

2. Compliance Summary

LLNL activities comply with federal, state, and local environmental regulations, internal requirements, Executive Orders, and applicable DOE orders. This chapter provides an overview of LLNL's compliance programs and activities during 2007. **Table 2-1** is a summary of active permits in 2007 at the Livermore site and Site 300. **Table 2-2** lists inspections, tours, and findings from these at both LLNL sites in 2007.

2.1 Environmental Restoration and Waste Management

2.1.1 Comprehensive Environmental Response, Compensation and Liability Act

Ongoing remedial investigations and cleanup activities at LLNL fall under the jurisdiction of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Title I of the Superfund Amendments and Reauthorization Act (SARA). CERCLA is commonly referred to as the Superfund law.

CERCLA compliance activities for the Livermore site and Site 300 are summarized in **Sections 2.1.1.1** and **2.1.1.2**. Community relations activities conducted by DOE/LLNL are also part of these projects. See **Chapter 8** for more information on the activities and findings of the investigations.

2.1.1.1 Livermore Site Ground Water Project

The Livermore site came under CERCLA in 1987 when it was placed on the National Priorities List. The Livermore Site Ground Water Project (GWP) complies with provisions specified in a Federal Facility Agreement (FFA) entered into by the U.S. Environmental Protection Agency (EPA), DOE, the California EPA's Department of Toxic Substances Control (DTSC), and the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). As required by the FFA, the GWP addresses compliance issues by investigating potential contamination source areas (e.g., suspected old release sites, solvent-handling areas, leaking underground tank systems), monitoring water quality through an extensive network of wells, and remediating contaminated soil and groundwater. The primary soil and groundwater contaminants (constituents of concern) are common volatile organic compounds (VOCs), primarily TCE and PCE.

Significant GWP restoration activities in 2007 included installing one dual (groundwater and soil vapor) extraction well and two soil vapor extraction wells, and focusing efforts on enhanced source area remediation. LLNL met all regulatory and DOE milestones on schedule.

Treatment Facilities. In 2007, LLNL operated 29 groundwater treatment facilities. The 95 groundwater extraction wells and 27 dual extraction wells produced nearly 1.1 billion L of groundwater and removed approximately 71 kg of VOCs. Since remediation began in 1989, more than 12.9 billion L of groundwater have been treated, resulting in the removal of more than 1317 kg of VOCs.

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Table 2-1. Active permits in 2007 at the Livermore site and Site 300.

Type of permit	Livermore site ^(a)	Site 300 ^(a)
Hazardous waste	EPA ID No. CA2890012584. Hazardous Waste Facility Permit Number 99-NC-006 (RCRA Part B permit)—to operate hazardous waste management facilities. Registered Hazardous Waste Hauler authorized to transport wastes from Site 300 to the Livermore site. Conditionally Exempt Specified Wastestream permit to mix resin in Unit CE231-1. Conditional Authorization Permit to operate sludge dewatering unit in Building 322A.	EPA ID No. CA2890090002. Hazardous Waste Facility Permit—CSA (Building 883) and EWSF. Hazardous Waste Facility Permit —EWTF. Hazardous Waste Facility Post-Closure Permit—Building 829 High Explosives Open Burn Treatment Facility.
Medical waste	ACDEH issued a permit that covers medical waste generation and treatment activities for the eight BSL 2 facilities, and the BSL 3 facility at Building 368.	NA
Air	BAAQMD issued 177 permits for operation of various types of equipment. BAAQMD issued a SMOP to ensure the Livermore site does not exceed federal Clean Air Act Title V emission limits for regulated pollutants. CARB issued 5 permits for the operation of portable diesel air compressors and generators.	SJVAPCD issued 36 permits for operation of various types of equipment. SJVAPCD approved a Prescribed Burn Plan for the burning of 2042.7 acres of grassland. BAAQMD issued 1 permit for the operation of an emergency diesel generator. BAAQMD approved a Prescribed Burn Plan for the burning of 139.1 acres of grassland.
Storage tanks	Seven operating permits covering 10 underground petroleum product and hazardous waste storage tanks.	One operating permit covering three underground petroleum product tanks assigned individual permit numbers.
Sanitary sewer	Discharge Permit 1250 ^(b) for discharges of wastewater to the sanitary sewer. Permit 1510G for discharges of groundwater from restoration.	WDR No. 96-248 for operation of sewage evaporation and percolation ponds.
Water	WDR No. 88-075 for discharges of treated groundwater from Treatment Facility A to recharge basin. ^(c) NPDES Permit No. CA0030023 for discharges of storm water associated with industrial activities and low-threat nonstorm water discharges to surface waters. NPDES General Permit No. CAS000002; Soil Reuse Project (201C349339); National Ignition Facility (201C349114); A-4 & Z-5S Parking Lots (201C333137); D-4 Parking Lot (201C342783); and E-9 Parking Lot (201C349049); for discharges of storm water associated with construction activities affecting 0.4 hectares (1 acre) or more. FFA for groundwater investigation/remediation.	WDR No. 93-100 for post-closure monitoring requirements for two Class I landfills. WDR No. 96-248 for discharges to equipment wastewater percolation pits. NPDES General Permit No. CAS000001 for discharge of storm water associated with industrial activities. NPDES Regional General Permit No. CAG995001 for large volume discharges from the drinking water system. FFA for groundwater investigation/remediation. 34 registered Class V injection wells.

Note: See the **Acronyms and Glossary** section for acronym definitions.

(a) Numbers of permits are based on actual permitted units or activities maintained and/or renewed by LLNL during 2007.

(b) Permit 1250 includes some wastewater generated at Site 300 and discharged at the Livermore site.

(c) Recharge basins referenced in WDR Order No. 88-075 are located south of East Avenue within Sandia National Laboratories/California boundaries. The discharge no longer occurs; however, the agency has not rescinded the permit.

Table 2-2. Inspections of Livermore site and Site 300 by external agencies in 2007.

Site	Medium	Description	Agency	Date	Finding	
Livermore site	Waste	Hazardous waste facilities Compliance Evaluation Inspection (CEI)	DTSC	9/26/07 10/9/07–10/11/07	Received one minor violation for an incorrect TSDF date on LLNL's operating record (Container Contents Report) that did not reflect the container in the Building 693 roll-off bin with the oldest TSDF date. The correct TSDF date was placed on the roll-off bin and no further action is required.	
		Hazardous waste generator areas (SAAs and WAAs), Conditionally Exempt Specified Wastestream for resin mixing unit in CE231-1, Conditional Authorization Unit in Building 322A, Hazardous Materials Release Response Plans and Inventories (Business Plans) and CalARP Program	ACDEH-CUPA	7/25/07 8/9/07 9/5/07 9/6/07 9/10/07 9/12/07	No violations were issued during the inspection close-out meeting. LLNL has not yet received the final inspection report.	
		Medical waste	ACDEH	11/28/07	No violations	
	Discarded Major Appliances	Certified Appliances	ACDEH	1/18/07	No violations	
	Waste Tires	Waste Tire Management Inspection	ACDEH	1/17/07	No violations	
	Air	39 emission sources		BAAQMD	7/26/07 12/13/07 12/19/07	No violations
			Asbestos	BAAQMD	10/11/07	No violations
			SMOP	BAAQMD	3/1/07	No violations
	Sanitary sewer	Annual compliance sampling		WRD	10/1/07 – 10/2/07	No violations
		Categorical sampling/inspection Building 153		WRD	10/10/07	No violations
Categorical sampling/inspection Building 321C			10/16/07	No violations		
Quarterly BOD/TSS Monitoring		WRD	3/9/07 6/7/07 9/18/07 11/7/07	Sampling for billing purposes, not compliance Sampling for billing purposes, not compliance Sampling for billing purposes, not compliance Sampling for billing purposes, not compliance		

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Table 2-2 (cont.). Inspections of Livermore site and Site 300 by external agencies in 2007.

Site	Medium	Description	Agency	Date	Finding
Livermore site (cont.)	Storage tanks	Compliance with underground storage tank requirements and operating permits	ACDEH	9/10/07 9/17/07	No violations
	Pesticides	Pest control records inspections	ACCDA	11/14/07	No violations
Site 300	Waste	Permitted hazardous waste operational facilities (EWTF, EWSF, Building 883 CSA), RCRA-closed, post-closure permitted facility Building 829 Open Burn Facility, and a review of hazardous waste-related documentation (CEI).	DTSC	3/19/07–3/20/07	DTSC issued one violation for failure to provide the specified number of training hours to an LLNL Site 300 Field Technician for Basic Respirator Training (course #HS4610) and Self-Contained Breathing Apparatus Training (course #HS4360). LLNL provided the additional training hours on August 2, 2007, and submitted a corrective action letter to DTSC on August 28, 2007. DTSC reviewed the corrective action letter and determined that no further action would be required. The DTSC corrective action response letter was dated October 3, 2007.
		Hazardous waste generator area inspection (WAAs, SAAs and hazardous waste-related records for hazardous waste generator activities only).	SJCEHD-CUPA	6/25/07	During an inspection of the machine shop in Building 875, one violation was issued for failure to make a hazardous waste determination of machine grinding waste generated from metal grinding operations. The corrective action letter committed to managing metal grind waste as either hazardous waste in compliance with 22 CCR Division 4.5, Chapter 11 and 22 CCR Division 4.5, Chapter 12, or scrap metal as defined in 22 CCR Division 4.5, Chapter 10, Article 2, 66260.10. The corrective action letter and Return to Compliance Certification were submitted to SJCEHD-CUPA on July 25, 2007.
	Vehicle	Biennial transportation terminal inspection	CHP	1/17/07	No violations
	Air	36 emission sources	SJVAPCD	4/3/07	No violations
	Water	Permitted operations	CVRWQCB	4/23/07 10/29/07	No violations
	Storage tanks	Compliance with underground storage tank requirements and operating permits	SJCEHD	9/12/07 9/19/07	No violations

Note: See the **Acronyms and Glossary** section for acronym definitions.

In 2007, LLNL also operated 9 soil vapor treatment facilities. The 31 soil vapor extraction wells and 27 dual extraction wells produced nearly 1.5 million m³ of soil vapor, and the treatment facilities removed more than 247 kg of VOCs. Since initial operation, more than 8.9 million m³ of soil vapor have been extracted and treated, removing over 1300 kg of VOCs from the subsurface.

Community Relations. Livermore site community relations activities in 2007 included communication and meetings with neighbors and local, regional, and national interest groups and other community organizations; public presentations; maintenance of information repositories and an administrative record; tours of site environmental activities; and responses to public and news media inquiries. In addition, DOE/LLNL met with members of Tri-Valley Communities Against a Radioactive Environment (Tri-Valley CAREs) and the organization's scientific advisor as part of the activities funded by an EPA Technical Assistance Grant (TAG). Community questions were also addressed via electronic mail, and project documents, letters, and public notices were posted on a public website: <http://www-envirinfo.llnl.gov>.

2.1.1.2 Site 300 CERCLA Project

Remedial activities are ongoing at Site 300, which became a CERCLA site in 1990 when it was placed on the National Priorities List. Remedial activities are overseen by the EPA, the Central Valley Regional Water Quality Control Board (CVRWQCB), and DTSC, under the authority of an FFA for the site. Contaminants of concern at Site 300 include VOCs (primarily TCE), high explosive compounds, tritium, depleted uranium, silicone-based oils, nitrate, perchlorate, polychlorinated biphenyls, dioxins, furans, and metals. The contaminants present in environmental media vary within the different environmental restoration operable units (OUs) at the site. See Webster-Scholten (1994), and Ferry et al. (1999) for background information on LLNL environmental characterization and restoration activities at Site 300. See Ferry et al. (2006) for the current status of cleanup progress for sites that were remediated under an Interim Site-Wide Record of Decision (U.S. DOE 2001). In 2007, LLNL met all regulatory and DOE milestones on schedule. The Site-Wide Record of Decision for Site 300 establishing final cleanup actions and standards is scheduled for completion in 2008.

Treatment Facilities and Field Investigations. During 2007, LLNL operated 15 groundwater and 5 soil vapor treatment facilities at Site 300. The 40 groundwater extraction wells and 18 dual phase extraction wells extracted about 34 million L of groundwater during 2007. The 18 dual phase extraction wells and 2 soil vapor extraction wells together removed 1.5 million m³ of soil vapor.

In 2007, the Site 300 treatment facilities removed about 62 kg of VOCs, 0.1 kg of perchlorate, 390 kg of nitrate, 0.16 kg of the high explosive compound RDX, and 0.029 kg of silicone-based oil. Since remediation efforts began in 1990, more than 1351 million L of groundwater and approximately 9 million m³ of soil vapor have been treated, removing about 510 kg of VOCs, 0.7 kg of perchlorate, 5300 kg of nitrate, 0.94 kg of RDX, and 9.4 kg of silicone-based oil.

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During 2007, the following field activities were completed by agreed-upon regulatory due dates:

- Modification of the B830-DISS groundwater treatment system in the Building 832 Canyon OU.
- Modification of the B854-PRX groundwater treatment system in the Building 854 OU.

In 2007, 16 boreholes were drilled at Site 300—one was drilled to collect soil and rock for chemical analysis, 3 were completed as extraction wells for groundwater treatment systems, and 12 were completed as monitoring wells for tracking of groundwater contaminant plumes.

Community Relations. The Site 300 CERCLA Project maintains continuing communications with the community of Tracy and nearby neighbors. Community relations activities in 2007 included maintenance of information repositories and an administrative record; participation in community meetings and workshops; tours of site environmental activities; offsite, private, well-sampling activities; mailings to stakeholders; and providing responses to public and news media inquiries. LLNL hosted TAG meetings with Tri-Valley CAREs to provide a forum for focused discussions on CERCLA activities at Site 300. A public workshop and meeting were held in Tracy for the Site-Wide Proposed Plan for the Remediation of Site 300 on February 16, 2007, and June 20, 2007, respectively.

2.1.2 Emergency Planning and Community Right-to-Know Act and Toxics Release Inventory Report

Title III of SARA, known as the Emergency Planning and Community Right-to-Know Act (EPCRA), requires owners and operators of facilities who handle certain hazardous chemicals on site to provide information on the release, storage, and use of these chemicals to organizations responsible for emergency response planning. Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management, directs all federal agencies to comply with the requirements of the EPCRA, including SARA, Section 313, the Toxic Release Inventory (TRI) Program.

On June 11, 2007, LLNL submitted to DOE/NNSA the TRI Form R for lead, detailing environmental release estimates for Site 300. Form R is used for reporting TRI chemical releases and includes information about waste management and waste minimization activities. The data on lead release estimates show a 5.2% decline from the previous reporting year; this decline will eventually plateau as activities reach their minimum levels. EPCRA requirements and LLNL compliance are summarized in **Table 2-3**.

2.1.3 Resource Conservation and Recovery Act and Related State Laws

The Resource Conservation and Recovery Act (RCRA) provides the framework at the federal level for regulating solid wastes, including wastes designated as hazardous. The California Hazardous Waste Control Act (HWCA) and California Code of Regulations (CCR) Title 22 set requirements for managing hazardous wastes and implementing RCRA in California. LLNL works with DTSC to comply with these regulations and obtain hazardous waste permits.

Table 2-3. Compliance with EPCRA.

EPCRA section	Brief description of requirement	LLNL action
302	Notify SERC of presence of extremely hazardous substances.	Originally submitted 5/87.
303	Designate a facility representative to serve as emergency response coordinator.	Update submitted 3/23/07.
304	Report releases of certain hazardous substances to SERC and LEPC.	No reportable releases in 2007.
311	Submit MSDSs or chemical list to SERC, LEPC, and Fire Department.	Update submitted 3/23/07.
312	Submit hazardous chemical inventory to local administering agency (county).	Submitted to San Joaquin and Alameda counties on 1/08/07 and 3/1/07, respectively.
313	Submit Form R to U.S. EPA and California EPA for toxic chemicals released above threshold levels.	Form R for lead for Site 300 submitted to DOE 6/11/07; DOE forwarded it to U.S. EPA and California EPA 6/27/07.

The hazardous waste management facilities at the Livermore site consist of permitted units in Area 612 and Buildings 693, 695, and 696 of the Decontamination and Waste Treatment Facility (DWTF). Permitted waste management units include container storage, tank storage, and various treatment processes (e.g., wastewater filtration, blending, and size reduction). Final closure was granted by the DTSC for Area 514, and closure approval for the Building 233 container storage unit (CSU) is expected once LLNL submits the Closure Report to the DTSC. LLNL also expects to receive DTSC's approval of the Building 419 Closure Plan during fiscal year 2008. During 2006/2007, LLNL submitted several permit modification requests to DTSC that have all been approved and are being implemented, including six Class 2 permit modifications.

The hazardous waste management facilities at Site 300 consist of three operational RCRA-permitted facilities. The Explosives Waste Storage Facility (EWSF) and the Explosives Waste Treatment Facility (EWTF) are permitted to store and treat explosives waste, respectively. The Building 883 container storage area (CSA) is permitted to store routine facility-generated waste such as spent acids, bases, contaminated oil, and spent solvents. Site 300 has one post-closure permit for the RCRA-closed Building 829 High Explosives Burn Pits. LLNL is currently in the process of renewing the hazardous waste facility permit for EWSF, EWTF, and Building 883 CSA. The Building 829 permit will not expire until April 2, 2013. Transportation of hazardous or mixed waste over public roads occurs by DTSC-registered transporters. DTSC issued hazardous waste transporter registration #1351 to LLNS on October 16, 2007.

2.1.4 Hazardous Waste Source Reduction and Management Review Act

The California Hazardous Waste Source Reduction and Management Review Act of 1989 (Senate Bill 14), requires LLNL to complete a Source Reduction Plan and Summary Report every four years. LLNL waste streams over five percent (by weight) of the total routine regulated waste were evaluated for waste reduction opportunities, and all extremely hazardous waste streams were

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evaluated. The Pollution Prevention (P2) Team contributed data from both LLNL sites to a multiple-site plan developed for all DOE California sites. A combined report was submitted by DOE in 2007 for the reporting year 2006.

2.1.5 California Medical Waste Management Act

All LLNL medical waste management operations are conducted in accordance with the California Medical Waste Management Act (CMWMA). The program is administered by the California Department of Health Services (DHS) and is enforced by the Alameda County Department of Environmental Health (ACDEH). LLNL's medical waste permit is renewed on an annual basis and covers medical waste generation and treatment activities for the eight Biosafety Level (BSL) 2 facilities, and the BSL 3 facility at Building 368.

2.1.6 Radioactive Waste and Mixed Waste Management

LLNL manages radioactive waste and mixed waste in compliance with applicable sections of DOE Order 435.1, and the LLNL-developed *Radioactive Waste Management Basis for the Lawrence Livermore National Laboratory* (LLNL 2006), which summarizes radioactive waste management controls relating to waste generators and treatment and storage facilities. LLNL does not release to the public any property with residual radioactivity above the limits specified in DOE Order 5400.5. Excess property of this type is either transferred to other DOE facilities for reuse or transferred to LLNL's Radioactive and Hazardous Waste Division for disposal.

2.1.7 Federal Facility Compliance Act

LLNL is continuing to work with DOE to maintain compliance with the Federal Facilities Compliance Act (FFCA) Site Treatment Plan (STP) for LLNL, which was signed in February 1997. LLNL completed 36 milestones during 2007, and of those, 14 had due dates beyond 2007 (ranging from 2008 to 2011).

LLNL requested, and was granted, extensions for two additional milestones to allow LLNL time to pursue alternative treatment options for 1.7 m³ of waste.

LLNL removed approximately 111 m³ of mixed waste from the STP in 2007. An additional 47 m³ of newly generated mixed waste was added to the STP, reflecting an overall reduction of 63.8 m³ of mixed waste being stored by LLNL.

Reports and certification letters were submitted to DOE as required. LLNL continued the use of available commercial treatment and disposal facilities that are permitted to accept LLNL mixed waste. These facilities provide LLNL greater flexibility in pursuing the goals and milestones set forth in the STP.

2.1.8 Toxic Substances Control Act

The Federal Toxic Substances Control Act (TSCA) and implementing regulations found in Title 40 of the Code of Federal Regulation, Parts 700–789 (40 CFR 700-789) govern the uses of newly developed chemical substances and TSCA-governed waste. All TSCA-regulated waste was disposed of in accordance with TSCA, state, and local disposal requirements with one exception.

Radioactive polychlorinated biphenyl (PCB) waste is currently stored at one of LLNL's hazardous waste storage facilities until an approved facility accepts this waste for final disposal.

2.2 Air Quality and Protection

2.2.1 Clean Air Act

All activities at LLNL are evaluated to determine the need for air permits. Air permits are obtained from the Bay Area Air Quality Management District (BAAQMD) for the Livermore site and from the San Joaquin Valley Air Pollution Control District (SJVAPCD) and/or BAAQMD for Site 300. Both agencies are overseen by the California Air Resources Board (CARB), which oversees statewide permitting for portable diesel fuel-driven equipment such as portable generators and portable air compressors.

In 2007, LLNL operated 182 permitted air emission sources at the Livermore site and 37 permitted air emission sources at Site 300. In addition, the Livermore site continues to maintain a Synthetic Minor Operating Permit (SMOP), which was issued by the BAAQMD in 2002, to ensure the Livermore site does not emit regulated air pollutants in excess of federal Clean Air Act (CAA) Title V limits. Therefore, LLNL is able to demonstrate that it does not have any major sources of air pollutant emissions per 40 CFR 70.2.

LLNL eliminated a Freon vapor degreaser that had the potential of emitting 1.43 MT of the "greenhouse gas" Freon 113, annually; 1.43 MT of Freon 113 is equivalent to 7,007 MT of carbon dioxide. LLNL also eliminated three diesel-powered generators and installed exhaust filters with a verified 85% particulate capture capability on four diesel-powered generators. The elimination and modification of the seven generators significantly reduced the combustion pollutants emitted from the Livermore site by the diesel-powered generator fleet.

In May 2007, LLNL was granted a BAAQMD Permit to Operate an alternative fuel, E85, dispensing facility at the Livermore site. E85 fuel is a blend of 85% ethanol and 15% unleaded gasoline fuel, and meets Executive Order 13423 to increase the total fuel consumption that is non-petroleum-based by 10 % annually, as well as meets the intent of the proposed DOE Order 430.2B. In 2007, LLNL dispensed 41,893 gallons of E85 fuel.

2.2.2 National Emission Standards for Hazardous Air Pollutants, Radionuclides

To demonstrate compliance with 40 CFR Part 61, Subpart H (NESHAPs for radiological emissions from DOE facilities), LLNL monitors certain air release points and evaluates the maximum possible dose to the public. The *LLNL NESHAPs 2007 Annual Report* (Bertoldo et al. 2008), submitted to EPA, reported that the estimated maximum radiological doses that could have been received by a member of the public in 2007 were 0.031 μSv (0.0031 mrem) for the Livermore site and 0.035 μSv (0.0035 mrem) for Site 300. The totals are well below the 100 $\mu\text{Sv}/\text{y}$ (10 mrem/y) dose limits defined by the NESHAPs regulations.

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2.3 Water Quality and Protection

LLNL complies with requirements of the federal Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and Health and Safety Code; the California Aboveground Petroleum Storage Act, Water Code, and Health and Safety Code; and City of Livermore ordinances, by complying with regulations and obtaining permits issued by several agencies whose mission it is to protect water quality.

LLNL complies with the requirements of National Pollutant Discharge Elimination System (NPDES) and Waste Discharge Requirement (WDR) permits, and Water Quality Certifications issued by Regional Water Quality Control Boards (RWQCBs) and the State Water Resources Control Board (SWRCB) for discharges to waters of the U.S. and waters of the State. Discharges to the City of Livermore's sanitary sewer system are governed by permits issued by the Water Resources Division (WRD). The SDWA requires that LLNL register Class V injection wells with EPA, and LLNL obtains permits from the Army Corps of Engineers (ACOE) for work in wetlands and waters of the U.S.

The CWA and California Aboveground Petroleum Storage Act require LLNL to have and implement Spill Prevention Control and Countermeasure (SPCC) plans for aboveground, oil-containing containers. The ACDEH and the San Joaquin County Environmental Health Department (SJCEHD) also issue permits for operating underground storage tanks containing hazardous materials or hazardous waste (see **Table 2-1**). LLNL's permitted underground storage tanks, for which permits are required, contain diesel fuel, gasoline, and used oil; aboveground storage tanks, for which permits are not required, contain fuel, insulating oil, and process wastewater. In 2007, the new E85 alternative fuel dispensing facility, including the new underground tank system, was installed and went into operation.

2.4 Other Environmental Statutes

2.4.1 National Environmental Policy Act and Floodplains and Wetland Assessments

The National Environmental Policy Act (NEPA) is the U.S. government's basic environmental charter. When considering a proposed project or action at LLNL, DOE/NNSA must (1) consider how the action would affect the environment and (2) make certain that environmental information is available to public officials and citizens before decisions are made and actions are taken. The results of the evaluations and notice requirements are met through publication of "NEPA documents", such as environmental impact statements (EISs) and environmental assessments (EAs). In 2007, DOE/NNSA published or acted on:

- *Environmental Assessment for the Proposed Environmental Remediation at Lawrence Livermore National Laboratory Site 300 Pit 7 Complex* (DOE/EA-1569) in January, and its Finding of No Significant Impact (FONSI) in February

- *Draft Revised Environmental Assessment for the Proposed Construction and Operation of a Biosafety Level 3 Facility at Lawrence Livermore National Laboratory, Livermore, California (DOE/EA-1442R) in March*

There were no proposed actions at LLNL that required separate DOE floodplain or wetlands assessments under DOE regulations in 10 CFR Part 1022.

2.4.2 National Historic Preservation Act

The National Historic Preservation Act (NHPA) provides for the protection and preservation of historic properties that are significant in the nation's history. LLNL resources subject to NHPA consideration range from prehistoric archeological sites to remnants of LLNL's own history of scientific and technological endeavors. The responsibility to comply with the provisions of NHPA rests with DOE/NNSA as the lead federal agency in this undertaking. LLNL supports the agency's NHPA responsibilities with direction from DOE/NNSA.

In consultation with the State Historic Preservation Officer (SHPO), DOE/NNSA formally determined that five archaeological resources, five buildings, two historic districts, and selected objects in one building at LLNL are eligible for listing in the National Register of Historic Places (NRHP). To assist DOE and SHPO in developing an agreement as to how to manage the NRHP-eligible properties, LLNL prepared a draft Programmatic Agreement (PA), which includes a draft archaeological resources treatment plan and a draft historic buildings treatment plan as appendices. These plans describe specific resource management and treatment strategies that DOE/NNSA, in cooperation with LLNL, could implement to ensure that significant historic properties are managed in a manner that considers their historic value. As of 2007, SHPO was still reviewing the draft PA and treatment plans.

2.4.3 Antiquities Act of 1906

Provisions of the Antiquities Act provide for recovery of paleontological remains. No remains subject to the provisions of the Antiquities Act were identified in 2007.

2.4.4 Endangered Species Act and Sensitive Natural Resources

LLNL meets the requirements of the federal and state Endangered Species Act (ESA), the Eagle Protection Act, the Migratory Bird Treaty Act, and other applicable regulations as they pertain to endangered species, threatened species, and other special-status species (including their habitats) and designated critical habitats that exist at the LLNL sites. The following list highlights 2007 compliance activities.

- In June 2007, LLNL postponed the removal of power poles near the North Buffer Zone of the Livermore site to prevent potential impacts to nesting White-tailed Kites near the project site.
- In 2004, LLNL received a biological opinion (BO) from the U.S. Fish and Wildlife Service (USFWS) to construct a bridge along the access road to the Arroyo Mocho pump station and to improve fish passage at this site. On July 9, 2007, LLNL was issued an amendment to this

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BO to remove boulders from the channel of Arroyo Mocho in the area directly below the pump station. In October 2007, LLNL biologists monitored the removal of the boulders.

- On February 26, 2007, LLNL submitted a revised site-wide biological assessment to the USFWS that summarizes previous Livermore site and Site 300 consultations. The original biological assessment was prepared as part of the 2005 *Final Site-wide Environmental Impact Statement for Continued Operations of Lawrence Livermore National Laboratory and Supplemental Stockpile Stewardship and Management Programmatic Environmental Impact Statement*.
- On December 13, 2007, LLNL was issued an amendment to the 1997 Arroyo Las Positas Biological Opinion to include potential impact to California red-legged frogs in drainages throughout the Livermore Site and to include the California tiger salamander.
- LLNL biologists monitored construction associated with the Pit 7 remediation project for potential impacts to California red-legged frogs and California tiger salamanders. This work was conducted under an amendment to the 2002 Biological Opinion for Routine Maintenance and Operations of Site 300, which was issued on July 12, 2007.

2.4.5 Federal Insecticide, Fungicide, and Rodenticide Act

LLNL complies with Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which provides federal control of the distribution, sale, and use of pesticides, and requires that commercial users of pesticides are certified pesticide applicators. The California Department of Pesticide Regulation (DPR) has enforcement responsibility for FIFRA in California; DPR has in turn given enforcement responsibility to county departments of agriculture. All pesticides at LLNL are applied, stored, and used in compliance with FIFRA and other California, Alameda County, and San Joaquin County regulations governing the use of pesticides. The staff of the Landscape and Pest Management Shop at the Livermore site and the Laborer/Gardener Shop at Site 300 includes thirteen certified pesticide applicators. These shops ensure that all storage and use of pesticides at LLNL is in accordance with applicable regulations. LLNL also reviews pesticide applications to ensure they do not result in impacts to water quality or special status species.

2.5 Environmental Occurrences

Notification of environmental occurrences is required under a number of environmental laws and regulations as well as DOE Order 231.1A and DOE Manual 231.1-2. In 2007, six environmental incidents, summarized in **Table 2-4**, were reportable under DOE Order 232.1A.

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Table 2-4. Environmental Occurrences reported under the Occurrence Reporting System in 2007.

Date^(a)	Occurrence category/group	Description
6/25/07	Significance Category SC4 Occurrence under Group 9(2) OR 2007-0033	LLNL received an NOV from SJCEHD for findings pertaining to the management of metal fines observed during the Site 300 annual CUPA inspection.
7/9/07	Significance Category SC4 Occurrence under Group 9(2) OR 2007-0034	LLNL received an NOV from the DTSC for a minor training violation following the March 19 and 20 inspection of RCRA-permitted facilities at Site 300.
8/5/07	Significance Category SC4 Occurrence under Group 10(2d) OR 2007-0035	The contents of a waste container stored at an RHWM facility over pressurized, causing the lid of the waste container to rupture.
8/26/07	Significance Category SCOE Occurrence under Group 1(1) OR 2007-0039	An Operational Emergency was declared when a wild land fire started at Site 300, burning approximately 25 to 40 acres of grass. Information gathered during the investigation indicated the fire was the result of a lightning strike.
12/3/07	Significance Category SC4 Occurrence under Group 9(2) OR 2007-0057	LLNL received a NOV from the DTSC for a finding observed during the annual CEI. A hazardous waste container was observed with the incorrect date on the hazardous waste label.
12/13/07	Significance Category SC3 Occurrence under Group 6B(3) OR 2007-0058	Radiological contamination was discovered on December 12, 2007, during an audit of the Building 321C yard RMA. On December 13, 2007, a review by the subject matter expert determined that the constituent contamination levels exceeded reportable levels.

(a) Date the occurrence was categorized, not discovered.