

#### 4.9.3.7 Communications

SNL/CA maintains 19.7 mi of communication lines. Surveys indicate that the system may be nearing capacity, however, system upgrades are meeting the current demand for data links (SNL 1997b, 2001b).

### 4.10 TRANSPORTATION

#### 4.10.1 DEFINITION OF RESOURCE

This section describes current regional and local transportation activities, including descriptions of any highway, rail, air, or marine transportation infrastructure that the DOE uses to support hazardous material and waste movements at SNL/CA. Transportation activities at SNL/CA involve the receipt, shipment, and transfer of hazardous and nonhazardous materials and waste. Receipt refers to material received from an offsite location; shipment refers to material sent to an offsite location; and transfer refers to material moved from one onsite location to another. Actual waste quantities are discussed in Section 4.11.

#### 4.10.2 REGION OF INFLUENCE

The transportation ROI consists of three areas onsite, the major transportation corridors in Livermore, and the routes to DOE facilities and waste disposal sites.

#### 4.10.3 AFFECTED ENVIRONMENT

SNL/CA's transportation system consists of paved and unpaved roads, pedestrian malls, paved service areas, and paved parking areas. The site has 6.2 mi of paved and unpaved roads, 4 acres of pedestrian malls, 5.5 acres of paved service areas, and 12.7 acres of paved parking areas.

Onsite (excluding parking areas) vehicular traffic is comprised of General Services Administration vehicles, such as cars, light trucks, gasoline and electric carts, medium duty trucks, forklifts, cranes, and other equipment. Delivery trucks are generally routed only to shipping and receiving facilities. Vehicles owned by organizations performing work (such as construction) for SNL/CA are permitted around the site when necessary for the performance of the work.

A taxi service is provided for workers needing transport on site. LLNL provides a taxi service that will pick up Sandia workers and transport them to LLNL. Sandia also provides bicycles for personnel to use for onsite transportation.

All entrances to SNL/CA are situated along East Avenue. The primary routes to East Avenue are Vasco Road and Greenville Road. All regional traffic to and from SNL/CA is via I-580, exiting onto Vasco Road or Greenville Road. An emergency access road connects the site to Telsa Road to the south.

The regional transportation network includes the San Francisco Bay Area. Traffic congestion is a growing concern in the Bay Area. The major transportation arteries near SNL/CA are I-580 and I-680. Major road projects are underway including an upgrade to the Interstate (I)-580/I-680 interchange in Pleasanton and the addition of high-occupancy-vehicle lanes to I-680 south of Pleasanton (SNL/CA 2002b).

The closest airport to SNL/CA is the Livermore Municipal Airport. This airport is not used for commercial passenger traffic, but DOE/SSO personnel fly into this airport using a small government jet. DOE/SSO typically use the Livermore airport for less than five trips per year (SNL/CA 2002b).

The SNL/CA site is served by three international airports for commercial passenger and airfreight services. These airports are San Francisco (approximately 50 road mi west), Oakland (approximately 33 road mi west), and San Jose (approximately 32 road mi south) (SNL/CA 2002b).

SNL/CA does not receive any direct traffic by rail although some SNL/CA employees do commute by train that stops on Vasco Road approximately 1.5 mi north of the site. SNL/CA receives no direct traffic by ship (SNL/CA 2002b).

#### 4.10.3.1 Responsible Organizations for the Transport of Hazardous and Nonhazardous Material

The organizations responsible for the receipt, shipment, and onsite transfer of hazardous material and nonhazardous material are identified in Table 4-8. Table 4-9 shows all hazardous and radioactive waste shipments from SNL/CA site during calendar year 2000. Other shipments would go to LLNL and Sandia sites including SNL/NM. Approximately 1 to 3 shipments per week come in from offsite suppliers.

#### Explosives Receipt, Transfer, and Shipment

All incoming explosive material placarded or labeled DOT Division 1.1, 1.2, 1.3, 1.5, or 1.6 is diverted by security directly to the Explosives Storage Area. Division 1.4 materials may be received at either Shipping and Receiving Building or the Explosives Storage Area. Incoming explosives are entered into the Explosives Inventory and Information System (SNL/CA 2002b).

Explosives are delivered only to persons authorized on the destination building's Safe Operating Procedure. Explosives are delivered only to approved facilities. The explosives handler completes a Storage Action Request for Explosives form. Before movement is allowed, a signature must be obtained from the Explosives Safety Engineer. An Explosives Handler, using an approved container and Vehicle transports explosives (SNL/CA 2002b).

**Table 4-8. Sandia National Laboratories, California Organizations Responsible for the Transportation of Hazardous and Nonhazardous Material**

Organization	Responsibility
Health and Safety Department	Handling, transportation, and use of explosive material and components. Receipt of and preparation for shipment of all explosives.
Environmental Operations Department	Transportation of hazardous and radioactive wastes from generator areas to waste management facilities. Preparation of radioactive, mixed, and hazardous wastes for shipment to approved disposal or treatment facilities.
Logistics and Procurement Department	Ensuring that low-level radioactive waste shipments meet U.S. Department of Transportation (DOT) requirements. Ensuring that all onsite and offsite movements of hazardous material meet DOT requirements.
Material Management Support Team	Movement and delivery of all hazardous material onsite, with the exception of explosives.

Source: SNL/CA 2002b

### Explosive Materials

Explosives are any substance or article, including a device, which is designed to function by explosion or which, by chemical reaction within itself is able to function in a similar manner even if not designed to function by explosion (unless the article is otherwise classed under a provision of 49 CFR).

**Division 1.1 Explosives:** Consists of explosives that have a mass explosion hazard. A mass explosion is one that affects almost the entire load instantaneously.

**Division 1.2 Explosives:** Consists of explosives that have a projection hazard but not a mass explosion hazard.

**Division 1.3 Explosives:** Consists of explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.

**Division 1.4 Explosives:** Consists of explosives that present a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

**Division 1.5 Blasting Agents:** Consists of very insensitive explosives. This division is comprised of substances that have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

**Division 1.6 Explosives:** Consists of extremely insensitive articles that do not have a mass explosive hazard. This division is comprised of articles which contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.

**Table 4-9. Waste Shipments during Calendar Year 2000**

Disposal Site	Outbound Waste Shipments
EnSCO, Inc., El Dorado, Arizona	4
Chemical Waste Management, Kettleman City, California	11
BFI Stericycle, Inc., San Leandro, California	49
EnSCO West, Inc., Wilmington, California	6
Nevada Test Site, Mercury, Nevada	1
U.S. Filter, Inc., Vernon, California	2
Permafix, Inc., Gainesville, Florida	1
SET Environmental, Houston, Texas	1
Treatment One, Chicago, Illinois	1

Source: SNL/CA 2002b

The Logistics and Procurement Department handles documentation of shipments of explosives offsite. The Explosives Handler in Building 981 prepares the explosives for shipment. The Logistics and Procurement Department also performs inspections of vehicles and provides route maps to the drivers. Two shipments of explosives were sent from SNL/CA during calendar year 2000 (SNL/CA 2002b).

### Receipt, Transfer, and Shipping of Nuclear and Radioactive Material and Hazardous Chemicals

All nuclear and radioactive materials and hazardous chemicals are received at Shipping and Receiving Building. The package integrity is verified, and the material is prepared for onsite transport, if required (SNL/CA 2002b).

All onsite transfers of nuclear and radioactive materials and hazardous chemicals are performed by the Material Management Support Team. All personnel performing onsite transfers are trained in accordance with DOT requirements (SNL/CA 2002b).

Documentation for shipments of nuclear and radioactive materials and hazardous chemicals is prepared by the

Logistics and Procurement Department. The Logistics and Procurement Department also inspects vehicles and provides route maps to the drivers. Hazardous waste shipments are the responsibility of the Hazardous Waste Program within the Environmental Operations Department. During calendar year 2000, 109 shipments (including 76 waste shipments) containing hazardous material left SNL/CA (SNL/CA 2002b).

#### **Transportation of Nonhazardous Materials and Waste**

Other transportation on site includes the movement of nonhazardous materials (office furniture, computers, mail, etc.). These materials are received and transported to their final destination by the Logistics and Procurement Department (SNL/CA 2002b).

Nonhazardous solid waste is trucked to a local landfill. Waste pickup is performed once per week (SNL/CA 2002b).

### **4.11 WASTE GENERATION**

#### **4.11.1 DEFINITION OF RESOURCE**

Waste management activities consist of managing, storing, and preparing for offsite disposal of all wastes in accordance with applicable Federal and state regulations, permits obtained under these regulations, and DOE orders. The waste categories generated onsite under normal operations include radioactive waste (including LLW and LLMW); hazardous waste, which includes RCRA hazardous (chemical and explosives) waste, California Toxic waste, TSCA waste (primarily asbestos and polychlorinated biphenyls [PCBs]) and biohazardous (medical) waste; and nonhazardous solid waste and process wastewater.

#### **4.11.2 REGION OF INFLUENCE**

The ROI for waste generation involves SNL/CA and its facilities. The ROI does not include offsite waste disposal facilities because they involve the private sector or other Federal facilities. The transportation of waste to disposal sites is discussed in Section 4.10.

#### **4.11.3 AFFECTED ENVIRONMENT**

The generation of the many different waste streams at SNL/CA creates a continuous need for proper packaging, labeling, manifesting, transporting, storing, and disposing solutions.

##### **4.11.3.1 Normal Operations**

The affected environment considered under this analysis is limited to those facilities that generate waste under normal operations at SNL/CA. Normal operations encompass all current operations that are required to maintain research and development at SNL/CA facilities.

### **Waste Categories**

**Low-Level Waste (LLW)**—Waste that contains radioactivity and is not classified as high-level waste, transuranic waste, or spent nuclear fuel or by-product tailings containing uranium or thorium from processed ore (as defined in Section 11[e][2] of the *Atomic Energy Act* [42 U.S.C. §2011]). Test specimens of fissionable material, irradiated for research and development only and not for the production of power or plutonium, may be classified as LLW, if the concentration of transuranic is less than 100 nanocuries per gram (nCi/g).

**Low-Level Mixed Waste (LLMW)**—Waste that contains both hazardous waste regulated under the RCRA and low-level waste.

**RCRA Hazardous Waste**—Any solid waste (definition includes semisolid, liquid, or gaseous material) listed in Subpart D of 40 CFR Part 261, or having the characteristics of ignitability, corrosivity, toxicity, or reactivity, defined by the RCRA.

**SNL/CA Hazardous Waste**—Waste includes RCRA hazardous waste, California Toxic waste, TSCA waste, and Biohazardous wastes.

**Municipal Solid Waste**—Waste includes office and laboratory trash.

##### **4.11.3.2 New Operations**

Several new operations are currently in the planning stages at SNL/CA. However, they are considered outside of the scope of the current affected environment description for this analysis because they have not yet reached operational status. New operations are defined as programmatically planned projects with defined implementation schedules that will take place in the future. SNL/CA has identified operations at three facilities that fall under this category: LIGA Technology Facility (LTF), Distributed Information Systems Laboratory (DISL), and Glass Furnace and Melting Laboratory.

##### **4.11.3.3 Special Projects**

Special projects are limited-duration projects, such as construction, that are considered separately from facility operations. These projects can make a large contribution to the overall waste generation activities at SNL/CA. However, special projects and new programs routinely undergo program-specific assessments to consider any impacts that may result from their inception and are, therefore, not considered in-depth in the SWEA.

Facility maintenance and infrastructure support operations would continue (as outlined in Section 2.3.3) with