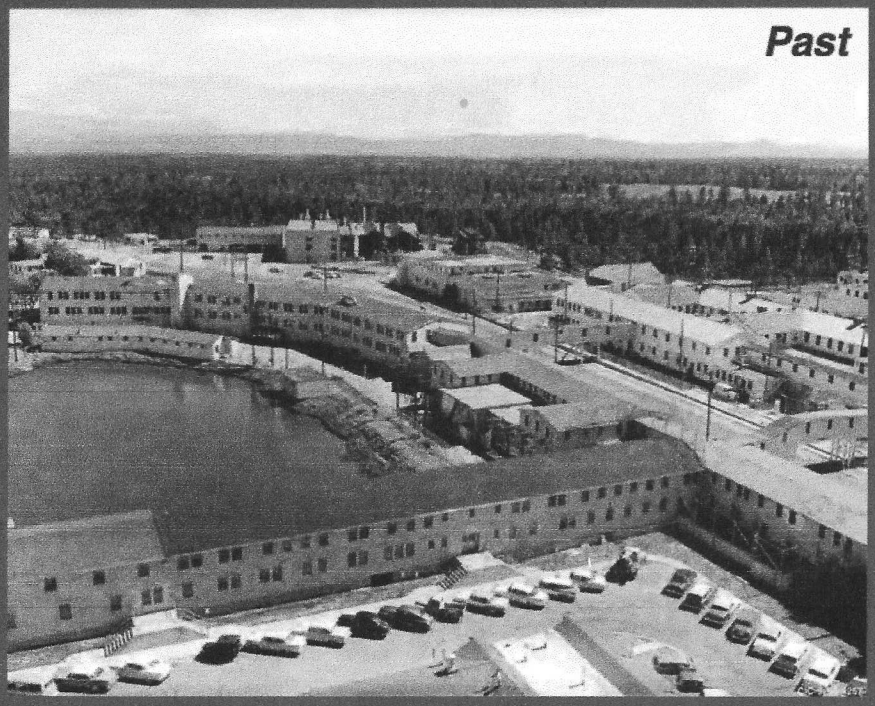
EXHIBIT 13

Section 2.4.12 - Radioactive Liquid Waste Treatment Facility (Technical Area 50). Final Site-Wide Environmental Impact Statement for Continued Operation at Los Alamos National Laboratory, Los Alamos, New Mexico. DOE/EIS-0380 (May 2008)

DOE/EIS-0380
May 2008



Final Site-Wide Environmental Impact Statement for Continued Operation of Los Alamos National Laboratory, Los Alamos, New Mexico

Volume 1
Chapters 1 through 11

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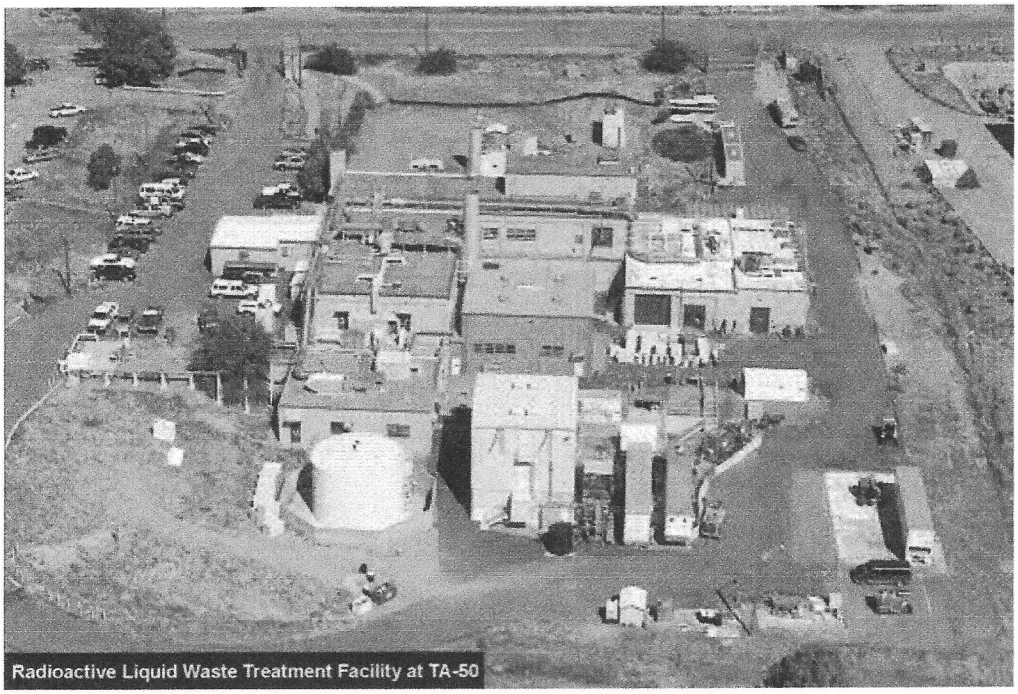
National Nuclear Security Administration

Los Alamos Site Office

2.4.12 Radioactive Liquid Waste Treatment Facility (Technical Area 50)

The Radioactive Liquid Waste Treatment Facility is located in TA-50, near the center of LANL. It treats radioactive liquid wastes generated at other LANL facilities and houses analytical laboratories supporting waste treatment operations. This Key Facility consists of four primary structures: the Radioactive Liquid Waste Treatment Facility (50-01), the tank farm and pumping station (50-02), the acid and caustic solution tank farm (50-66), and a 100,000-gallon (380,000-liter) influent holding tank (50-90), as well as a number of ancillary structures. Presently, these four structures are considered one Hazard Category 2 nuclear facility.



Radioactive Liquid Waste Treatment Facility at TA-50

The principal capabilities and activities conducted at the Radioactive Liquid Waste Treatment Facility include:

- Waste characterization and packaging including identification and quantification of constituents of concern in waste streams and packaging and labeling waste according to U.S. Department of Transportation regulations;
- Waste transportation including inspection and cross-checking for acceptance;
- Liquid and solid chemical materials and radioactive waste storage;
- Waste pretreatment;
- Radiological liquid waste treatment using a number of treatment processes, including ultrafiltration and reverse osmosis; and
- Secondary waste treatment.

Radioactive Liquid Waste Treatment Facility Performance and Changes Since the *1999 SWEIS*

The decontamination capability was transferred to the Solid Radioactive and Chemical Waste Key Facility in 2000. Between 1999 and 2005, all liquid waste discharge volumes processed through this Key Facility were less than projected in the *1999 SWEIS* due to ongoing source reduction efforts and internal recycling by waste generators. Most of the process changes at the Radioactive Liquid Waste Treatment Facility have been aimed at further improving the quality of the effluent discharged by the facility. Nitrate reduction equipment was installed at the Radioactive Liquid Waste Treatment Facility in 1998 to improve effluent quality to meet new groundwater standards. In 2001, this equipment was taken out of service; currently, low-volume, high-nitrate liquid wastes are separated "upstream" by the waste generators and shipped to offsite commercial hazardous waste treatment facilities for treatment and disposal. An electrodialysis reversal unit and an evaporator were installed at the Radioactive Liquid Waste Treatment Facility in 1999 and 2000, respectively, to process the waste stream from the reverse osmosis unit. In 2002, a perchlorate removal system (using ion exchange resin columns) was added to the Radioactive Liquid Waste Treatment Facility to further improve the quality of effluent discharged.

The Radioactive Liquid Waste Treatment Facility was one of the very few facilities that operated during the Cerro Grande Fire. Operations were mandatory because radioactive liquid wastes continued to be generated. These flows would be expected from cooling systems and experiments that required cooling during the wildfire. Subsequent to the wildfire, radioactive liquid waste generation continued below typical rates because other LANL facilities required time to resume normal levels of operations.

Other changes that have taken place since issuance of the *1999 SWEIS* ROD largely have been the result of lowered incoming waste volumes, which have enabled changes in certain process steps and rendered others unnecessary. In 2000, the lead decontamination trailer was decommissioned because the quantity of lead needing decontamination had become so small that this operation was no longer cost-effective. In 2001, the transfer line that had carried liquid wastes from the TA-21 tritium facilities to the Radioactive Liquid Waste Treatment Facility was eliminated from service. Because of reduced waste volumes at the TA-21 facility, these materials are now transported by truck. During 2002, the Radioactive Liquid Waste Treatment Facility shop (Building 50-83) was relocated to TA-54 to make room for construction of a new 300,000-gallon (1,140,000-liter) influent storage facility funded by the Cerro Grande Rehabilitation Project. Construction of the new facility began in 2004.

The following radionuclides were not identified in the *1999 SWEIS* as potential radiological air pollutants, but were present in dosimetrically insignificant amounts (microcuries): americium-241, plutonium-238, plutonium-239, strontium-90, thorium-228, thorium-230, thorium-232, uranium-232, uranium-234, uranium-235, and uranium-238. The Radioactive Liquid Waste Treatment Facility has one NPDES-permitted outfall, as projected in the *1999 SWEIS*. Discharge flow rates have been consistently lower than projected in the *1999 SWEIS* and have steadily decreased. In 1999, the Radioactive Liquid Waste Treatment Facility effluent did not meet water quality discharge standards (the effluent exceeded NPDES permit quality standards nine times) and NMED issued a letter of noncompliance to LANL

(LANL 2002d). Since then, Radioactive Liquid Waste Treatment Facility has installed new or upgraded treatment processes to improve effluent quality. With these improvements, 2005 marked the sixth consecutive year that Radioactive Liquid Waste Treatment Facility effluent had zero violations of the NPDES permit limits and zero exceedances of the DOE Derived Concentration Guide for radioactive liquid wastes. Annual average nitrate discharges were reduced from 360 milligrams per liter in 1993 to less than 10 milligrams per liter in 2000 and have remained at that level through 2005. Another important improvement since the *1999 SWEIS* is that tritium-contaminated wastewater that was previously treated at TA-50 is now being treated at the TA-53 Radioactive Liquid Waste Treatment Plant, which has no environmental discharge of effluents. Transuranic waste generation levels have been below *1999 SWEIS* projections. Every year except 2001, the amount of chemical wastes generated at the Radioactive Liquid Waste Treatment Facility has been below projections. In 2001, however, chemical waste exceeded generation projections due to the replacement of storage tanks and some associated plumbing. Secondary wastes generated during the treatment of radioactive liquid waste and wastes resulting from decontamination operations at LANL, caused several waste streams to exceed projections. Solid low-level radioactive waste volumes exceeded generation projections in 1999, 2001, 2002, 2003, 2004, and 2005. In 2005, exceedance of the low-level radioactive waste volume projected in the *1999 SWEIS* resulted from about 75 cubic yards (58 cubic meters) of construction debris and soil generated from the Cerro Grande Rehabilitation Project to install additional influent storage tanks. Also included in the annual solid low-level radioactive waste volumes are the aqueous evaporator bottoms shipped offsite for treatment (about 96 cubic yards [73 cubic meters] in 2005). Solid mixed low-level radioactive waste generation at the Radioactive Liquid Waste Treatment Facility was not projected in the *1999 SWEIS*, but small quantities have been generated every year but one since 1999. More than 95 percent of these mixed wastes resulted from relocation of the lead contamination activities and attendant cleanup of the area; the balance were wastes from the analytical chemistry laboratory. Transuranic waste and mixed transuranic waste volumes have been below projections.

2.4.13 Los Alamos Neutron Science Center (Technical Area 53)

LANSCE lies entirely within TA-53 and comprises more than 400 structures. The majority of LANSCE operations are associated with the 800-million-electron-volt linear accelerator, a proton storage ring, and three major experimental areas: the Manuel Lujan Neutron Scattering Center (the Lujan Center), the Weapons Neutron Research Facility, and Experimental Area C. Experimental Area A, formerly used for materials irradiation experiments and isotope production, is currently inactive. Experimental Area C is the location of proton radiography experiments for the Stockpile Stewardship Program.

This Key Facility has three Hazard Category 3 and no Hazard Category 2 nuclear facilities. In September 2001, the radioactive liquid waste treatment facility and basins in TA-53 (53-945 and 53-954) were added to the LANL radiological facility list (LANL 2002h).

The principal capabilities and activities conducted at LANSCE include:

- Accelerator beam delivery, maintenance, and development of diagnostic instruments;