

The California tiger salamander (*Ambystoma californiense*) is a Federal candidate species that does not receive protection under the ESA. However, the DOE implementing regulations require the consideration of candidate species during its NEPA process. In December 2001, the California Fish and Game Commission rejected a petition to list the California tiger salamander as an endangered species under the *California Endangered Species Act* (SNL/CA 2002b). The California tiger salamander has not been seen at SNL/CA in the last two years, although SNL/CA records indicate previous sightings at the recharge basin cells, at water towers, and at Post 15. The recharge basin cells and a farm pond on adjacent property just east of the site provide the most suitable habitat for the California tiger salamander as shown in Figure 4-11 (SNL/CA 2002b, c). A recent radio telemetry monitoring study indicated that California tiger salamanders do not travel more than about 560 ft from surface bodies of water and use mammal burrows such as those of the California ground squirrel (*Spermophilus beechii*) when away from breeding ponds (Trenham 2001, SNL/CA 2002b).

The USFWS species of concern category includes former Category 2 species (such as species possibly appropriate for listing). Species of concern is a term that describes many plants and animals whose conservation status may be of concern to the USFWS, but do not have official status. Two Federal species of concern have been observed at SNL/CA. Several pair of loggerhead shrikes (*Lanius ludovicianus*) were observed at SNL/CA in 2001, with nest locations shown in Figure 4-12 (SAIC 2001a). This bird has also been designated by California as a species of special concern (SNL 2001e). No evidence of the western burrowing owl (*Athene cunicularia*) was detected during a biological survey in 2001. This owl is also a California species of special concern. Two pairs of burrowing owls were observed at SNL/CA in 1995 near the percolation ponds and again in 1996 and 1997 (SAIC 2001a).

For the consultation procedures of the ESA and section 7(c) of the 1978 amendments, the DOE has compiled information on the California red-legged frog, designated critical habitat for the California red-legged frog, and the California tiger salamander to assess possible effects that the proposed action would have on these species and critical habitat. A biological assessment has been prepared and submitted to the USFWS.

A number of species in Table 4-1 receive protection under the *Migratory Bird Treaty Act* (16 *United States Code* [U.S.C.] § 703). The golden eagle, for example, which has been sighted as a transient over the site, is also afforded protection under the *Bald and Golden Eagle Protection Act* (16 U.S.C. § 668). The loggerhead shrike is the only bird species listed in Table 4-1 that is currently nesting at SNL/CA. The ferruginous hawk (*Buteo regalis*) and northern harrier (*Circus cyaneus*) have been occasionally observed at

SNL/CA since 1994 and may use the area for foraging (SAIC 2001a, SNL/CA 2002b).

## 4.7 CULTURAL RESOURCES

### 4.7.1 DEFINITION OF RESOURCE

Cultural resources are prehistoric or historic archaeological sites, buildings, structures, districts, objects, or places considered important to a culture or community. Cultural resources are those that have been recommended as or determined to be eligible or potentially eligible for inclusion in the National Register of Historic Places (NRHP), or are religious or sacred sites important to Native Americans.

In order to be included in the NRHP, a resource should retain most, if not all, of seven aspects of integrity: location, design, setting, workmanship, material, feeling, and association. Based on the standards of the National Park Service (NPS), the resource must meet a cutoff date of 50 years in age to be eligible, thereby allowing the historical perspective necessary to evaluate significance. Finally, a resource must meet one or more of the following criteria of importance (36 *Code of Federal Regulations* [CFR] Part 60):

**Criterion A**—Associated with events that have made a significant contribution to the broad patterns of our history.

**Criterion B**—Associated with the lives of persons significant in our past.

**Criterion C**—Embodies the distinctive characteristics of a type, period, or method of construction.

**Criterion D**—Yielded or may be likely to yield information important in prehistory or history.

### 4.7.2 REGION OF INFLUENCE

The ROI includes the entire SNL/CA site. The resources include those already identified, as well as those that have not yet been discovered, such as buried archaeological sites and unknown Native American resources. The site currently includes both built areas and undisturbed areas, and the area surrounding the site is a mix. Any changes in land use, such as construction of new buildings, would not change the visual characteristics of the area. Thus, there is no concern for visual impacts to nearby cultural resources and the ROI does not extend off the site.

### 4.7.3 AFFECTED ENVIRONMENT

#### 4.7.3.1 Overview of Cultural Resource Studies and Results

SNL/CA has conducted two comprehensive studies of cultural resources on the site. In 1990, an assessment of

cultural resources was completed and included a review of literature and official documents, field inventories, and consultation with the California Native American Heritage Commission (Busby *et al.* 1990). The goal of the assessment was to identify any potentially important cultural resources located on SNL/CA, including prehistoric, historic, and Native American resources. The field inventories included all areas outside of the central building compound. Within the compound, the field inventories included all open or otherwise undeveloped areas. An assessment of the existing buildings was also conducted. Finally, the Native American Heritage Commission, and a person knowledgeable of resources important to the tribe that inhabited the area historically, was consulted to identify any religious resources and sacred sites important to Native Americans. The only resources identified on the site were the buildings and structures associated with SNL/CA—no prehistoric resources, Native American resources, or historic archaeological sites were identified. Busby *et al.* (1990) recommended that none of the buildings or structures identified were eligible or potentially eligible for the NRHP.

In October 2001, SNL/CA conducted an in-depth SNL/CA historic building survey (SNL 2001d). The survey provided an historic context within which the buildings would be evaluated for significance under the criteria listed above (SNL 2001f). At the time, there were 70 buildings on the site, of which 45 were included in the survey. These buildings included permanent and semipermanent facilities; temporary and mobile structures were not included. The survey found that none of the buildings were historically significant or eligible for the NRHP. The results of this historic building survey will be sent to the State Historic Preservation Officer (SHPO) for consultation.

#### 4.7.3.2 Unidentified Sites

Despite the apparent lack of important resources on SNL/CA, there remains the possibility for currently unidentified resources to be located there. These unidentified resources would most likely consist of buried archaeological sites. Soils underlying SNL/CA, which were deposited because of alluvial transport, are Holocene in age (deposited in the past 10,000 years) and thus there is the potential for buried sites. No buried archaeological sites have yet been discovered on SNL/CA. These types of resources would only be discovered during construction or other ground-disturbing activities.

#### 4.7.4 CULTURAL RESOURCE PROTECTION AT SANDIA NATIONAL LABORATORIES, CALIFORNIA

Because activities at SNL/CA are conducted by a federal agency or by its contractors, there is a body of legislation applicable to all Federal agencies that protect cultural resources at SNL/CA (see Chapter 7). The DOE has

implementing regulations and policies that follow this legislation. In addition, there are personnel assigned within DOE and SNL with responsibility for overseeing compliance with these regulations and policies. Proposed undertakings at the site undergo review by the DOE to determine if the proposed activity will affect important cultural resources. These determinations are then reviewed by the California SHPO. If there is a potential for impacts to occur, the DOE and the SHPO consult on measures to be implemented to avoid, reduce, or mitigate any potential adverse impacts.

## 4.8 AIR QUALITY

### 4.8.1 DEFINITION OF RESOURCE

Measuring or modeling ambient pollutant concentrations and comparing the concentrations to the corresponding standards determine ambient air quality. The EPA has set the National Ambient Air Quality Standards (NAAQS) as directed by the *Clean Air Act* (CAA) of 1970 (42 U.S.C. §§7401-7671q) for several criteria pollutants to protect human health and welfare (40 CFR Part 50). The primary NAAQS are established at levels necessary to protect human health with an adequate margin of safety while the secondary NAAQS specify the levels of air pollution determined appropriate to protect the public welfare from any known or anticipated adverse effects associated with air contaminants. These pollutants include particulate matter less than 10 microns ( $\mu\text{m}$ ) in diameter ( $\text{PM}_{10}$ ), sulfur dioxide ( $\text{SO}_2$ ), carbon monoxide (CO), nitrogen dioxide ( $\text{NO}_2$ ), lead (Pb) and ozone ( $\text{O}_3$ ).

In addition, two additional criteria pollutant standards promulgated by EPA, the 8-hour ozone standard and the standard for particulate matter up to 2.5  $\mu\text{m}$  in diameter ( $\text{PM}_{2.5}$ ), have recently been upheld by the courts with implementation of the standards expected around 2005. The EPA will then determine the attainment or non-attainment status of an area with respect to the new standards and require the states to submit an implementation plan to address any noncompliance.

Enforcement authority of the CAA regulations for non-radiological air emissions has been delegated to the local air quality management districts. SNL/CA is within the Bay Area Air Quality Management District (BAAQMD) that regulates emission sources under the CAA and State Ambient Air Quality Standards (SAAQS).

### 4.8.2 REGION OF INFLUENCE

Regional air quality is influenced by the quantity of air pollutants emitted to the atmosphere within the region, by the quantity of air pollutants transported into the region, and by local geography, meteorology, and climate. The ROI for SNL/CA air quality is the Livermore Valley basin. SNL/CA is located in the southeastern portion of