summarized in Table 1.
  - The project must coordinate with LANL Consent Order personnel to identify areas before construction begins and avoid disturbance, if possible. If the project cannot avoid disturbance, any material excavated within a SWMU boundary must be managed within that boundary, returned to the point of origin, and stabilized using LANL-approved best management practices. Any material that cannot be managed on site must be managed, characterized, and disposed of in accordance with P409, *LANL Waste Management*, and associated documents (LANL 2022c).

[1] A SWMU is any discernible unit at which solid waste has been placed at any time and from which NMED determines a potential risk of release of hazardous waste or hazardous waste constituents, irrespective of whether the unit was intended for the management of solid or hazardous waste.

Table 1. SWMUs Potentially Impacted by Project Activities in or near the Floodplain

SWMU	Description	Contaminants of Potential Concern
16-005(a)	Former Septic Tank and Lines	Hazardous wastes

The project would avoid or minimize additional potential short-term direct and indirect floodplain impacts from release of pollutants to the floodplain and exposure to stormwater through implementation of the following best management practices:

- Hazardous materials, chemicals, fuels, and oils would not be stored within the floodplain.
- Heavy equipment would not be used within the stream channel, especially if conditions are too wet to prevent damage to the soil structure.
- Equipment would be refueled at least 100 feet from the Water Canyon floodplain.

Potential direct effects to migratory birds and other biological resources are limited because minimal habitat has been disturbed. Shrub and grass removal occurred in October 2025. The Migratory Bird Treaty Act prohibits killing migratory birds, including nestlings and eggs in an active nest, which includes vegetation removal during the nesting season (May 15 through July 15). If future vegetation removal is proposed during the nesting season, LANL Biological Resources subject matter experts would conduct an onsite inspection for bird nests. Site activities would conform to requirements stipulated in the Migratory Bird Best Management Practices Source Document for Los Alamos National Laboratory (LANL 2020).

Long-Term Impacts and Mitigations

Minimal long-term impacts to the floodplain are anticipated as a result of this project. The proposed construction of the parking lot entrance/exit at Ancho Ranch Road will replace the roadside swale with a culvert to allow free flow of stormwater. The pedestrian paths and road paving will remain within the footprint of the existing structures.

Flow paths within the floodplain would not be significantly modified from pre-project conditions to post-project conditions. After high-flow events, the area within the floodplain would be monitored for erosion and debris entrapped in the laydown area, and maintenance options would be assessed and scheduled.

This assessment also considers the impacts of the proposed actions in the floodplain on habitat conservation for existing flora and fauna, aesthetic values, and public interest. The proposed action would not impact cultural resources because none are expected to be discovered in the project area. The proposed action is not expected to remove any protected species habitat. The proposed action is not considered to negatively impact aesthetic values or public interest because the proposed action will occur in an area that has been previously disturbed and is not accessible to the public.

Alternatives

Three potential alternatives were evaluated by DOE/NNSA including the no action alternative, developing offsite parking, or developing onsite parking. The alternative of developing onsite parking at TA-16 was selected by DOE/NNSA.

The no action alternative was not selected because the existing infrastructure does not provide for pedestrian and vehicle safety.

The alternative action of developing offsite parking and public transit stops was not selected. There are a limited number of areas available for development in the TA-16 area, most of which already have plans for future programmatic structures. Public transit may also not be allowed in security areas. Without a convenient and safe option for personnel to walk from their parked cars to the work site, it was deemed not practical to invest in offsite parking.

Conclusions

The proposed construction in the neighborhood of Building TA-16-0969 would improve safety for pedestrians; improve safety for drivers; and improve parking areas to increase the safety, organization, and efficiency for multiple types of vehicles. While the LANL Site-Wide Environmental Impact Statement (DOE 2026) identified a current 2:1 gap in parking across the lab, this project will be one of several sites that will alleviate this pressure on government and personal vehicle parking.

The proposed project would result in limited and minor direct and indirect impacts to the Water Canyon 100-year floodplain and would not result in adverse impacts to the floodplain's values or functions. Temporary disturbance within the floodplain would cease following completion of installation activities. Best management practices, such as erosion and sediment controls, would be implemented to avoid or minimize impacts from release of potential pollutants to the floodplain. This proposed project would not significantly modify flow paths within the floodplain from pre-project conditions to post-project conditions. No effects to lives or property associated with floodplain modifications are anticipated.

In accordance with 10 CFR 1022 (CFR 2003), DOE/NNSA will publish this floodplain assessment and initiate a 15-calendar-day public comment period. DOE/NNSA will take into account all substantive comments received on this floodplain assessment and reevaluate the practicability of alternatives before providing the Statement of Findings on the floodplain action.

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CFR 2003. Title 10 Code of Federal Regulations, Part 1022. Compliance with Floodplain and Wetland Environmental Review Requirements.

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LANL 2022a. LANL FY 2022 Sustainability Plan. LANL Utilities and Infrastructure. UIDO-PLAN-084-R0.

LANL 2022b. Transportation Plan Los Alamos National Laboratory Fiscal Year 2023. LA-UR-22-31888.

LANL 2022c. P409, *LANL Waste Management*, as directed by the following:

New Mexico Administrative Code (NMAC), Title 20, Environmental Protection

10 CFR, Energy

40 CFR, Protection of Environment

48 CFR, Federal Acquisition Regulations System

49 CFR, Transportation

Department of Energy Acquisition Regulation (DEAR) Part 970.5223, Integration of Environment, Safety, and Health into Work Planning

DOE Order 435.1, Radioactive Waste Management

DOE M 435.1-1, Radioactive Waste Management Manual

DOE Order 414.1D, Quality Assurance

DOE Oder 458.1, Radiation Protection of the Public and the Environment

DOE Order 460.2B, Departmental Materials Transportation Management

DOE Order 474.2A, Nuclear Material Control and Accountability

LANL Institutional RCRA Permit, EPA and NMED RCRA Operating Permit

PLAW 2007. Energy Independence and Security Act of 2007. Public Law Number 110-140 (2007).