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5.14 Waste Management

This section discusses the potential effects on human health and the environment from nonhazardous and hazardous waste generated at the Stanton Energy Reliability Center (SERC) project. Section 5.14.1 describes project site investigations and the waste and waste streams that would be generated by the project. Section 5.14.2 describes the project's environmental analysis in terms of waste and waste disposal sites. Section 5.14.3 discusses potential cumulative effects. Section 5.14.4 describes mitigation measures. Section 5.14.5 presents laws, ordinances, regulations, and standards (LORS) that apply to the generated waste. Section 5.14.6 describes agencies that have jurisdiction over the generated waste and specifies whom to contact in those agencies. Section 5.14.7 describes permits required for generated waste and a schedule for obtaining those permits, and Section 5.14.8 provides the references used to prepare this subsection.

5.14.1 Affected Environment

This subsection discusses the condition of the 3.978-acre SERC site and the potential need to remove or otherwise treat contaminated soil or groundwater at the site. Additionally, this section identifies the various nonhazardous and hazardous waste streams for SERC construction and operation.

5.14.1.1 Site Investigations

A Phase I environmental site assessment (ESA) was conducted in August 2016 by Advantage Environmental Consultants, LLC (AEC) for the SERC site (AEC, 2016a) (see Appendix 5.14A). The ESA was conducted in accordance with methods prescribed by the American Society for Testing and Materials document entitled "Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process (Designation: E 1527-13)."

The Phase I ESA report concluded the following:

> "This assessment has not revealed any current recognized environmental conditions in connection with the Site. The former UST that was removed from the western portion of the Site (portion of the overall property to be leased from the existing landowner) is considered to be a historical recognized environmental condition in connection with the Site. In addition, during our reconnaissance of the Site, numerous containers of used oil and other chemical products were observed. Areas of stained soil and pavement were observed in the areas of several of such containers. Because such releases are likely surficial in nature, such releases are not considered to be recognized environmental conditions…
>
> "... the completion of a Phase II Environmental Site Assessment should be considered. The Phase II ESA would be conducted to evaluate the potential vapor intrusion exposure pathway (in to the future Site building) and to evaluate soil conditions in the western portion of the Site for potential contaminants of concern relative to future construction and soil management activities."

AEC completed the Phase II ESA and prepared a report dated September 14, 2016 (AEC, 2016b) (see Appendix 5.14B). Soil conditions were reported to be typical of commercial/light industrial properties. The Phase II report concluded via observations, soil sample chemical analyses, and soil gas sampling that no hazards or contaminants exist onsite that will warrant additional environmental remediation.

5.14.1.2 Project Waste Generation

Wastewater, nonhazardous waste, and hazardous waste will be generated at the SERC site during facility construction and operation.

5.14.1.2.1 Construction Phase

During construction, the primary waste generated will be nonhazardous waste. However, some hazardous waste will also be generated. All of the hazardous wastes will be generated at the plant site. The types of waste and their estimated quantities are described below. Typical wastes generated during construction and demolition are identified in Table 5.14-1.

Table 5.14-1. Potential Wastes Generated during Construction

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, and mineral wool insulation	Construction waste	Normal refuse	40 tons	Nonhazardous	Recycle and/or dispose of at a Class II or III landfill
Concrete waste	Construction	Solids	50 tons	Nonhazardous	Recycle and/or dispose of at a Class III Landfill
Scrap metals	Construction	Parts, wire, and containers	4 tons	Nonhazardous	Recycle and/or dispose of at a Class III landfill
Concrete from demolition	Removal of existing surfacing	Solids	< 1 ton	Nonhazardous	Recycle and/or dispose of at a Class III Landfill
Metal from demolition	Disposal of onsite scrap	Solids	< 1 ton	Nonhazardous	Recycle and/or dispose of at a Class III landfill
Sanitary waste	Portable toilet holding tanks	Water	240 gallons per day	Nonhazardous liquid	Remove by contracted sanitary service
Empty hazardous material containers	Construction	Drums, containers, and totes	100 each	Hazardous and nonhazardous solids	Dispose of containers < 5 gallons as normal refuse Return containers > 5 gallons to vendors for recycling or reconditioning
Spent welding materials	Construction	Solid	500 lbs	Hazardous	Dispose of at a Class I landfill
Waste oil	Construction equipment and vehicles	Hydrocarbons	250 gallons	Non-RCRA hazardous liquid	Dispose of at a permitted TSD facility
Waste oil filters	Construction equipment and vehicles	Solids	500 lbs	Hazardous	Recycle at a permitted TSD facility
Used and waste lube oil	Combustion turbine lube oil flushes	Hydrocarbons	1,600 gallons	Hazardous	Recycle at a permitted TSD facility
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	500 lbs	Hazardous	Recycle or dispose of at a permitted TSD facility
Solvents, paint, and adhesives	Maintenance	Solvents	350 gallons	Hazardous	Recycle at a permitted TSD facility
Spent lead acid batteries	Equipment	Heavy metals	10 batteries	Hazardous	Store no more than 10 batteries (up to 1 year) – recycle offsite

Table 5.14-1. Potential Wastes Generated during Construction

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Spent alkaline batteries	Equipment	Metals	50 lbs	Universal Waste solids	Recycle or dispose of offsite at a Universal Waste Destination Facility
Passivating and chemical cleaning fluid waste	Pipe cleaning and flushing	Water	2,000 gallons once before initial startup	Hazardous or nonhazardous liquid	Sample and characterize – manage accordingly and dispose of appropriately offsite
Hydrotest water	Testing equipment and piping integrity	Water	160,000 gallons	Hazardous or nonhazardous liquid	Sample and characterize – manage accordingly and dispose of appropriately offsite

Notes:

RCRA = Resource Conservation and Recovery Act
TSD = treatment, storage, and disposal

Nonhazardous Solid Waste. The nonhazardous waste streams listed below could potentially be generated from construction of the generating facility and the electric transmission line:

- **Paper, Wood, Glass, and Plastics:** Approximately 40 tons of paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty nonhazardous chemical containers during project construction. These wastes will be recycled where practical. Waste that cannot be recycled will be disposed of weekly at a Class III landfill. Onsite, the waste will be placed in dumpsters.
- **Concrete:** Approximately 50 tons of excess concrete will be generated during construction of the facility. Waste concrete will be disposed of weekly at a Class III landfill or at clean fill sites, if available, or will be recycled and disposed of at a construction and demolition site.
- **Metal:** Approximately 4 tons of metal, including steel from welding/cutting operations, packing materials, and empty nonhazardous chemical containers, as well as aluminum waste from packing materials and electrical wiring, will be generated during construction. Waste will be recycled where practical, and nonrecyclable waste will be deposited in a Class III landfill.

Wastewater. Wastewater generated during construction will include sanitary waste, stormwater runoff, equipment washdown water, and water from excavation dewatering during construction (if dewatering is required). These wastewaters could be classified as hazardous or nonhazardous depending on their chemical quality. As discussed, wastewater would be sampled and disposed of if found hazardous. Methods for disposing of nonhazardous wastewaters are identified in Section 5.14.1.2.2.

Hazardous Waste. Most hazardous waste generated during construction will consist of water from excavation dewatering (if it contains contaminants), flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Other hazardous waste, such as welding materials and dried paint, also may be generated during construction.

When pipes are cleaned and flushed, waste will be generated. The volume of flushing and cleaning waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, and paint waste is expected to be minimal. Wastewaters generated during construction could also be considered hazardous, if demonstrated so by sampling. Methods for recycling and disposing of hazardous wastes during construction are described in Section 5.14.4.1.2.

5.14.1.2.2 Operation Phase

During SERC facility operation, the primary waste generated will be nonhazardous waste. However, varying quantities of hazardous waste also will be generated periodically. The types of wastes and their estimated quantities are discussed below.

Nonhazardous Waste. For the most part, SERC will produce facility wastes typical of power generation facility operations and maintenance activities. These wastes will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity of all solid nonhazardous waste generated is estimated to be less than 10 tons per year (tpy). Large metal parts will be recycled.

Nonhazardous Wastewater. The water balance schematic diagrams, provided in Figures 2.1-4a, 2.1-4b, and 2.1-4c of Section 2, illustrate the expected waste streams and describe the waste stream flow rates. Discharges to the sanitary sewer system will be limited to reverse osmosis system reject; no sanitary facilities are currently proposed.

Wastewater from infrequent combustion turbine water washes will be collected in holding tanks (one for each combustion turbine generator) and will be hauled away by a licensed waste hauler. Each auxiliary skid for the gas turbine packages will be procured with weatherproof enclosures or will have rain shelters to prevent potential contamination of stormwaters. As such, no collection of contaminated stormwaters will be needed. Wastewater (or other wastes) from occasional small leaks on skids within the enclosures will be retained on the skid and will be tested for oily residue prior to release into surrounding permeable areas; if oil contamination is present, the wastewater (or other wastes) will be collected with rags and sorbents and will be disposed of accordingly for any contaminants observed.

Hazardous Waste. Hazardous waste generated will include waste lubricating oil, used oil filters from turbine equipment, spent catalysts, and chemical cleaning wastes. The catalyst units will contain heavy metals considered hazardous. Chemical cleaning wastes, which consist of alkaline and acidic cleaning solutions, will be generated from periodic pipe cleaning. These wastes may contain high concentrations of heavy metals, and will be collected for offsite disposal.

The chemical feed area drains will collect spillage, tank overflows, effluent from maintenance operations, and liquid from area washdowns. Water collected will be sampled and, if it is not contaminated, released. The quantity of this effluent is expected to be minimal.

The facility will use lithium-ion batteries. Lithium-ion batteries are not considered hazardous waste under the Resource Conservation and Recovery Act (RCRA) and are allowed to be disposed of in municipal landfills (Panasonic, 2015). However, in California, the batteries are considered universal waste when recycled (hazardous waste when discarded). While the batteries used at SERC will be recharged onsite repeatedly, eventually they will need to be replaced. At that time, the spent batteries will either be returned to the manufacturer for recycling or to a local battery recycler (Kinsbursky Brothers, Inc., in Anaheim, California) that can accept all types of batteries, including lithium-ion electric automobile batteries (Kinsbursky Brothers, Inc., 2016).

Wastes potentially generated during operations at the facility are summarized in Table 5.14-2.

Table 5.14-2. Potential Wastes Generated during Operations

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating and insulating oil	Small leaks and spills and amounts drained for maintenance from the combustion turbine, generator, clutch, and fuel gas compressor lubricating oil systems and oil-filled transformers	Hydrocarbons	~430 gallons/ year	Hazardous	Cleaned up using sorbent and rags—disposed of by certified oil recycler
Lubricating oil filters	Gas-turbine lubricating-oil system	Paper, metal, and hydrocarbons	~240 lbs/year	Hazardous	Recycled or disposed of by certified oil recycler
SCR catalyst units	SCR system (use tends to be 15 years)	Metal and heavy metals, including vanadium	90,000 lbs every 7 to 10 years	Hazardous	Recycled by SCR manufacturer or disposed of at Class I landfill
Carbon monoxide catalyst units	Carbon monoxide catalyst (use tends to be 5 years)	Metal and heavy metals	18,000 lbs every 10 to 15 years	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, wipe-down of equipment, etc.	Hydrocarbons and cloth	~200 lbs/year (~500 rags/year)	Hazardous	Recycled or disposed of by certified oil recycler
Oil sorbents	Cleanup of small spills	Hydrocarbons	~100 lbs/year	Hazardous	Recycled or disposed of by certified oil recycler
Mixed bed ion exchangers	Water treatment process	Metal and resins	Up to 80 exchangers/ year	Nonhazardous	Regenerated offsite by water treatment service company
Industrial wastewater/ offsite disposal	Oily water waste tanks	Combustion turbine washwater waste/ oily wastewater from equipment skids	1,000 gallons/ week	Hazardous/ nonhazardous	Wastewater trucked offsite by privately owned industrial wastewater processor
Batteries	Energy Storage System	Lithium ion	260 tons every 12 years	Hazardous	Returned to manufacturer for recycling

Note:

SCR = selective catalytic reduction

5.14.2 Environmental Analysis

5.14.2.1 Significance Criteria

A project would have a significant effect on the environment in terms of waste management if it meets the following criteria (California Environmental Quality Act Guidelines Section 15002[g], Appendix G):

- Be located on a site that is included on a list of hazardous materials sites (Cortese List) compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment
- Have solid waste disposal needs beyond the capacity of appropriate landfills to accommodate them

The risks or hazards posed by the transportation of hazardous materials, including hazardous wastes, are described and analyzed in Section 5.5, Hazardous Materials Handling.

5.14.2.2 Cortese List

An examination of the California Department of Toxic Substances Control (DTSC) Hazardous Waste and Substances Site List (Cortese List) compiled pursuant to Government Code Section 65962.5 shows there are no sites currently on the list within 1,000 feet of the SERC site (DTSC, 2016a). The closest listed site is the Buena Park Dry Cleaners site at 6522 Stanton Avenue in Buena Park, California, which is 4.7 miles from the proposed SERC site. Thus, it is highly unlikely that any impacts will result from Cortese-listed properties, nor will the SERC site present a significant hazard to the public or the environment.

5.14.2.3 Solid Waste Disposal

Nonhazardous waste (often referred to as municipal waste or garbage) will be recycled or deposited at a Class III landfill. Hazardous wastes will be delivered to a permitted offsite treatment, storage, and disposal (TSD) facility for treatment or recycling, or will be deposited at a permitted Class I landfill. The following subsections describe the waste disposal sites feasible for disposal of SERC wastes (see Table 5.14-3).

5.14.2.3.1 Nonhazardous Waste

Approximately 95 tons of nonhazardous waste will be generated during SERC construction, and nonhazardous waste will continue to be generated during its operation. Other nonhazardous wastes will be recycled to the extent possible, and what cannot be recycled will be disposed of at a permitted landfill as discussed below.

It is anticipated that all excavated soil will be used onsite for grading and leveling purposes. In the event that some excavated soil is not reused onsite, it will be classified for disposal on the basis of sampling completed once the soil is excavated and stockpiled. Soil determined to be nonhazardous could be suitable for reuse at a construction site or disposal at a regional disposal facility, depending on the chemical quality.

CR&R holds a franchise agreement with the City of Stanton for pickup and disposal of nonhazardous waste from commercial and industrial facilities located in Stanton. CR&R owns a recycling/transfer facility in Stanton and another in southern Orange County (San Juan Capistrano) where waste is processed for recycling prior to disposal. Waste collected from SERC will be taken to the Stanton transfer station. Waste materials that cannot be recycled will then be taken to Orange County Waste and Recycling's Prima Descheca Landfill in San Juan Capistrano for disposal (CR&R, 2016).

The Stanton Recycling and Transfer Facility operated by CR Transfer, Inc., is located at 11232 Knott Avenue in Stanton, California, on 11 acres of land owned by the City of Stanton. The facility has a permitted capacity of 3,600 tons per day with a maximum throughput of 1,800 tons per day. It processes mixed municipal, industrial, agricultural, and construction and demolition waste. Once in 2011 and once in 2015, the facility was cited by the Local Enforcement Agency (LEA), Orange County Environmental Health Division-Solid Waste, for failure to control odors emanating from the facility. This was identified as an area of concern (AOC) and was corrected using water misters. No enforcement actions have been initiated at the facility in the past 5 years (CalRecycle, 2016a).

The southern Orange County transfer station where CR&R may take waste picked up at SERC is the CR&R South County Material Recover Facility in San Juan Capistrano. It is located at 31641 Ortega Highway. This facility has a permitted capacity of 3,920 cubic yards and a permitted throughput of 980 tons per day. It can accept for processing construction/demolition waste, wood waste, food waste, and green materials. No enforcement actions have been taken at this facility in the past 5 years, and no violations or AOCs have been noted during LEA inspections (CalRecycle, 2016a).

The Prima Descheca Landfill is located at 32250 La Pata Avenue, San Juan Capistrano, California, about 45 minutes from the SERC site. It is an active solid waste landfill with a 698-acre disposal area. Prima Descheca Landfill accepts mixed municipal, construction and demolition, and industrial waste.

No enforcement actions have been identified at the facility, and only one AOC has been identified since 2010 (California Department of Resources Recycling and Recovery [CalRecycle], 2016a). On June 12, 2014, a routine inspection by the LEA inspector noted that daily cover had not been applied to an area that was being excavated for clean closure. The AOC was corrected and has not recurred, according to CalRecycle records of monthly inspections by the LEA (CalRecycle, 2016a). Prima Descheca Landfill is operated by Orange County Waste and Recycling of Santa Ana, California.

There are two additional landfills located in and owned by Orange County, about 40 minutes from SERC. The Olinda Alpha Sanitary Landfill is located at 1942 North Valencia Avenue in Brea, California. An active solid waste landfill operated by Orange County Waste and Recycling, Olinda Alpha accepts mixed municipal, construction and demolition debris, industrial, agricultural, tires, and wood waste. The disposal area currently covers 420 acres, and the entire facility comprises 565 acres. The facility began to experience elevated methane levels at the end of 2015 that carried over into 2016. In November and December 2015, the facility was cited by the LEA for failure to control landfill gas levels to below the regulatory limits for methane gas, and for failure to report exceedances to the LEA when identified during self-inspections. Violations of the landfill gas detection level continued in January and February 2016, and prompted filing of an enforcement action on February 4, 2016. The facility was brought into compliance by March 21, 2016, and the enforcement action was closed. There have been no subsequent AOCs or violations identified in recent inspections (CalRecycle, 2016a).

The Frank R. Bowerman Sanitary Landfill, operated by Orange County Waste and Recycling, is also located in Orange County at 11002 Bee Canyon Access Road in Irvine, California. This Class III facility accepts mixed municipal, industrial, and construction/demolition waste. It has 534 acres of solid waste disposal area with a remaining capacity of 205,000,000 cubic yards. In 2013, the facility experienced a couple of exceedances of landfill gas limits, one of which turned out to be caused by accidental disconnection of a gas well from the control system. The facility was cited by the LEA for those violations. Again, in May and June 2015, the landfill gas system displayed levels of methane gas exceeding regulatory standards. The issue has since been corrected by the installation of additional gas extraction wells. In addition, the LEA cited as an AOC in 2013 several hazardous wastes that were accepted for disposal in the landfill. The facility corrected the problem by retraining its load checkers to recognize and turn away hazardous waste contained within solid waste loads disposed of at the site. No enforcement actions have been initiated at the facility (CalRecycle, 2016a).

Table 5.14-3. Solid Waste Disposal Facilities in the Vicinity of the SERC

Landfill/ Transfer Station	Location	Class	Permitted Capacity* (cubic yards)	Remaining Capacity* (cubic yards)	Permitted Throughput* (tons per day)	Estimated Closure Date*	Violation of Minimum State Standards Noted*
Prima Descheca Sanitary Landfill	San Juan Capistrano, CA	III	172,900,000	87,384,799	4,000	12/31/2067	Yes (6/14)
Olinda Alpha Sanitary Landfill	Brea, CA	III	148,800,000	34,200,000	8,000	12/31/2021	Yes (11/15 – 3/16)
Frank R. Bowerman Sanitary Landfill	Irvine, CA	III	266,000,000	205,000,000	11,500	12/31/2053	Yes (4/13, 9/13, 5/15)
Stanton Recycling and Transfer Facility	Stanton, CA	NA	NA	NA	1,800	NA	Yes (8/11, 2/15)
CR&R South County Material Recover Facility	San Juan Capistrano, CA	NA	NA	NA	980	NA	None

* Based on CalRecycle SWIS Database (CalRecycle, 2016a)

According to CalRecycle, the Prima Descheca Landfill has a total capacity of more than 172 million cubic yards of refuse, and the estimated remaining capacity as of August 1, 2005, was more than 87 million cubic yards.

Adequate landfill capacity exists; therefore, disposal of nonhazardous waste will not be a constraint on SERC development. Impacts related to landfill capacity will be less than significant.

5.14.2.3.2 Hazardous Waste

Hazardous waste generated at the SERC facility will be stored at the facility for less than 90 days. The waste will then be transported to a TSD facility by a permitted hazardous waste transporter. These facilities vary considerably in what they can do with the hazardous waste they receive. Some can only store waste, some can treat the waste to recover usable products, and others can dispose of the waste by incineration, deep-well injection, or landfilling. Incineration and deep-well injection of these materials are not permitted in California.

According to DTSC, 145 facilities in California can accept wastes such as batteries, used oil, solvents, or other hazardous waste for treatment, recycling, or disposal (DTSC, 2016b). For ultimate disposal, California has two active hazardous waste (Class I) landfills: Waste Management's Kettleman Hills Landfill and Clean Harbors' Buttonwillow Landfill.

Waste Management Kettleman Hills Landfill. This landfill accepts Class I and II waste. The B-18 landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordnance. Currently, B-18 landfill Phases 1 and 2 are in operation with a permitted capacity of 10.7 million cubic yards, although most of that capacity has been expended. B-18 Phase 3 has been permitted with a capacity of approximately 5 million cubic yards and an anticipated closure date of 2028 (Henry, 2016). After B-18 closes, a new B-20 landfill will be opened on currently undeveloped land on the site (Waste Management, Inc., 2016). B-20 has a permitted capacity of 15 million cubic yards and a life expectancy of 24 years (Henry, 2012). As a whole, Kettleman Hills Landfill will be accepting waste for the next 28 years, until 2044. However, they are continuously searching for more expansion opportunities (Henry, 2012).

Clean Harbors Buttonwillow Landfill. This landfill is permitted at 13.1 million cubic yards and can accept 4,050 tons per day (Linton, 2012). As of January 2012, it was approximately 2 percent full (Linton, 2012). The landfill is permitted to accept waste until 2040 (CalRecycle, 2016a). Buttonwillow has been permitted to manage a wide range of hazardous wastes, including RCRA hazardous wastes, California hazardous waste, and nonhazardous waste for stabilization treatment, solidification, and landfill. The landfill can handle waste in bulk (solids and liquids) and in containers. Typical waste streams include nonhazardous soil, California hazardous soil, hazardous soil for direct landfill, hazardous waste for treatment of metals, plating waste, hazardous and nonhazardous liquid, and debris for microencapsulation (Clean Harbors, 2015).

Additional Facilities. In addition to hazardous waste landfills, there are numerous offsite commercial hazardous waste treatment and recycling facilities in California. Some facilities located in Southern California that may be used by SERC include Demenno/Kerdoon in Compton, Safety Kleen in Carson, Crosby & Overton in Long Beach, and Clean Harbors in Wilmington (DTSC, 2016b).

5.14.2.4 Waste Disposal Summary

The SERC will generate nonhazardous waste that will add to the total waste generated in Orange County and in California. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by SERC. It is estimated that SERC will generate approximately 95 tons of solid waste during construction and less than 10 tpy from operations. Considering that 4,702,533 tons of solid waste were landfilled in Orange County in 2015, SERC's contribution will likely represent less than 1 percent of the county's total waste generation (CalRecycle, 2016b). Therefore, the impact of the project on solid waste recycling and disposal capacity will not be significant.

Hazardous waste generated will consist of waste oil, filters, SCR and oxidation catalysts, and fluids used to clean piping. The waste oil, catalysts, and the deionization trailer unit will be recycled. Hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, the effect of SERC on hazardous waste recycling, treatment, and disposal capability will not be significant.

5.14.3 Cumulative Effects

A cumulative impact 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 (Public Resources Code Section 21083; Title 14 California Code of Regulations, Title 14, Sections 15064[h], 15065[c], 15130, and 15355).

The quantities of nonhazardous and hazardous wastes that would be generated during SERC construction and operation would be relatively low: an estimated 95 tons of solid waste during construction and less than 10 tpy during operation. Recycling efforts would be prioritized wherever practical, and capacity is available in a variety of treatment and disposal facilities. Sufficient landfill capacity is available in the project area. Therefore, the added waste quantities generated by SERC would not result in significant cumulative waste management impacts.

5.14.4 Mitigation and Waste Management Methods

The handling and management of waste generated by SERC will follow the hierarchical approach of source reduction, recycling, treatment, and disposal. The first priority will be to reduce the quantity of waste generated through pollution prevention methods (e.g., high-efficiency cleaning methods). The next level of waste management will involve reusing or recycling wastes (e.g., used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste nonhazardous (e.g., neutralization). Finally, offsite disposal will be used for residual wastes that cannot be reused, recycled, or treated.

The following subsections present methods for managing nonhazardous and hazardous waste generated by SERC.

5.14.4.1 Construction Phase

Handling requirements and mitigation measures for handling wastes during construction are described in the following subsections.

5.14.4.1.1 Nonhazardous Wastes

Nonhazardous waste generated during construction will be collected in onsite dumpsters and will be picked up periodically by CR&R. Waste will be taken to the CR Transfer and Material Recovery Facility in Stanton. Waste materials that cannot be recycled will be taken to Orange County Waste and Recycling's Prima Descheca Landfill in San Juan Capistrano for disposal (CR&R, 2016).

Wastewater generated during construction will include sanitary waste and could include excavation dewatering water, equipment washwater, and stormwater runoff. Sanitary waste will be collected in portable, self-contained toilets. Excavation dewatering water will be contained in portable tanks and sampled before offsite disposal. Equipment washwater will be contained at designated wash areas and will be disposed of offsite. Stormwater runoff will be managed in accordance with a stormwater management permit, which will be obtained before construction starts. Nonhazardous wastewater generation will be minimized by water conservation and reuse measures.

5.14.4.1.2 Hazardous Wastes

Most hazardous waste generated during construction will consist of excavation dewatering water, flushing and cleaning fluids, passivating fluids, and solvents. Some waste in the form of welding materials and dried paint also may be generated. Nonhazardous materials will be used whenever possible to minimize the quantity of hazardous waste generated. The construction contractor will be the generator of hazardous

construction waste and will be responsible for proper handling in compliance with all applicable federal, state, and local laws and regulations, including licensing, training of personnel, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. This waste will be moved daily to the contractor's 90-day hazardous waste storage area, located at the plant construction laydown area. The waste will be delivered to an authorized hazardous waste management facility before expiration of the 90-day storage limit.

5.14.4.2 Operation Phase

Handling requirements and mitigation measures for the handling of wastes during operation are described in the following subsections.

5.14.4.2.1 Nonhazardous Wastes

Wastewater from facility processes will be disposed of to the City of Stanton's sanitary sewer system.

Nonhazardous waste will be collected, processed for material recovery/recycling, and, if recycling is not feasible, deposited in a local landfill. Whenever practical, recycling will be implemented throughout the facility to minimize the quantity of nonhazardous waste that will be generated at the site.

5.14.4.2.2 Hazardous Wastes

To avoid the potential effects on human health and the environment from handling and disposing of hazardous wastes, procedures will be developed to ensure proper labeling, storage, packaging, recordkeeping, and disposal of all hazardous wastes. The following general procedures will be employed:

- SERC will be classified as a hazardous waste generator and will obtain a site-specific U.S. Environmental Protection Agency (EPA) identification number that will be used to manifest hazardous waste from the SERC facility. Hazardous waste from the SERC facility will be stored onsite for less than 90 days before offsite disposal, treatment, or recycling.
- Hazardous wastes will be accumulated at the generating facility according to the Title 22 California Code of Regulations requirements for satellite accumulation.
- Hazardous wastes will be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if outdoors and not roofed, will be sized for an additional volume for the rainfall associated with a 25-year, 24-hour storm event. If indoors, the containment shall be sized for an additional volume equivalent to 20 minutes of the design flow of any fire protection water. These areas will be inspected weekly.
- Hazardous wastes will be collected by a licensed hazardous waste hauler using a hazardous waste manifest. Wastes will be shipped only to authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared and submitted to DTSC. Copies of manifests, reports, waste analyses, and other documents will be kept onsite and will remain accessible for inspection for at least 3 years.
- Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization.
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever practical, and wastes will be recycled whenever practical.

Specifically, hazardous waste handling will include the following practices; handling of hazardous wastes in this way will minimize the quantity of waste deposited to landfills:

- Waste lubricating oil will be recovered and recycled by a waste oil recycling contractor.
- Spent oil filters and oily rags will be recycled.
- Spent SCR and oxidation catalysts will be recycled by the supplier, if possible, or disposed of in a Class I landfill.

5.14.4.3 Facility Closure

When SERC is closed, both nonhazardous and hazardous wastes must be handled properly. Closure can be temporary or permanent. Temporary closure would be for a period greater than the time required for normal maintenance, including overhaul or replacement of the combustion turbines. Causes for temporary closure could be a disruption in the supply of natural gas, flooding of the site, or damage to the plant from earthquake, fire, storm, or other natural causes. Permanent closure would consist of a cessation in operations with no intent to restart operations and could result from the age of the plant, damage to the plant beyond repair, economic conditions, or other unforeseen reasons. Handling of wastes for these two types of closure are discussed below.

5.14.4.3.1 Temporary Closure

For a temporary closure, where there is no release of hazardous materials, facility security will be maintained on a 24-hour basis, and the California Energy Commission Compliance Project Manager will be notified. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operations will be implemented. This plan will be prepared as described in Section 2.3. The plan will be developed to ensure conformance with all applicable LORS and the protection of public health and safety and the environment. The plan, depending on the expected duration of the shutdown, could include draining all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. All wastes will be disposed of according to applicable LORS, as discussed in Section 5.14.5.

If the temporary closure is in response to facility damage, or where there is a release or threatened release of hazardous waste or materials into the environment, procedures will be followed as set forth in the applicable risk management, spill control, or emergency action plans. Procedures include methods to control releases, notification of applicable authorities and the public, emergency response, and training for generating facility personnel in responding to and controlling releases of hazardous materials and hazardous waste. Once the immediate problem of hazardous waste and materials release is contained and cleaned up, temporary closure will proceed as described for a closure where there is no release of hazardous materials or waste.

5.14.4.3.2 Permanent Closure

The planned life of the generation facility is 30 years, although operation could be longer. When the facility is permanently closed, the handling of nonhazardous and hazardous waste and hazardous materials will be part of a general closure plan that will attempt to maximize the recycling of facility components. Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and shut down to protect public health and safety and the environment. All nonhazardous wastes will be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes will be disposed of according to applicable LORS. The site will be secured 24 hours per day during the SERC decommissioning activities.

5.14.4.3.3 Monitoring

Because the environmental impacts caused by construction and operation of the facility are expected to be minimal, extensive monitoring programs will not be required. Generated waste, both nonhazardous and hazardous, will be monitored during SERC construction and operation in accordance with the monitoring and reporting requirements mandated by the regulatory permits to be obtained for construction and operation.

5.14.5 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling at SERC will be governed by federal, state, and local laws. Applicable laws and regulations address proper waste handling, storage, and disposal practices to protect the environment from contamination and to protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. Table 5.14-4 presents a summary of the LORS applicable to waste handling at the SERC.

Table 5.14-4. LORS for Waste Management

Laws, Ordinances, Regulations, and Standards	Requirements/Applicability	Administering Agency	Application for Certification Section Explaining Conformance
Federal			
RCRA Subtitle D	Regulates design and operation of nonhazardous solid waste landfills. SERC solid waste will be collected and disposed of by a collection company in conformance with Subtitle D.	CalRecycle	Sections 5.14.5.1, 5.14.4.1, 5.14.4.2.1, 5.14.1.2.2
RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste. Hazardous waste will be handled by contractors in conformance with Subtitle C.	DTSC	Sections 5.14.5.1, 5.14.4.1, 5.14.4.2.2, 5.14.1.2.2
Clean Water Act	Controls discharge of wastewater to the surface waters of the United States.	RWQCB	Sections 5.14.5.1, 5.14.4.1.1, 5.14.4.2.1
State			
CIWMA	Controls solid waste collectors, recyclers, and depositors. SERC solid waste will be collected and disposed of by a collection company in conformance with CIWMA.	CalRecycle	Sections 5.14.5.2, 5.14.4.1, 5.14.4.2.1, 5.14.1.2.2
HWCL	Controls storage, treatment, and disposal of hazardous waste. Hazardous waste will be handled by contractors in conformance with the HWCL.	DTSC	Sections 5.14.5.2, 5.14.4.1, 5.14.4.2.2, 5.14.1.2.2
Porter-Cologne Water Quality Control Act	Controls discharge of wastewater to surface waters and ground waters of California.	RWQCB	Sections 5.14.5.2, 5.14.4.1.1, 5.14.4.2.1
California Fire Code	Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids. Wastes will be accumulated and stored in accordance with Fire Code requirements. Permits for storage containers will be obtained, as needed, from the OCFA.	OCFA	Sections 5.14.7, 5.14.5.4, 5.14.4.2.2
Assembly Bill 341 / State Bill 1018 – Mandatory Commercial Recycling	Requires commercial businesses generating 4 cubic yards per week or more of solid waste to adopt recycling practices.	CalRecycle	Sections 5.14.1.2, 5.14.2.3, 5.14.3, 5.14.4.1., 5.14.4.2, 5.14.4.3
Local			
Orange County Health Care Agency, Environmental Health Division, Hazardous Materials Program – CUPA various programs	Orange County Environmental Health Division's Hazardous Materials Program is the CUPA for Orange County that regulates and conducts inspections of businesses that handle hazardous materials, hazardous wastes, and/or have underground storage tanks. SERC will comply with Orange County's Hazardous Materials Program requirements concerning storage and handling of hazardous materials and wastes, and will also cooperate with the agency on resolution of any environmental issues at the site.	Orange County Health Care Agency Environmental Health Division	Sections 5.14.6, 5.14.7, 5.14.5.3, 5.14.4.2.2

Notes:

CIWMA= California Integrated Waste Management Act
CUPA = Certified Unified Program Agency
HWCL = Hazardous Waste Control Law
OCFA = Orange County Fire Authority
RWQCB = Regional Water Quality Control Board

5.14.5.1 Federal LORS

EPA regulates wastewater under the 1972 Amendments to the Federal Water Pollution Control Act, commonly known as the Clean Water Act. The federal statute that controls nonhazardous and hazardous waste is RCRA 42 United States Code 6901, et seq. RCRA's implementing regulations are found in Title 40 Code of Federal Regulations, Parts 260 et seq. Subtitle D assigns responsibility for the regulation of nonhazardous waste to the states; federal involvement is limited to establishing minimum criteria that prescribe the best practicable controls and monitoring requirements for solid waste disposal facilities. Subtitle C controls the generation, transportation, treatment, storage, and disposal of hazardous waste through a comprehensive "cradle-to-grave" system of hazardous waste management techniques and requirements. It applies to all states and to all hazardous waste generators (above certain levels of waste produced). SERC will conform to this law in its generation, storage, transport, and disposal of any hazardous waste generated at the facility. EPA has delegated its authority for implementing the law to the State of California.

5.14.5.2 State LORS

Wastewater is regulated by the State Water Quality Control Boards and RWQCBs under the Porter-Cologne Water Quality Control Act. Nonhazardous waste is regulated by CIWMA of 1989, found in Public Resources Code Sections 40000 et seq. This law provides an integrated statewide system of solid waste management by coordinating state and local efforts in source reduction, recycling, and land disposal safety. Counties are required to submit Integrated Waste Management Plans to the state. This law directly affects Orange County and the solid waste hauler and disposer that will collect SERC solid waste. It also affects SERC to the extent that hazardous wastes are not to be disposed of along with solid waste.

RCRA allows states to develop their own programs to regulate hazardous waste. The programs must be at least as stringent as RCRA. California has developed its own program in HWCL (Health and Safety Code Sections 25100 et seq.). Because California has elected to develop its own program, HWCL performs essentially the same regulatory functions as RCRA and is the law that will regulate hazardous waste at SERC. However, HWCL includes hazardous wastes not classified as hazardous waste under RCRA. Because hazardous wastes will be generated at the SERC facility during construction and operation, HWCL will require the Applicant to adhere to storage, recordkeeping, reporting, and training requirements for these wastes.

State law (Assembly Bill 841 / State Bill 1018) requires businesses that generate 4 cubic yards or more of commercial solid waste per week to institute a recycling program. The Applicant will avail itself of opportunities provided by the franchised waste hauler and disposal companies to divert as much waste as possible from landfills and, instead, will recycle the materials.

5.14.5.3 Local LORS

For solid nonhazardous waste, the laws are administered and enforced primarily by the Orange County Environmental Health Division and RWQCB. The Orange County Environmental Health Division, Hazardous Materials Program, will advise on the health effects of leaks and spills of hazardous materials and hazardous waste. Orange County Environmental Health Division will serve as CUPA for SERC.

Local agency requirements and LORS associated with the project will be addressed before the construction and operation of the facility, and the facility would conform to all local requirements. These include the need to file a Hazardous Material Business Emergency Plan (HMBEP) with the Orange County Environmental Health Division that will permit the storage of hazardous materials and wastes in accordance with state and local regulations. The HMBEP will be updated annually in accordance with applicable regulations.

For emergency spills, the closest fire station to SERC is Fire Station No. 46, located at 7871 Pacific Street in Stanton, California. The station is operated by the OCFA and is approximately 0.8 mile away via road.

Station No. 46 would provide the first response to a fire at the SERC site (CH2M HILL Engineers, Inc. [CH2M], 2016). If hazardous materials were involved in the incident, Station No. 79, located at 1320 East Warner Avenue in Santa Ana, would be the first hazmat response team onsite. Station No. 79 is approximately 12.6 miles away via road. If required, aid would also be provided by any of the neighboring cities with which the OCFA has an automatic aid agreement in place. Response times for an incident at SERC were unavailable from the OCFA.

All wastes generated by SERC will be managed in a manner consistent with applicable LORS.

5.14.5.4 Codes

The design, engineering, and construction of hazardous waste storage and handling systems will be in accordance with all applicable codes and standards, as follows:

- California Building Code
- California Fire Code
- Orange County Code

5.14.6 Agencies and Agency Contacts

Several agencies, including EPA at the federal level and DTSC and the California Environmental Protection Agency at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by the SERC project. The regulations, however, are administered and enforced primarily through the Orange County Environmental Health Division, which is the designated CUPA. The persons to contact for nonhazardous and hazardous waste management are listed in Table 5.14-5.

Table 5.14-5. Agency Contacts for Waste Management

Issue	Agency	Contact
Nonhazardous Waste		
Solid Waste and Recycling	Orange County Environmental Health Division, Solid Waste Management Section 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705	Kathryn Cross (for info on county landfills) (714) 433-6270
Hazardous Waste		
Hazardous Waste Compliance and Inspections	Orange County Health Care Agency, Environmental Health Division, Hazardous Materials Management Section (CUPA) 1241 East Dyer Road, Suite 120 Santa Ana, CA 92705	Darwin Chang (714) 433-6250

5.14.7 Permits and Permit Schedule

The temporary storage of hazardous wastes at SERC will be included in the HMBEP submitted to the Orange County Environmental Health Division Hazardous Materials Program as described in Section 5.5, Hazardous Materials. No additional permits are required.

5.14.8 References Cited or Consulted

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CH2M HILL Engineers, Inc. (CH2M). 2016. Telephone Conversation Record – Milia, Orange County Fire Authority. August 17.

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Waste Management, Inc. 2016. August 11. Available online: http://kettlemanhillslandfill.wm.com/facility-expansion/index.jsp.