

## 5.5 Hazardous Materials Handling

### 5.5.1 Introduction

The Hidden Hills Solar Electric Generating System (HHSEGS) will be located on privately owned land in Inyo County, California, adjacent to the Nevada border. It will comprise two solar fields and associated facilities: the northern solar plant (Solar Plant 1) and the southern solar plant (Solar Plant 2). Each solar plant will generate 270 megawatts (MW) gross (250 MW net), for a total net output of 500 MW. Solar Plant 1 will occupy approximately 1,483 acres (or 2.3 square miles), and Solar Plant 2 will occupy approximately 1,510 acres (or 2.4 square miles). A 103-acre common area will be established on the southeastern corner of the site to accommodate an administration, warehouse, and maintenance complex, and an onsite switchyard. A temporary construction laydown and parking area on the west side of the site will occupy approximately 180 acres.

Each solar plant will use heliostats – elevated mirrors guided by a tracking system mounted on a pylon – to focus the sun’s rays on a solar receiver steam generator (SRSG) atop a tower near the center of each solar field. The solar power tower technology for the HHSEGS project design incorporates an important technology advancement, the 750-foot-tall solar power tower. One principle advantage of the HHSEGS solar power tower design is that it results in more efficient land use and greater power generation. The new, higher, 750-foot solar power tower allows the heliostat rows to be placed closer together, with the mirrors at a steeper angle. This substantially reduces mirror shading and allows more heliostats to be placed per acre. More megawatts can be generated per acre and the design is more efficient overall.

In each solar plant, one Rankine-cycle steam turbine will receive steam from the SRSG (or solar boiler) to generate electricity. The solar field and power generation equipment will start each morning after sunrise and, unless augmented, will shut down when insolation drops below the level required to keep the turbine online. Each solar plant will include a natural-gas-fired auxiliary boiler, used to augment the solar operation when solar energy diminishes or during transient cloudy conditions, as well as a startup boiler, used during the morning startup cycle, and a nighttime preservation boiler, used to maintain system temperatures overnight. On an annual basis heat input from natural gas will be limited by fuel use and other conditions to less than 10 percent of the heat input from the sun.

To save water in the site’s desert environment, each solar plant will use a dry-cooling condenser. Cooling will be provided by air-cooled condensers, supplemented by a partial dry-cooling system for auxiliary equipment cooling. Raw water will be drawn daily from onsite wells located in each power block and at the administration complex. Groundwater will be treated in an onsite treatment system for use as boiler make-up water and to wash the heliostats.

Two distinct transmission options are being considered because of a unique situation concerning Valley Electric Association (VEA). Under the first option, the project would interconnect via a 230-kilovolt (kV) transmission line to a new VEA-owned substation (Tap Substation) at the intersection of Tecopa Road<sup>1</sup> and Nevada State Route (SR) 160 (the

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<sup>1</sup> The road is also called Tecopa Highway and Old Spanish Trail Highway. The names are generally used interchangeably.

Tecopa/SR 160 Option). The other option is a 500-kV transmission line that interconnects to the electric grid at the Eldorado Substation (the Eldorado Option), in Boulder City, Nevada.

A 12- to 16-inch-diameter natural gas pipeline will be required for the project. It will exit the HHSEGS site at the California-Nevada border and travel on the Nevada side southeast along the state line, then northeast along Tecopa Road until it crosses under SR 160. From this location a 36-inch line will turn southeast and continue approximately 26 miles, following the proposed Eldorado Option transmission line corridor, to intersect with the Kern River Gas Transmission (KRGT) pipeline. A tap station will be constructed at that point to connect it to the KRGT line. The total length of the natural gas pipeline will be approximately 35.3 miles.

The transmission and natural gas pipeline alignments will be located in Nevada, primarily on federal land managed by the U.S. Bureau of Land Management (BLM), except for small segments of the transmission line (both options) in the vicinity of the Eldorado Substation, which is located within the city limits of Boulder City, Nevada. A detailed environmental impact analysis of the transmission and natural gas pipeline alignments will be prepared by BLM.

This section is organized as follows: Section 5.5.2 describes the hazardous materials laws, ordinances, regulations, and standards (LORS) that may apply to the project. A discussion of existing hazardous materials users in the project area (affected environment) is included in Section 5.5.3. The environmental analysis to determine potential impacts and potential cumulative impacts from hazardous materials used in construction and operation of the project are provided in Sections 5.5.4 and 5.5.5, respectively. Mitigation measures proposed for the project are provided in Section 5.5.6. Agencies and agency contacts are included in Section 5.5.7. Lastly, permits and schedules and the references cited in the preparation of this section are listed in Sections 5.5.8 and 5.5.9, respectively.

## 5.5.2 Laws, Ordinances, Regulations, and Standards

The storage and use of hazardous materials, including regulated substances, at HHSEGS are governed by federal, state, and local laws. Applicable laws and regulations address the use and storage of hazardous materials to protect the environment from contamination; they are also intended to protect facility workers and the surrounding community from exposure to hazardous materials. The LORS applicable to HHSEGS are summarized in Table 5.5-1.

**TABLE 5.5-1**  
Laws, Ordinances, Regulations, and Standards Applicable to Hazardous Materials Handling

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
<b>Federal</b>			
29 CFR 1910 et seq. and 1926 et seq.	Requirements for equipment used to store and handle hazardous materials.	EPA and Cal-OSHA	Section 5.16.4.2 (Worker Health and Safety)
49 CFR Parts 172, 173, and 179	Provides standards for labeling and packaging of hazardous materials during transportation.	CHP and DOT	Section 5.12.2.1 (Traffic and Transportation)

**TABLE 5.5-1**  
Laws, Ordinances, Regulations, and Standards Applicable to Hazardous Materials Handling

<b>LORS</b>	<b>Requirements/Applicability</b>	<b>Administering Agency</b>	<b>AFC Section Explaining Conformance</b>
Section 302, EPCRA (Pub. L. 99-499, 42 USC 11022)  Hazardous Chemical Reporting: Community Right-To-Know (40 CFR 370)	Requires one time notification if extremely hazardous substances are stored in excess of TPQs.	Inyo County Department of Environmental Health Services	Section 5.5.6.4.1
Section 304, EPCRA (Pub. L. 99-499, 42 USC 11002)  Emergency Planning And Notification (40 CFR 355)	Requires notification when there is a release of hazardous material in excess of its RQ.	Inyo County Department of Environmental Health Services	Section 5.5.6.4.1
Section 311, EPCRA (Pub. L. 99-499, 42 USC 11021)  Hazardous Chemical Reporting: Community Right-To-Know (40 CFR 370)	Requires that either MSDSs for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and Inyo County Department of Environmental Health Services	Inyo County Department of Environmental Health Services	Section 5.5.6.4.1
Section 313, EPCRA (Pub. L. 99-499, 42 USC 11023)  Toxic Chemical Release Reporting: Community Right-To-Know (40 CFR 372)	Requires annual reporting of releases of hazardous materials.	Inyo County Department of Environmental Health Services	Section 5.5.6.4.1
Section 311, Clean Water Act (Pub. L. 92-500, 33 USC 1251 et seq.)  Oil Pollution Prevention (40 CFR 112)	Requires preparation of an SPCC plan if oil is stored in a single aboveground storage tank with a capacity greater than 660 gallons or if the total petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons.  The facility will have petroleum in excess of the aggregate volume of 1,320 gallons.	Inyo County Department of Environmental Health Services	Section 5.5.6.4.3
Pipeline Safety Laws (49 USC 60101 et seq.)  Hazardous Materials Transportation Laws (49 USC 5101 et seq.)  Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards (49 CFR 192)	Specifies natural gas pipeline construction, safety, and transportation requirements.	DOT and CHP	Section 5.5.4.4

**TABLE 5.5-1**  
Laws, Ordinances, Regulations, and Standards Applicable to Hazardous Materials Handling

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
<b>State</b>			
Health and Safety Code, Section 25500, et seq. (HMBP)	Requires preparation of an HMBP if hazardous materials are handled or stored in excess of threshold quantities.	Inyo County Department of Environmental Health Services	Section 5.5.6.4.1
Health and Safety Code, Section 25270 through 25270.13 (Aboveground Petroleum Storage Act)	Requires preparation of an SPCC plan if oil is stored in a single aboveground storage tank with a capacity greater than 660 gallons or if the total petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons. The facility will have petroleum in excess of the aggregate volume of 1,320 gallons.	Inyo County Department of Environmental Health Services	Section 5.5.6.4.3
Health and Safety Code, Section 25249.5 through 25249.13 (Safe Drinking Water and Toxics Enforcement Act) (Proposition 65)	Requires warning to persons exposed to a list of carcinogenic and reproductive toxins and protection of drinking water from same toxins.	Not applicable (CA OEHHA administers program, but does not check compliance)	Section 5.5.6.4.4
California Public Utilities Commission (CPUC) General Order Nos. 112-E and 58-A	Specify standards for gas service and construction of gas gathering, transmission, and distribution piping systems.	CPUC	Section 5.5.6.4.4
<b>Local</b>			
There are no local ordinances regulating hazardous materials management			

## Notes:

AFC	Application for Certification
AST	Aboveground Storage Tank
CA OEHHA	California Office of Environmental Health Hazard Assessment
CFR	Code of Federal Regulations
CHP	California Highway Patrol
DOT	U.S. Department of Transportation
EPCRA	Emergency Planning and Community Right-to-Know Act
HMBP	Hazardous Materials Business Plan
LEPC	local emergency planning committee
MSDS	Material Safety Data Sheet
Pub. L.	Public Law
RQ	Reportable Quantity
SERC	state emergency response commission
SPCC	Spill Prevention Control and Countermeasure Plan
TPQ	Threshold Planning Quantity
USC	United States Code

### 5.5.2.1 Federal LORS

Hazardous materials are governed under Titles 29 and 49 of the U.S. Code, Titles 29, 40, and 49 of the CFR, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Clean Air Act (CAA), and the Clean Water Act (CWA).

#### 5.5.2.1.1 29 CFR 1910 et seq. and 1926 et seq.

These sections contain requirements for equipment used to store and handle hazardous materials for the purpose of protecting worker health and safety. This regulation also addresses requirements for equipment necessary to protect workers in emergencies. It is designed primarily to protect worker health, but also contains requirements that affect general facility safety. The California regulations contained in Title 8 (California equivalent of 29 CFR) are generally more stringent than those contained in Title 29. The administering agency for the above authority is the United States Department of Labor's Occupational Safety and Health Administration, and the California Division of Occupational Safety and Health.

#### 5.5.2.1.2 49 CFR Parts 172, 173, and 179

These regulations provide standards for labels, placards, and markings on hazardous materials shipments by truck (Part 172), standards for packaging hazardous materials (Part 173), and for transporting hazardous materials in tank cars (Part 179). The CHP and DOT are the administering agencies for the above authority.

#### 5.5.2.1.3 CERCLA

The Superfund Amendments and Reauthorization Act of 1986 (SARA), an amendment to CERCLA, governs hazardous materials. The applicable part of SARA for HHSEGS is Title III, otherwise known as the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA). Title III requires states to establish a process for developing local chemical emergency preparedness programs and to receive and disseminate information on hazardous materials present at facilities in local communities. The law provides primarily for planning, reporting, and notification concerning hazardous materials. Key sections of the law are:

- Section 302 – Requires that certain emergency planning activities be conducted when Extremely Hazardous Substances (EHSs) are present in excess of their TPQs. EHSs and their TPQs are found in Appendices A and B of 40 CFR Part 355.
- Section 304 – Requires immediate notification to the LEPC and the SERC when a hazardous material is released in excess of its RQ. If a CERCLA-listed hazardous substance RQ is released, notification must also be given to the National Response Center in Washington, D.C. (RQs are listed in 40 CFR Part 302, Table 302.4). These notifications are in addition to notifications given to the local emergency response team or fire personnel.
- Section 311 – Requires that either MSDSs for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and local fire department.
- Section 313 – Requires annual reporting of hazardous materials released into the environment either routinely or as a result of an accident.

The administering agencies for the above authority are the U.S. Environmental Protection Agency (EPA) Region 9, the National Response Center, and the Inyo County Department of Environmental Health Services. The Department of Environmental Health Services is a Certified Unified Program Agency (CUPA), and as such the designated agency responsible for implementation of State hazardous materials management LORS.

#### **5.5.2.1.4 Clean Air Act**

Regulations (40 CFR 68) under the CAA are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a Threshold Quantity (TQ) or greater of listed regulated substances to develop a Risk Management Plan (RMP), including hazard assessments, prevention programs and response programs to prevent accidental releases of listed chemicals. Section 112(r)(5) of the CAA discusses the regulated substances. These substances are listed in 40 CFR 68.130. No regulated substances will be used at the HHSEGS project. Therefore, the preparation and submittal of an RMP will not be required.

#### **5.5.2.1.5 Clean Water Act**

The Spill Prevention Control and Countermeasure (SPCC) Plan program under the CWA is designed to prevent or contain the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Regulations under the CWA (40 CFR 112) require facilities to prepare a written SPCC Plan if they store oil and its release would pose a threat to navigable waters. The SPCC program is applicable if a facility has a single oil aboveground storage tank (AST) with a capacity greater than 660 gallons, total AST storage greater than 1,320 gallons, or underground storage capacity greater than 42,000 gallons. The SPCC program is administered by the local CUPA in California, which is the Inyo County Department of Environmental Health Services. For the SPCC related to the proposed substation in Nevada, the local electric utility (Valley Electric Association, Inc.) is responsible for compliance. Compliance with other elements of the CWA, such as stormwater management and National Pollutant Discharge Elimination System permitting, is described in Section 5.15, Water Resources.

#### **5.5.2.1.6 Natural Gas Pipeline Construction and Safety**

Title 40 of the CFR, parts 190 through 192, specifies safety and construction requirements for natural gas pipelines. Part 190 outlines pipeline safety procedures, Part 191 requires a written report for any reportable incident, and Part 192 specifies minimum safety requirements for pipelines.

#### **5.5.2.1.7 Other**

Other related federal laws that address hazardous materials but do not specifically address their handling are the Resource Conservation and Recovery Act (RCRA), which is discussed in Section 5.14, Waste Management, and the Occupational Safety and Health Act, which is discussed in Section 5.16, Worker Health and Safety.

### **5.5.2.2 State LORS**

California laws and regulations relevant to hazardous materials handling at HHSEGS include Title 8 of the California Code of Regulations (CCR), Health and Safety Code Section 25500 (hazardous materials), and the Aboveground Petroleum Storage Act (petroleum in aboveground tanks).

**5.5.2.2.1 Title 8, California Code of Regulations, Section 339; Section 3200 et seq., Section 5139 et seq. and Section 5160 et seq.**

Section 339 of Title 8 of the CCR lists hazardous chemicals relating to the Hazardous Substance Information and Training Act ; 8 CCR Section 3200 et seq. and 5139 et seq. address control of hazardous substances; 8 CCR Section 5160 et seq. addresses hot, flammable, poisonous, corrosive, and irritant substances.

**5.5.2.2.2 Health and Safety Code Section 25500**

This law is found in the California Health and Safety Code, Section 25500, et seq., and in the regulations contained in 19 CCR Section 2620, et seq. The law requires local governments to regulate business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit an HMBP to their local administering agency (i.e., CUPA). They must also report releases to their CUPA and the Governor's Office of Emergency Services. The TQs for hazardous materials are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases measured at standard temperature and pressure.

**5.5.2.2.3 Health and Safety Code Section 25531**

This law regulates the registration and handling of regulated substances, per California Health and Safety Code, Section 25531, et seq. Regulated substances are any chemicals designated under 40 CFR 68.130 as part of the CAA's Accidental Release Prevention Program or designated by the state of California under its California Accidental Release Prevention (CalARP) program. Facilities handling or storing regulated substances at or above TQs must register with their local CUPA and, if requested, must prepare an RMP. HHSEGS will not handle and store any regulated substances.

**5.5.2.2.4 Aboveground Petroleum Storage Act**

This law is found in the California Health and Safety Code Sections 25270 to 25270.13 and is intended to ensure compliance with the federal CWA. The law applies if a facility has an AST with a capacity greater than 660 gallons or a combined AST capacity greater than 1,320 gallons and if there is a reasonable possibility that the tank(s) may discharge oil in "harmful quantities" into navigable waters or adjoining shore lands. If a facility falls under these criteria, it must prepare an SPCC Plan. The law does not cover AST design, engineering, construction, or other technical requirements, which are usually determined by local fire departments. Although there are no navigable waterways or shore lands near the project site, the HHSEGS facility will store greater than 10,000 gallons of petroleum products onsite, and the facility will be required to prepare an SPCC plan.

**5.5.2.2.5 Safe Drinking Water and Toxics Enforcement Act (Proposition 65)**

This California law requires the state to identify chemicals that cause cancer and reproductive toxicity, contains requirements for informing the public of the presence of these chemicals, and prohibits discharge of the chemicals into sources of drinking water. Lists of the chemicals of concern are published and updated periodically by CA OEHHA. Some of the chemicals to be used at HHSEGS are on the cancer-causing chemicals list.

**5.5.2.2.6 California Fire Code, Article 80 and others**

The code includes provisions for storage and handling of hazardous materials. There is considerable overlap between this code and Chapter 6.95 of the California Health & Safety

Code. The fire code, however, contains independent provisions regarding fire protection and neutralization systems for emergency venting (Section 80.303, D [compressed gases]). Article 4 establishes hazardous materials storage thresholds above which a permit is required. Article 79 presents requirements for combustible and flammable liquids. The administering agency for the above authority is the Inyo County Department of Environmental Health Services.

#### **5.5.2.2.7 Natural Gas Pipeline Construction and Safety**

The CPUC enforces General Order No. 58-A specifying standards for natural gas service in the State of California, and General Order No. 112-E specifying rules governing the design, construction, testing, operation, and maintenance of natural gas gathering, transmission, and distribution piping systems. All offsite portions of the gas line will be located in Nevada. All state and federal LORS regarding gas line design and construction will be followed.

### **5.5.2.3 Local LORS**

#### **5.5.2.3.1 Inyo County**

The Inyo County Department of Environmental Health Services is the designated CUPA for the HHSEGS site and is responsible for administering HMBPs/Hazardous Material Management Programs (HMMPs), SPCC plans, and RMPs filed by businesses located in the county. The Environmental Health Services Department is also responsible under the CUPA program for underground and aboveground storage tank compliance. In addition, the CUPA is the regulatory body for all hazardous waste generated in the county (see Section 5.14, Waste Management). The CUPA is responsible for ensuring that businesses and industry store and use hazardous materials safely and in conformance with various regulatory codes. The CUPA performs inspections at established facilities to verify that hazardous materials are properly stored and handled and that the types and quantities of materials reported in a firm's HMBP are accurate.

Inyo County does not have additional LORS that apply to Hazardous Materials Handling, but administers the state programs as the CUPA.

#### **5.5.2.4 Other Codes**

The design, engineering, and construction and operation of hazardous materials storage and dispensing systems will be in accordance with all applicable codes and standards, including the following:

- California Vehicle Code, 13 CCR 1160, et seq. – Provides the CHP with authority to adopt regulations for the transportation of hazardous materials in California. The CHP can issue permits and specify the route for hazardous material delivery.
- State Building Standard Code, Health and Safety Code Sections 18901 to 18949 – Incorporates the Uniform Building Code, Uniform Fire Code, and the Uniform Plumbing Code.
- American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII.

### 5.5.3 Affected Environment

The HHSEGS site is located in the Mojave Desert on the California-Nevada border in unincorporated Inyo County, California (Figure 2.1-1). As part of this AFC, identification of sensitive receptor facilities (such as schools, daycare facilities, convalescent centers, or hospitals) within 6 miles of the project site was performed. No sensitive receptors were located within the search radius. Figure 5.9-1, in Section 5.9, Public Health, depicts the closest residences to the project site and the location of the St. Therese Mission, which is a project currently under construction and is described in more detail in Section 5.6, Land Use. The nearest hospital, Desert View Regional Medical Center at 360 South Lola Lane, Pahrump, Nevada, is located approximately 30 miles from the HHSEGS site.

### 5.5.4 Environmental Analysis

Materials to be used at HHSEGS during construction and operation were evaluated for hazardous characteristics. That evaluation is discussed in this subsection. Some of these materials will be stored at the generating site continuously. Others will be brought onsite for the initial startup and maintenance. Some materials will be used only during startup. Hazardous materials will not be stored or used in the gas supply line or electric transmission line corridors during operation of the plant. Storage locations are described in Table 5.5-2. Table 5.5-3 presents information about these materials, including trade names; chemical names; Chemical Abstract Service (CAS) numbers; maximum quantities onsite; RQs; TPQs; and status as a Proposition 65 chemical (a chemical known to be carcinogenic or cause reproductive problems in humans). Health hazards and flammability data are summarized in Table 5.5-4. Table 5.5-4 also contains information on incompatible chemicals. Measures to mitigate the potential effects from the hazardous materials are presented in Section 5.5.5.

#### 5.5.4.1 Construction Phase

Hazardous materials to be used during construction of the project and its associated linear facilities will include gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. There are no feasible alternatives to motor fuels and oils for operating construction equipment. The types of paint required are dictated by the types of equipment and structures that must be coated and by the manufacturers' requirements for coating.

The quantities of hazardous materials that will be onsite during construction are small, and similar to the quantities used during operation. Construction personnel will be trained to handle the materials properly. The most likely possible incidents will involve the potential for fuels, oil, and grease dripping from construction equipment. The small quantities of fuel, oil, and grease that might drip from construction equipment will have relatively low toxicity. Therefore, the expected environmental impact is minimal.

Small oil spills may also occur during onsite refueling. The potential environmental effects from fueling operations are expected to be limited to small areas of contaminated soil. If a fuel spill occurs on soil, the contaminated soil will be placed into barrels or trucks for offsite disposal as a hazardous waste. The worst-case scenario for a chemical release from fueling operations would be a vehicle accident involving a service or refueling truck.

**TABLE 5.5-2**  
Use and Location of Hazardous Materials at HHSEGS

<b>Chemical</b>	<b>Use</b>	<b>Storage Location</b>	<b>State</b>	<b>Type of Storage</b>
Antiscalant ( Spectrus BD 1500)	Antiscalant for cooling tower	Hazardous materials storage shed	Liquid	Continuously onsite
Cleaning chemicals/detergents	Periodic cleaning of steam turbine	Maintenance shop	Liquid	Continuously onsite
Diesel No. 2	Fuel for fire pump engine/generators	Near fire pump	Liquid	Continuously onsite
Hydraulic oil	High-pressure turbine starting system, turbine control valve actuators	Contained within equipment	Liquid	Continuously onsite
Lubrication oil	Lubricate rotating equipment (e.g., steam turbine bearings)	Contained within equipment	Liquid	Continuously onsite
Mineral insulating oil	Transformers/switchyard	Contained within transformers	Liquid	Continuously onsite
Oxygen scavenger (Cortrol OS5607)	Boiler oxygen scavenger /metal passivator	Containers near condensate polisher area	Liquid	Continuously onsite
Sodium Hydroxide Solution	pH Control	Hazardous materials storage shed	Liquid	Continuously onsite
Steam Condensate Treatment (Steamate NA1321)	Condensate and feedwater pH control	Hazardous materials storage shed	Liquid	Continuously onsite
Sulfur hexafluoride	Switchyard/switchgear devices	Contained within equipment	Gas	Continuously onsite
Sodium Hypochlorite	Cooling tower disinfectant	Hazardous materials storage shed	Liquid	Continuously onsite
Acrylate Terpolymer	Cooling tower corrosion inhibitor	Hazardous materials storage shed	Liquid	Continuously onsite

**TABLE 5.5-3**  
**HHSEGS Chemical Inventory**

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ <sup>a</sup>	RQ of Material as Used Onsite <sup>b</sup>	EHS TPQ <sup>c</sup>	Regulated Substance TQ <sup>d</sup>	Prop 65
Antiscalant (Spectrus BD 1500)	Not Available (non-hazardous)	None	70 gal	e	e	e	e	No
Cleaning chemicals/detergents	Various	None	100 gal	e	e	e	e	No
Diesel No. 2	Oil	None	20,500 gal	42 gal <sup>f</sup>	42 gal <sup>f</sup>	e	e	Yes
Hydraulic oil	Oil	None	500 gal	42 gal <sup>f</sup>	42 gal <sup>f</sup>	e	e	No
Lubrication oil	Oil	None	30,000 gal	42 gal <sup>f</sup>	42 gal <sup>f</sup>	e	e	Yes
Mineral insulating oil	Oil	8012-95-1	105,000 gal	42 gal <sup>f</sup>	42 gal <sup>f</sup>	e	e	Yes
Oxygen scavenger (Cortrol OS5607)	Carbonic Dyhdrazide (5-10%)	497-18-7	170 gal	e	e	e	e	No
Sodium Hydroxide Solution	Sodium hydroxide (30%)	1310-73-2	170 gal	1000 lb	3333 lb	e	e	No
Steam Condensate Treatment (Steamate NA1321)	Ammonium Hydroxide (30-60%)	1336-21-6	300 gal	1000 lb	1000 lb	500 lb	e	No
Sulfur hexafluoride	Sulfur hexafluoride	2551-62-4	200 lb	e	e	e	e	No
Sodium hypochlorite	Sodium Hypochlorite (12.5%)	7681-52-9	1,800 gal	100 lb	800 lb	e	e	No
Gengard GN7004	Acrylate Terpolymer (15-40%)	903573-39-7	10 gal	NA	NA	NA	NA	Yes

<sup>a</sup> Reportable quantity for a pure chemical, per CERCLA [Ref. 40 CFR 302, Table 302.4]. Release equal to or greater than RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment or human health or safety must be reported.

<sup>b</sup> Reportable quantity for materials as used onsite. Since some of the hazardous materials are mixtures that contain only a percentage of a reportable chemical, the reportable quantity of the mixture can be different than for a pure chemical. For example, if a material only contains 10% of a reportable chemical and the RQ is 100 lb., the reportable quantity for that material would be (100 lb.)/(10%) = 1,000 lb.

<sup>c</sup> Threshold Planning Quantity [Ref. 40 CFR Part 355, Appendix A]. If quantities of extremely hazardous materials equal to or greater than TPQ are handled or stored, they must be registered with the local Administering Agency.

<sup>d</sup> TQ is Threshold Quantity from 19 CCR 2770.5 (state) or 40 CFR 68.130 (federal)

<sup>e</sup> No reporting requirement. Chemical has no listed threshold under this requirement.

<sup>f</sup> State reportable quantity for oil spills that will reach California state waters [Ref. CA Water Code Section 13272(f)]

**TABLE 5.5-4**  
Toxicity of Hazardous Materials

Hazardous Materials	Physical Description	Health Hazard	Reactive & Incompatibles	Flammability*
Alum	Solid	Irritant to eyes. Irritant if ingested.	Strong bases.	Non-flammable
Antiscalant (Spectrus BD 1500)	Liquid	Irritant to eyes and skin.	Strong acids.	Non-flammable
Cleaning chemicals/detergents	Liquid	Refer to individual chemical labels.	Refer to individual chemical labels.	Refer to individual chemical labels
Diesel No. 2	Oily, light liquid	May be carcinogenic.	Sodium hypochlorite. Oxidizers.	Flammable
Hydraulic oil	Oily, dark liquid	Hazardous if ingested.	Sodium hypochlorite. Oxidizers.	Combustible
Lubrication oil	Oily, dark liquid	Hazardous if ingested.	Sodium hypochlorite. Oxidizers.	Flammable
Mineral insulating oil	Oily, clear liquid	Minor health hazard.	Sodium hypochlorite. Oxidizers.	Can be combustible, depending on manufacturer
Oxygen scavenger (Cortrol OS5607)	Colorless liquid	Irritant to eyes and skin.	Strong oxidizers.	Non-flammable
Sodium Hydroxide Solution	Clear odorless liquid	Corrosive to skin, eyes, and digestive tract. Respiratory tract irritant.	Strong acids. Metals.	Non-flammable
Steam Condensate Treatment (Steamate NA1321)	Colorless liquid	Corrosive to skin and eyes. Toxic if ingested. Respiratory tract irritant.	May react with acids.	Non-flammable
Sulfur hexafluoride	Colorless gas with no odor.	Hazardous if inhaled.	Disilane.	Non-flammable
Sodium Hypochlorite	Yellow liquid	Irritant to eyes and skin.	Amines, ammonium aldehyde, ammonium carbonate, aziridine, methanol, phenylacetonitrile, ammonium nitrate, ammonium oxylate, ammonium phosphate, cellulose, ethylene imine	Non-flammable
Acrylate Terpolymer (Gengard GN7004)	Amber liquid	Irritant to eyes.	None known.	Combustible

Data were obtained from MSDSs and Lewis (1991).

\*Per Department of Transportation regulations, under 49 CFR 173: "Flammable" liquids have a flash point less than or equal to 141°F; "Combustible" liquids have a flash point greater than 141° F.

During construction of the project and linear facilities, regulated substances, as defined in California's Health and Safety Code, Section 25531, will not be used. Therefore, no discussion of regulated substance storage or handling is included in this subsection. Handling procedures for other non-CalARP-regulated hazardous materials to be used onsite during construction are presented in Section 5.5.61.

#### **5.5.4.2 Operations Phase**

The hazardous characteristics of materials being used at each power block are summarized in Table 5.5-4. Table 5.5-4 also contains information on incompatible chemicals (e.g., acids and caustics). Mixing incompatible chemicals can generate toxic gases. Measures to keep incompatible chemicals separated include separate storage and containment areas and/or berming (see Section 5.5.6).

Potential environmental and/or human health effects could be caused by accidental releases, accidental mixing of incompatible chemicals, fires, and injury to facility personnel from contact with a hazardous material.

#### **5.5.4.3 Fire and Explosion Risk**

As shown in Table 5.5-4, many of the hazardous materials to be used onsite are non-flammable. The lubrication oil and diesel fuel are flammable and will be handled in accordance with an HMBP to be approved by the Inyo County Department of Environmental Health Services. Hydraulic oil, which is classified as combustible, will also be handled in compliance with the HMBP. With proper storage and handling of flammable materials in accordance with the HMBP, the risk of fire and explosion at the generating facility will be minimal.

The natural gas that will provide HHSEGS with fuel for the auxiliary boilers at each power block is flammable and could leak from the supply line that brings gas from the KRGT line. The risk of leakage would be the normal type of risk encountered with transmitting natural gas via pipeline, but for the fact that the line will be new construction that will meet the latest standards of pipeline design and construction. Therefore, the risk of leakage will be much lower than that of an older pipeline. The 35.3-mile line will be buried primarily in or adjacent to Eldorado 500 kV transmission line corridor and, since most of the line will be on rural BLM-managed land in Nevada, it will not pass through heavily populated areas.

Southern Inyo Fire Protection District operates one year-round fire station, the Tecopa Station, located at 410 Tecopa Hot Springs Road in Tecopa, California, approximately 27 miles southwest of HHSEGS. The station has an approximate 30- to 50-minute response time to the project site. The Southern Inyo Fire Protection District indicated in March 2011 that local firefighters are equipped to handle simple HazMat incidents, but that HazMat teams from Nye County, Nevada (Nye County Fire Department and Pahrump Valley Fire Rescue Services) will need to be called in for assistance with more complex situations. These HazMat teams can be called in for assistance as part of the mutual aid agreements with Inyo County (Postle, 2011). The Pahrump Valley Fire Rescue Services' Main Station, in Pahrump, Nevada, is the closest HazMat responder. It is located approximately 26 miles from the project site and has an approximately 40 minute response time. In addition, Nye County Emergency Services has a HazMat team that operates through the Nye County Fire Department. The main response comes from Station 51 in Pahrump, approximately 28 miles from the Project, which has an approximate response time of 45 minutes. The station is staffed with 15 to 20 volunteers who

are trained as HazMat technicians. The team has the following equipment, as of April 2011: one HazMat truck with 25-foot trailer, one biohazard unit, one fire engine, and one ambulance (Jones, 2011).

### **5.5.5 Cumulative Effects**

A cumulative effect refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code § 21083; Cal. Code Regs., Title 14, §§ 15064(h), 15065(c), 15130, and 15355). Cumulative projects are described in Section 5.6.7 and include the Element Power Solar project, the St. Therese Mission project and the Pahrump Valley General Aviation Airport. Construction of the St. Therese Mission project had just commenced at the time of preparation of this Application for Certification, and the construction schedule for the other projects was not known. It is expected that the implementation of standard mitigation measures will reduce hazardous materials impacts to a less-than-significant level, and it is anticipated that hazardous materials impacts from the cumulative projects, if any, would be mitigated to a less than significant level.

The primary potential cumulative effect from the use and storage of hazardous materials would be a simultaneous release of hazardous materials from two or more locations that will migrate offsite of their respective facilities. Potentially, the two or more migrating releases could combine; thereby, posing a greater threat to the offsite population than a single release by any single site. Due to the remote location of the site, the lack of large quantities of hazardous materials, and lack of any industrial or agricultural facilities in the vicinity of the site, a simultaneous release from two or more sites of a chemical that will migrate offsite is highly unlikely especially since there are no industrial facilities in the immediate area. The project is unlikely, therefore, to have impacts that would combine cumulatively with other closely related past, present, and reasonably foreseeable future projects.

### **5.5.6 Mitigation Measures**

The following subsections present measures that the Applicant would implement during project construction and operation to mitigate risks in handling hazardous materials, particularly the risk of inadvertent spills or leaks that might pose a hazard to human health or the environment.

#### **5.5.6.1 Construction Phase**

Paints, thinners, solvents, cleaners, sealants, and lubricants will be stored in a locked utility building. These materials will be handled per the manufacturers' directions and will be replenished as needed. The emergency fuel containers will be DOT-approved, 5-gallon safety containers, secured to the construction equipment. The emergency fuel will be used only when regular vehicle fueling is unavailable.

Fuel, oil, and hydraulic fluids will be transferred directly from a service truck to construction equipment tanks and will not otherwise be stored onsite. Fueling will be performed by designated, trained service personnel either before or at the end of the workday. Service personnel will follow standard operating procedures (SOPs) for filling and servicing construction equipment and vehicles. The SOPs, which are designed to reduce the potential for incidents involving the hazardous materials, include the following:

- Refueling and maintenance of vehicles and equipment will occur in designated areas that are equipped with spill control features (e.g., berms, paved surfaces, spill response kits, etc.).
- Vehicle and equipment service and maintenance will be conducted by authorized personnel only.
- Refueling will be conducted only with approved pumps, hoses, and nozzles.
- Catch-pans will be placed under equipment to catch potential spills during servicing.
- All disconnected hoses will be placed in containers to collect residual fuel from the hose.
- Vehicle engines will be shut down during refueling.
- No smoking, open flame, or welding will be allowed in refueling or service areas.
- Refueling will be performed away from bodies of water to prevent contamination of water in the event of a leak or spill.
- When refueling is completed, the service truck will leave the project site.
- Service trucks will be provided with fire extinguishers and spill containment equipment, such as absorbents.
- Should a spill contaminate soil, the soil will be put in containers for offsite disposal as a hazardous waste.
- All maintenance and refueling areas will be inspected monthly. Results of inspections will be recorded in a logbook that will be maintained onsite.

Small spills will be contained and cleaned up immediately by trained, onsite personnel. Larger spills will be reported via emergency phone numbers to obtain help from offsite containment and cleanup crews. Personnel working on the project during the construction phase will be trained in handling of and the dangers associated with hazardous materials. An onsite health and safety person will be designated to implement health and safety guidelines and contact emergency response personnel and the local hospital, if necessary.

If a spill involves hazardous materials equal to or greater than the specific reportable quantity, all federal, state, and local reporting requirements will be followed. The California Water Code, Section 13272(f), establishes a reportable quantity of 42 gallons for spills of petroleum products in water bodies. In the event of a fire or injury, the local fire department will be called (Southern Inyo Fire Protection District Tecopa Station at 410 Tecopa Hot Springs Road in Tecopa, California).

#### **5.5.6.2 Operation Phase**

All hazardous materials stored onsite during HHSEGS operation will be handled and stored in accordance with applicable codes and regulations. All containers used to store hazardous materials will be inspected regularly for signs of leaking or failure. Incompatible materials will be stored in separate storage and containment areas. Areas susceptible to potential leaks and/or spills will be paved and bermed. Containment areas may drain to a collection area, such as an

oil/water separator or a waste collection tank. Piping and tanks will be protected from potential traffic hazards by concrete or pipe-type traffic bollards and barriers.

If a spill involves hazardous materials equal to or greater than the specific reportable quantity all federal, state, and local reporting requirements will be followed. A worker safety plan, in compliance with applicable regulations, will be prepared and implemented. It will include training for contractors and operations personnel. Training programs will include safe operating procedures, the operation and maintenance of hazardous materials systems, proper use of personal protective equipment, fire safety, and emergency communication and response procedures. All plant personnel will be trained in emergency procedures, including plant evacuation and fire prevention. In addition, designated personnel will be trained as members of a plant hazardous material response team; team members will receive the first responder and hazardous material technical training to be developed in the HMBP (Section 5.5.6.4). For emergency spills, the Southern Inyo County Fire District will assess, and if response is needed will activate the Pahrump Valley Fire-Rescue Service, which has a formally trained Hazardous Materials Response Team to provide assistance during a spill cleanup, available through a mutual aid agreement. The Pahrump Valley Fire-Rescue Service will respond and will identify the type and source of the hazardous material, oversee evacuation of people, and confine the spilled material if possible. Cleanup of the material is the responsibility of the facility causing the spill.

### **5.5.6.3 Transportation/Delivery of Hazardous Materials**

Hazardous materials will be delivered periodically to HHSEGS. Transportation will comply with the applicable regulations for transporting hazardous materials, including the DOT, EPA, California Department of Toxic Substances Control, CHP, and California State Fire Marshal.

### **5.5.6.4 Hazardous Materials Plans**

Hazardous materials handling and storage procedures, and measures for providing training in the handling of hazardous materials will be set forth in more detail in hazardous materials plans that will be developed by the Applicant prior to commencement of construction and operation.

#### **5.5.6.4.1 Hazardous Materials Business Plan**

An HMBP is required by Title 19 CCR and the Health and Safety Code (Section 25504). The plan will include an inventory and location map of hazardous materials onsite and an emergency response plan for hazardous materials incidents. The topics to be covered in the plan are:

- Facility identification
- Emergency contacts
- Inventory information (for every hazardous material)
- MSDSs for every hazardous material
- Site map
- Emergency notification data
- Procedures to control actual or threatened releases
- Emergency response procedures
- Training procedures
- Certification

The HMBP will be filed with the Inyo County Department of Environmental Health Services.

#### **5.5.6.4.2 Risk Management Plan**

The HHSEGS project will not store any regulated substances. Hence, an RMP will not be prepared for the project.

#### **5.5.6.4.3 Spill Prevention Control and Countermeasure Plan**

Federal and California regulations require an SPCC Plan if petroleum products above certain quantities are stored in ASTs. Both federal and state laws apply only to petroleum products that might be discharged to navigable waters. If stored quantities are equal to or greater than 660 gallons for a single tank, or equal to or greater than 1,320 gallons total, an SPCC Plan must be prepared. The key elements of an SPCC Plan are:

- Name, location, and telephone number of the facility
- Spill record of the facility and lessons learned
- Analysis of the facility, including:
  - Description of the facilities and engineering calculations
  - Map of the site
  - Storage tanks and containment areas
  - Fuel transfer and storage and facility drainage
  - Prediction and prevention of potential spills
- Spill response procedures
- Agency notification
- Personnel training and spill prevention

Each power block will store up to 10,000 gallons of turbine lubrication oil and 8,000 gallons of diesel fuel onsite, for a total of 20,000 gallons of turbine lubrication oil and 16,000 gallons of diesel fuel. Because the project will store more than 10,000 gallons of petroleum products, a SPCC Plan will be prepared for the project.

#### **5.5.6.4.4 Proposition 65**

The facility will use lubricating oil, turbine oils and diesel fuel. These materials are included in the State of California's Proposition 65 list of chemicals known to the state to cause cancer. The site will be appropriately labeled for all chemicals on the Proposition 65 list.

#### **5.5.6.5 Monitoring**

An extensive monitoring program will not be required because environmental effects during the construction and operation phases of the facility are expected to be minimal. However, sufficient monitoring will be performed during the construction and operation phases to ensure that the proposed mitigation measures are implemented and that they are effective in mitigating any potential environmental effects.

### **5.5.7 Involved Agencies and Agency Contacts**

Several agencies regulate hazardous materials, and they will be involved in regulating the hazardous materials stored and used at HHSEGS. At the federal level, the EPA will be involved; at the state level, the California Environmental Protection Agency will be involved. However, local agencies primarily enforce hazardous materials laws. For HHSEGS, the primary local

agency with jurisdiction will be the Inyo County Department of Environmental Health Services. The persons to contact are listed in Table 5.5-5.

**TABLE 5.5-5**  
Agency Contacts for Hazardous Materials Handling

Issue	Agency	Contact
CUPA for Hazardous Materials Inventory and Emergency Business Plan	Inyo County Environmental Health Services Department	Mark Long CUPA Program Manager 168 N. Edwards Independence, CA 93526 (760) 878-0361 mlinyoehs@gnet.com
Hazardous Materials Response, First Response	Southern Inyo Fire Protection District	Paul Postle, Chief 410 Tecopa Hot Springs Rd. Tecopa, CA 92389-0051 (760) 852-4130 Paul2701@wildblue.net
Hazardous Materials Response, Second Response/Backup	Mutual HazMat response aid provided by Pahump Valley Fire-Rescue Services	Scott F. Lewis, Fire Chief 300 North Highway 160 Pahump, Nevada 89060 (775) 727-5658

### 5.5.8 Permits Required and Permit Schedule

The Inyo County Environmental Health Services Department requires the following permits listed in Table 5.5-6.

**TABLE 5.5-6**  
Permits Required and Permit Schedule for Hazardous Materials Handling

Permit	Agency Contact	Schedule
Unified Program Facility Permit	Inyo County Environmental Health Services Department 168 N. Edwards Independence, CA 93526 Mark Long (760) 878-0361 mlinyoehs@gnet.com	Prior to storage of hazardous materials at the site.
Aboveground Storage Tank Permit	Inyo County Environmental Health Services Department 168 N. Edwards Independence, CA 93526 Mark Long (760) 878-0361 mlinyoehs@gnet.com	Prior to storage of hazardous materials in aboveground storage tanks.

### 5.5.9 References

Lewis, R. J. Sr. 1991. *Hazardous Chemical Desk Reference*, 2nd Edition.

Long, Mark. 2011. Inyo County Environmental Health Services Department. Personal communication with Jessica Brandt/CH2M HILL. March 24.

Jones, Brent. 2011. Nye County Emergency Services (NCES). Personal communication with Ashraf Shaqadan/CH2M HILL. April 6.

Pahrump Valley. 2011. Pahrump Valley Fire-Rescue Services. Available online at: <http://pahrumpfire.biz>. Accessed by Karen Parker/CH2M HILL. June 26.

Postle, Paul. 2011. Chief, Southern Inyo Fire Protection District. Personal communication with Ashraf Shaqadan/CH2M HILL. March 29 and July 11.