

8.13 Waste Management

8.13.1 Introduction

The City of Vernon (City) proposes to develop a power plant (VPP) on a 13.7-acre property at the southeast corner of Fruitland and Boyle avenues. The VPP will be a 914-megawatt (MW) net (at 65 degrees Fahrenheit [°F] with duct burners and evaporative cooling)/943-MW (gross) combined-cycle generating facility configured using three natural-gas-fired combustion turbines and one steam turbine. Two transmission line options are being considered to connect the plant to Southern California Edison's (SCE) Laguna Bell Substation. Natural gas for the facility will be delivered via approximately 2,300 feet of new 24-inch pipeline that will connect to Southern California Gas Company's (SoCalGas) existing gas transmission line (Line 765). Potable water for drinking, safety showers, fire protection, service water, and sanitary uses will be served from the City's potable water system through two 10-inch pipelines connecting to the City's water mains. One would connect in Boyle Avenue and one in Fruitland Avenue. Recycled water for industrial purposes will be provided by the Central Basin Municipal Water District (CBMWD) through a nominal 16-inch carbon steel (or if using high density polyethylene [HDPE], a 20-inch) water line connecting to its recycled water line in Boyle Avenue, adjacent to the plant site. The blowdown will be sent to Sanitation Districts of Los Angeles County (LACSD) via a new 2,400-foot section of City sanitary sewer line.

This subsection evaluates the potential effects on human health and the environment from nonhazardous and hazardous waste generated at the proposed Vernon Power Plant (VPP). This section presents laws, ordinances, regulations, and standards (LORS) that apply to the VPP-generated waste, and describes the following: current condition of the proposed site, types and quantities of wastes expected to be generated by the project, potential waste disposal sites for nonhazardous and hazardous waste, methods to manage the generated waste and mitigate its impacts on the environment, cumulative impacts, waste monitoring, agencies that have jurisdiction over the generated waste and persons to contact in those agencies, permits required for waste generated and a schedule for obtaining those permits, and references used to prepare this subsection.

8.13.2 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling at VPP 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 protect facility workers and the surrounding community from exposure to nonhazardous and hazardous waste. The LORS applicable to waste handling at the VPP facility are summarized in Table 8.13-1.

TABLE 8.13-1
Laws, Ordinances, Regulations, and Standards Applicable to VPP Waste Management

| LORS | Purpose | Applicability (AFC Section Explaining Conformance) |
|---|--|---|
| Federal | | |
| Resource Conservation and Recovery Act (RCRA) Subtitle D | Regulates design and operation of solid waste landfills | VPP solid waste will be collected and disposed of by a collection company in conformance with Subtitle D (Subsections 8.13.2.1, 8.13.5.1, 8.13.6). |
| RCRA Subtitle C | Controls storage, treatment, and disposal of hazardous waste. | Hazardous waste will be handled by contractors in conformance with Subtitle C (Subsections 8.13.2.1, 8.13.5.2, and 8.13.6). |
| Clean Water Act (CWA) | Controls discharge of wastewater to the surface waters of the U.S. | VPP will discharge plant and sanitary wastewater to the LACSD's sanitary sewer (Subsections 8.13.2, 8.13.4.1.2, 8.13.4.2.2, 8.13.6.1, 8.13.6.2.1, and 8.14). |
| State | | |
| California Integrated Waste Management Act (CIWMA) | Controls solid waste collectors, recyclers, and depositors. | VPP solid waste will be collected and disposed of by a collection company in conformance with the CIWMA (Subsections 8.13.2.2, 8.13.4.1.1, 8.13.4.2.1, 8.13.6.1, 8.13.6.2.1, and 8.13.7). |
| CA Hazardous Waste Control Law (HWCL) | Controls storage, treatment, and disposal of hazardous waste. | Hazardous waste will be handled by contractors in conformance with the HWCL (Subsections 8.13.2.2, 8.13.5.2, 8.13.6.1, 8.13.6.2.1, and 8.13.7). |
| Porter-Cologne Water Quality Control Act | Controls discharge of wastewater to the surface and ground waters of California. | VPP will discharge industrial and sanitary wastewater to the City of Vernon's sanitary sewer (Subsections 8.13.4.1.2, 8.13.4.2.2, 8.13.6.1, and 8.13.6.2.1; and Subsection 8.14 also discussing surface runoff). |
| 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 City of Vernon Fire Department (Subsections 8.13.2.3, 8.13.2.4, 8.7, and 8.12). |
| Local | | |
| Vernon General Plan | Adopts the Los Angeles County Hazardous Waste Management Plan by reference | Identifies policies and programs for waste management in Los Angeles County. (Subsection 8.13.2.3) |
| City of Vernon Ordinance No. 961, Hazardous Materials Monitoring. | Adopted the HWCL by reference. In addition, requires entities that store or handle hazardous materials or wastes to apply for a Hazardous Materials Establishment Permit and submit a hazardous materials and wastes inventory and business plan information (HMBP). | Hazardous wastes that will be stored or handled will be included in the HMBP to be prepared in accordance with Subsections 8.13.2.3 and 8.12.8.4.1. |
| CAA | Clean Air Act | |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | |
| CUPA | Certified Unified Program Agency | |
| EHS | Extremely hazardous substance. | |
| HMBP | Hazardous Materials Business Plan | |
| LEPC | Local emergency planning committee. | |
| RMP | Risk Management Plan | |
| SARA | Superfund Amendments and Reauthorization Act | |
| SERC | State emergency response commission | |
| TPQ | Threshold Planning Quantity | |

8.13.2.1 Federal

Wastewater is regulated by the U.S. Environmental Protection Agency (USEPA) under the Clean Water Act (CWA). Plant industrial and sanitary wastewater will be discharged to the Sanitation Districts of Los Angeles County (LACSD) via the City's sanitary sewer system (see Subsection 8.14).

The federal statute that controls both nonhazardous and hazardous waste is the Resource Conservation and Recovery Act (RCRA), 42 USC 6901, et seq. RCRA's implementing regulations for hazardous waste are found at 40 CFR 260, et seq. and for nonhazardous waste at 40 CFR 239 et seq. Subtitle D of RCRA makes the regulation of nonhazardous waste the responsibility of 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 generators of hazardous waste (above certain levels of waste produced). VPP will comply with this law in its generation, storage, transport, and disposal of any hazardous waste generated at the facility. The USEPA has delegated its authority for implementing the law to the State of California.

8.13.2.2 State

Nonhazardous solid waste is regulated by the California Integrated Waste Management Act (CIWMA) of 1989, found in Public Resources Code (PRC) Section 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 Los Angeles County and the solid waste hauler and disposer that will collect VPP solid waste. It also affects VPP to the extent that hazardous wastes are not to be disposed of with solid waste.

Wastewater is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards under the Porter-Cologne Water Quality Control Act. Sanitary and plant wastewater will be discharged to the LACSD's sanitary sewer (see Subsection 8.14). Storm water will be managed as described in Subsection 8.14.

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 the California Hazardous Waste Control Law (HWCL) (Health and Safety Code Section 25100, et seq.). The HWCL performs essentially the same regulatory functions as RCRA and is the law that will regulate hazardous waste at VPP, since California has elected to develop its own program. However, the HWCL includes hazardous wastes that are not classified as hazardous waste under RCRA. Since hazardous wastes will be generated at the VPP facility during construction and operation, the HWCL will require the Applicant to adhere to storage, recordkeeping, reporting, and training requirements for these wastes.

8.13.2.3 Local

The City of Vernon Environmental Health Department will have the responsibility for administering and enforcing the CIWMA for solid, nonhazardous waste for VPP. The City of Vernon General Plan has adopted the Los Angeles County Waste Management Plan by reference. The Plan identifies policies and programs for waste management in Los Angeles County (City of Vernon, 2001).

For hazardous waste, local regulation consists primarily of the administration and enforcement of the HWCL. The City has adopted the HWCL by reference in City of Vernon Ordinance No. 961. The City of Vernon Certified Unified Program Agency (CUPA) is the local entity that will regulate hazardous waste at the VPP. The City of Vernon Environmental Health Department is the designated CUPA for Vernon. For emergency spills, the facility will employ a spill cleanup contractor. The City of Vernon has a formally-trained Hazardous Materials Team to provide spill cleanup. The Vernon Fire Department 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. The Vernon Fire Department station (with hazardous materials response capabilities) is Station No. 2, located at 4301 Santa Fe Avenue in Vernon. The nearest station to the proposed project site is City of Vernon Fire Station No. 1, located at 3375 Fruitland Avenue in Vernon. In addition, the City of Vernon Fire Department has mutual-aid agreements with the City of Santa Fe Springs (Area E partner), as well as both the City and County of Los Angeles Fire Department (Whitworth, 2005).

8.13.2.4 Codes

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

- The Uniform Fire Code
- The Uniform Building Code
- The Uniform Plumbing Code
- California Building Code
- California Fire Code

8.13.3 Environmental Condition of Site

Under a purchase agreement between the City of Vernon and the property owner, the property owner will be responsible to remove all existing buildings and structures and remediate the site to industrial standards before transferring control to the City. Prior to accepting title, the City will receive a Certificate of Closure from the City of Vernon Environmental Health Department (EHD) evidencing that the site has been appropriately remediated.

The City of Vernon EHD is the CUPA, authorized by the California Environmental Protection Agency to manage hazardous materials and hazardous waste regulatory programs in Vernon. EHD will determine when the VPP site has been sufficiently remediated by the current owner to warrant the cessation of remedial activities and the granting of environmental closure with no further action, thus allowing the site to be transferred to the City for the VPP.

For every remedial project in the City, EHD initially has the goal of removing all contaminants to non-detect levels. This goal may be revised taking into consideration the degree of environmental threat and site-specific conditions. EHD is provided latitude in meeting this cleanup goal because the water table under Vernon is very deep. It may be noted that the City was established as an industrial/commercial community in 1905 and permitted land uses continue to be non-residential with a few, if any, sensitive receptors. EHD uses the following hierarchical determinants to decide if a contaminated site has been sufficiently remediated to make a determination that active remedial measures can be closed. Progression down the list to a particular determinant is made only after it is confirmed that a higher degree of clean-up is no longer practically feasible.

1. Cleanup to non-detected levels of contaminants
2. Cleanup to background levels of contaminants
3. Reduction in contaminant levels to acceptable concentrations per the "Interim Site Assessment and Cleanup Guidebook," promulgated by the California Regional Water Quality Control Board, Los Angeles Region, Region 4
4. Cleanup to the USEPA, Region 9 Preliminary Remediation Goals (PRGs), in the event a contaminant is not addressed by the interim guidebook, or if the PRG for a contaminant is more stringent
5. Risk-based corrective action using risk assessments and fate-and-transport models

In the event that environmental closure cannot be accomplished by any of the determinants above, EHD can, under certain conditions, opt to allow contamination to stay in place at a site without closure. These conditions include: determination that the contamination is stable posing no immediate threat to the environment; long-term monitoring of the contamination; and placement of a notice describing the contamination on a contaminated property's deed.

Based on existing assessment data for the VPP site, EHD has determined that it would be appropriate to use the "Interim Site Assessment and Cleanup Guidebook" (Guidebook) to establish target cleanup goals. According to the Guidebook, acceptable cleanup goal concentrations at the site would be 500 ppm for the volatile (hydrocarbon chain range C4 to C12) component of Stoddard solvent and 1,000 ppm for the mid-range (hydrocarbon chain range C13 to C22) component of Stoddard solvent (RWQCB, 1996).

An environmental database search was performed by Environmental Data Resources Inc. (EDR) in June 2006. The EDR search identified sites within 0.5 mile of the VPP and linears with reported spills, leaks, and hazardous waste management activities. The EDR results for facilities near the proposed VPP site are briefly summarized below and the entire EDR search is provided in Appendix 8.13A.

At the proposed VPP site, 3200 Fruitland Avenue, no known leaks or spills were reported for the facility in the EDR report, but a recent Phase 2 Environmental Site Assessment conducted for the City of Vernon detected soil contamination by Stoddard solvent at the site, as discussed above. The EDR search reported only that a hazardous waste generator, Pechiney Cast Plate, was located at the site.

The EDR search also identified two facilities located near the intersection of Fruitland Avenue and South Boyle Avenue, South West Fleet at 3121 Fruitland and NI Industries Inc. at 5215 Boyle. According to the EDR report, South West Fleet was a small quantity generator with no recorded spills and NI Industries operated a number of storage tanks containing mostly motor vehicle fuel.

To the south of the site, near the Southern Pacific railroad tracks, a lumber company with a historic underground storage tank was identified at 5800 South Boyle Avenue. Three underground storage tanks located at Norman Fox and Company at 5511 South Boyle Avenue were within 0.25 mile of the site. This facility did not have any record of spills or leaks, according to the EDR report. In addition a foundry, Modern Pattern and Foundry Company, located at 5610 Alcoa Avenue near its intersection with the Southern Pacific Railroad line was reported to be on the CERCLIS list. No further details were reported.

A hazardous waste Treatment Storage and Disposal Facility (TSDF) owned by U.S. Filter Recovery Services (Norris Industries) is currently located across Boyle Avenue from the VPP site at 5375 South Boyle Avenue. The site contained 26 historic underground storage tanks, according to the EDR report. The site was once listed on the CERCLIS list, but no further action was determined to be needed and it was removed from CERCLIS in 1996.

To the east of the intersection of Fruitland and Boyle at 3211 Fruitland the EDR report identified the presence of Barksdale Controls Division, which had two underground fuel storage tanks. No known spills were associated with the facility according to the report. Further east of the proposed VPP site on Alcoa Avenue south of Fruitland, Western Metal Finishing was identified by the EDR report as once being listed on the Cortese List. The site, located at 5304 Alcoa, was subsequently removed from the Cortese list and has been recommended for no further action by DTSC, as noted in the EDR report. To the east of the intersection of Fruitland and Alcoa, at 3336 Fruitland, three historical underground fuel storage tanks were identified with the facility American Way Transport. This facility did not have any record of spills or leaks, according to the EDR report.

On Alcoa Avenue north of Fruitland, within 0.25 mile of the VPP site, Aluminum Corporation of America is reportedly a hazardous waste generator and tank operator. The facility is reported to have had 107 historic underground storage tanks at one time, and to currently have 11 permitted tanks containing motor vehicle fuel, waste oil, and Stoddard solvent. The facility also is reported to have a leaking underground storage tank. A solvent leak affecting soil only, not groundwater, was reported in the EDR report. The site is listed on the Cortese list.

8.13.4 Project Waste Generation

Wastewater, solid nonhazardous waste, and liquid and solid hazardous waste will be generated at the VPP site during facility construction and operation. Solid nonhazardous waste will also be generated during the construction of the electric transmission line, the natural gas supply line, the potable water supply line, the recycled water supply line, and the sewer line.

8.13.4.1 Construction Phase

During construction, the primary waste generated will be solid nonhazardous waste. However, some nonhazardous liquid waste and hazardous waste (solid and liquid) will also be generated. Most of the hazardous wastes will be generated at the plant site, but a minimal quantity of hazardous waste will be generated during construction of the electric transmission line, natural gas supply line, and wastewater discharge (sewer) line. The types of waste and their estimated quantities are described below and summarized in Table 8.13-2.

TABLE 8.13-2
Wastes Generated during the Construction Phase at the VPP Facility

| Waste | Origin | Composition | Estimated Quantity | Classification | Disposal |
|--|-------------------------------------|------------------------------|--|------------------------------------|---|
| Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, mineral wool insulation | | Normal refuse | 2,400 lbs/mo | Non-hazardous | Recycle and/or dispose of in a Class II or III landfill. |
| Scrap Metals | | Parts, containers | 1,000 lbs/mo | Non-hazardous | Recycle and/or dispose of in a Class III landfill. |
| Empty hazardous material containers | | Drums, containers, totes | 100 containers* | Hazardous and non-hazardous solids | Containers < 5 gallons will be disposed as normal refuse. Containers > 5 gallons will be returned to vendors for recycling or reconditioning. |
| Spent welding materials | | Solid | 20 lbs/mo | Hazardous | Disposal at a Class I landfill. |
| Waste oil filters | Construction equipment and vehicles | Solids | 100 lbs/mo | Non-hazardous | Recycle at a permitted TSDF. |
| Used and waste lube oil | CT and ST lube oil flushes | Hydrocarbons | 200 drums (life of project construction) | Hazardous | Recycle at a permitted TSDF. |
| Oily rags, oil sorbent excluding lube oil flushes | Cleanup of small spills | Hydrocarbons | Two 55-gallon drums/mo | Hazardous | Recycle or dispose at a permitted TSDF. |
| Solvents, paint, adhesives | Maintenance | | 180 lbs/mo | Hazardous | Recycle at a permitted TSDF. |
| Spent lead acid batteries | | Heavy metals | 10 batteries per year | Hazardous | Store no more than 10 batteries (up to 1-year)—recycle offsite. |
| Spent alkaline batteries | Equipment | Metals | 50 batteries per month | Universal Waste solids | Recycle or dispose offsite at an Universal Waste Destination Facility. |
| Steam turbine cleaning waste | Pre-boiler piping | Corrosive cleaning chemicals | 200 gallons before plant startup | Hazardous or non-hazardous liquid | Dispose at a permitted TSDF. |
| Waste oil | Equipment, vehicles | Hydrocarbons | 50 gal/mo | Non-RCRA Hazardous Liquid | Dispose at a permitted TSDF. |
| Sanitary waste | Portable toilet holding tanks | | 200 gal/day | Non-Hazardous Liquid | Remove by contracted sanitary service. |

TABLE 8.13-2
Wastes Generated during the Construction Phase at the VPP Facility

| Waste | Origin | Composition | Estimated Quantity | Classification | Disposal |
|---|--|-----------------|---|-----------------------------------|---|
| Stormwater | Rainfall | Water | 2.89 acre-feet (from 10-yr storm event) | Non-Hazardous Liquid | Discharge to stormwater drain (See Subsection 8.14). |
| Fluorescent, mercury vapor lamps | Lighting | Metals and PCBs | 500 lbs/yr | Universal Waste solids | Recycle or dispose offsite at a Universal Waste Destination Facility. |
| Passivating and chemical cleaning fluid waste | Pipe cleaning and flushing | | 200,000 to 400,000 gallons (life of project construction) | Hazardous or non-hazardous liquid | Sample and characterize—if clean, dispose of in sanitary sewer; otherwise, manage appropriately offsite. |
| Hydrotest water | Testing equipment and piping integrity | Water | 400,000 gallons (life of project construction) | Hazardous or non-hazardous liquid | Sample and characterize—if clean, dispose of in storm drain; otherwise, manage appropriately offsite (See Subsection 8.14). |

* Containers include < 5-gallon containers and 55-gallon drums or totes

8.13.4.1.1 Nonhazardous Solid Waste

Listed below are nonhazardous waste streams that could potentially be generated from construction of the generating facility, the electric transmission line, and other supply/disposal lines.

Paper, Wood, Glass, Plastics, and Concrete

Paper, wood, glass, and plastics will be generated from packing materials, waste lumber, insulation, and empty nonhazardous chemical containers. Approximately 2 tons of these wastes will be generated on a monthly basis during project construction. These wastes will be recycled where practical. Waste that cannot be recycled will be disposed of weekly in a Class III landfill. Onsite, the waste will be placed in dumpsters.

Metal

Metal will include steel from welding/cutting operations, packing materials, and empty nonhazardous chemical containers. Aluminum waste will be generated from packing materials and electrical wiring. Approximately 12 tons of waste metal (based on 1,000 lbs per month over 24 months) will be generated during construction. Waste will be recycled where practical and nonrecyclable waste will be deposited in a Class III landfill.

8.13.4.1.2 Nonhazardous Wastewater

Nonhazardous wastewater will be generated, including sanitary wastewater, equipment washwater, stormwater runoff, and wastewater from pressure testing the gas supply line. Sanitary waste will be collected in portable, self-contained toilets. Equipment washwater will be contained at specifically designated wash areas and disposed of offsite at a licensed facility accepting such wastes. Stormwater runoff will be managed in accordance with the contractor-developed stormwater pollution prevention plan (SWPPP) that will be approved by the appropriate agencies prior to the start of construction. (See Appendix 8.14B for a draft SWPPP).

The gas supply pipeline hydrostatic test water will be filtered to collect any sediment and welding fragments. The water will be collected, tested, and disposed of by the pipeline contractor, as described in Section 6, Natural Gas Supply.

8.13.4.1.3 Hazardous Waste

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluid (to prepare pipes for use), and solvents. Some hazardous solid waste, such as welding materials and dried paint, may also be generated.

Flushing and cleaning waste liquid will be generated when pipes and boilers are cleaned and flushed. Passivating fluid waste is generated when high temperature pipes are treated with either a phosphate or nitrate solution. The volume of flushing and cleaning and passivating liquid 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.

The City or the construction contractor will be considered the generator of hazardous construction waste and will be responsible for proper handling of hazardous waste in compliance with all applicable federal, state, and local laws and regulations, including licensing, personnel training, accumulation limits and times, and reporting and recordkeeping. The hazardous waste will be collected in satellite accumulation containers near the points of generation. It will be moved daily to the contractor's 90-day hazardous waste storage area, located at the site construction laydown area. The waste will be removed from the site by a certified hazardous waste collection company and delivered to an authorized hazardous waste management facility, prior to expiration of the 90-day storage limit.

8.13.4.2 Operation Phase

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

8.13.4.2.1 Nonhazardous Solid Waste

The majority of nonhazardous waste will be wastewater discharged to the sewer. The VPP facility will also produce maintenance and generating facility wastes, typical of power generation operations. These will include rags, turbine air filters, broken and rusted metal and machine parts, defective or broken electrical materials, empty containers, the typical refuse generated by workers and small office operations, and other miscellaneous solid wastes. The quantity generated is estimated to be about 50 tons per year. Large metal parts will be recycled.

8.13.4.2.2 Nonhazardous Wastewater

Water balance diagrams, provided in Figures 2.2-6a through 2.2-6b, illustrate the expected wastewater streams and flow rates for the VPP generating facility. The wastewater collection system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities and discharge the wastewater to the City's sanitary sewer, which will convey the wastewater to LACSD's wastewater treatment facilities. New sewer line connections will be installed to connect the VPP site to the existing LACSD sewer line.

Plant Drains-Oil/Water Separator

General facility drainage will consist of area washdown, sample drains, equipment leakage, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and routed to the facility wastewater collection system. Drains that could contain oil or grease will first be routed through two oil/water separators. Water from the plant wastewater collection system will be recycled to the cooling tower basin. Wastewater from combustion turbine water washes will be collected in a holding tank. If cleaning chemicals were not used during the water wash procedure, the wastewater will be discharged to the oil/water separators. Wastewater containing cleaning chemicals will be trucked offsite for disposal at an approved wastewater disposal facility

8.13.4.2.3 Hazardous Waste

Hazardous waste generated will include waste lubricating oil, used oil filters, spent SCR and oxidation catalysts, and chemical cleaning wastes. The catalyst units will contain heavy metals that are considered hazardous. Chemical cleaning wastes will be generated from the periodic cleaning of the HRSGs and associated piping. They will consist of alkaline and acidic cleaning solutions used during chemical cleaning of the HRSG boiler system turbine wash and HRSG fireside washwaters. These wastes generally 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. After testing, water collected from the chemical storage areas will be directed to the cooling tower basin if clean or, if not, it will be containerized and shipped offsite for disposal. The quantity of this effluent is expected to be minimal.

Hazardous wastes that will be generated at the facility are summarized in Table 8.13-3.

TABLE 8.13-3
Hazardous Wastes Generated at the VPP Facility During Operations

| Waste | Origin | Composition | Estimated Quantity | Classification | Disposal |
|---------------------------|---|--|-----------------------------------|----------------|---|
| Lubricating oil | Small leaks and spills from the gas turbine lubricating oil system and routine maintenance of the gas turbine | Hydrocarbons | 550 gallons per maintenance event | Hazardous | Recycled by certified oil recycler |
| Lubricating oil filters | Gas turbine lubricating oil system | Paper, metal, and hydrocarbons | 1,000 lb/yr | Hazardous | Recycled by certified oil recycler |
| Laboratory analysis waste | Water treatment | Sulfuric acid | 500 gals/yr | Hazardous | Recycled by certified recycler |
| SCR catalyst units | SCR system (Warranty is 3 years-use; tends to be 3 to 5 years) | Metal and heavy metals, including vanadium | 60 to 70 tons every 3 to 5 yrs | Hazardous | Recycled by SCR manufacturer or disposed of in Class I landfill |

TABLE 8.13-3
Hazardous Wastes Generated at the VPP Facility During Operations

| Waste | Origin | Composition | Estimated Quantity | Classification | Disposal |
|-----------------------------|---|--|------------------------------|-------------------------------------|--|
| CO catalyst units | HRSG (Use tends to be 3 to 5 years) | Metal and heavy metals, including vanadium | 6 to 7 tons every 3 to 5 yrs | Hazardous | Recycled by manufacturer |
| Oily rags | Maintenance, wipe down of equipment, etc. | Hydrocarbons, cloth | 300 lb/yr (~800 rags/yr) | Hazardous | Recycled by certified oil recycler |
| Oil sorbents | Cleanup of small spills | Hydrocarbons | 200 lb/yr | Hazardous | Recycled or disposed of by certified oil recycler |
| Cooling tower sludge | Deposited in cooling tower basin by cooling water | Dirt from air | 200 lb/yr | Could be hazardous, but usually not | Class II landfill if nonhazardous; Class I if hazardous |
| Chemical feed area drainage | Spillage, tank overflow, area washdown water | Water with water treatment chemicals | Minimal | May be hazardous if corrosive | Discharged to cooling tower basin if nonhazardous; shipped offsite for disposal if hazardous |

8.13.5 Waste Disposal Sites

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste [MSW], or garbage) will be recycled or deposited in a Class III landfill. Hazardous wastes, both solid and liquid, will be delivered to a permitted offsite Treatment, Storage, and Disposal (TSD) facility for treatment or recycling or deposited in a permitted Class I landfill. The following subsections describe the waste disposal sites feasible for disposal of VPP wastes.

8.13.5.1 Nonhazardous Waste

Several solid waste non-exclusive franchise services provide garbage collection services for the City of Vernon and for commercial and industrial facilities in the project site area. The primary disposal facility used by these services is the Puente Hills Landfill in Los Angeles County. The Puente Hills Landfill has adequate capacity to handle and dispose of solid waste generated by the VPP facility, as shown in Table 8.13-4. Any of the other three landfills included in Table 8.13-4 are likely alternatives to the Puente Hills Landfill.

According to the CIWMB, Puente Hills Landfill has a total capacity of 106.4 million cubic yards of refuse and the remaining capacity as of October 2004 was 62.3 million cubic yards. The CIWMB indicates that the active Solid Waste Facility Permit expires in 2013. According to the CIWMB, there are no open enforcement actions against Puente Hills Landfill and no violations have been noted for this facility during monthly inspections in the 2006 calendar year (CIWMB, 2006).

TABLE 8.13-4
Solid Waste Disposal Facilities in the Vicinity of the VPP Project

| Landfill/MRF/ Transfer Station | Location | Class | Permitted Capacity ^a (cubic yards) | Remaining Capacity ^a (cubic yards) | Permitted Throughput ^a (tons per day) | Estimated Closure Date ^a | Enforcement Actions Taken ^a |
|--|----------------|-------|---|---|--|---|--|
| Puente Hills Landfill ^b | Whittier, CA | III | 106,400,000 | 62,291,000 | 13,200 | 10/31/2013 | No |
| Olinda Alpha Sanitary Landfill | Brea, CA | III | 74,900,000 | 38,578,383 | 8,000 | 12/31/2013 | No |
| Sunshine Canyon Landfill County Extension | Sylmar, CA | III | 23,720,000 | 16,000,000 | 6,600 | 2/1/2008 | No |
| Bradley Landfill West and West Extension | Sun Valley, CA | III | 38,600,000 | 4,725,968 | 10,000 | 6/1/2007 | Yes, Compliance in 9/2005 |

^a Based on CIWMB Solid Waste Information System Database (SWIS) (CIWMB, 2006).

^b Puente Hills is the primary landfill used for the City of Vernon, although the other landfills listed are also used by the various waste management services for the city.

8.13.5.2 Hazardous Waste

Hazardous waste generated at VPP will be stored at that facility for less than 90 days. The waste will then be transported by a licensed hazardous waste transporter to a TSD facility. 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 are not permitted in California.)

According to the California Department of Toxic Substances Control (DTSC), there are 64 facilities in California that can accept hazardous waste for treatment and recycling (DTSC, 2005). For ultimate disposal, California has the three hazardous waste (Class I) landfills described below. The closest commercial hazardous waste disposal facility is the Clean Harbors' Buttonwillow Landfill in Kern County.

8.13.5.2.1 Clean Harbors' Buttonwillow Landfill in Kern County

This landfill is permitted at 14.3 million cubic yards (CIWMB, 2006) and has approximately 9.2 million cubic yards of remaining space as of February 2006 (Bouie, 2006). At the current deposit rate, the landfill is permitted to accept waste until 2040 (CIWMB, 2006). Buttonwillow has been permitted to accept all hazardous wastes except flammables, PCBs with a concentration greater than 50 ppm, medical waste, explosives, and radioactive waste with radioactivity greater than 20,000 picocuries (Buoni, 2005).

8.13.5.2.2 Clean Harbors' Westmorland Landfill in Imperial County

This facility is not currently open and accepting waste because the Buttonwillow facility can accommodate the current hazardous waste generation rate. The facility is, however, available in reserve and could be reopened if necessary. Even if opened, the landfill's conditional use permit (CUP) prohibits the acceptance of some types of waste, including radioactive (except geothermal) waste, flammables, biological hazard waste (medical), PCB, dioxins, air- and water-reactive wastes, and strong oxidizers.

8.13.5.2.3 Waste Management's Kettleman Hills Landfill in Kings County

This facility accepts Class I, II (designated), and III waste. The Class I landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordinance (UXO); this landfill has permitted capacity of 10.7 million cubic yards with a remaining capacity of 3.5 million cubic yards as of November 2005 (Yarbrough, 2005). According to Chemical Waste Management, Inc., the projected closure date for the landfill is 2036 (Yarbrough, 2006).

8.13.5.2.4 Additional Commercial Hazardous Waste Treatment and Recycling Facilities

In addition to hazardous waste landfills, there are numerous offsite commercial liquid hazardous waste treatment and recycling facilities in California. Some of the closest facilities include US Filter Recovery Services and Exide Inc. in City of Vernon, Safety Kleen Corp., Clean Harbors and Pacific Resource Recovery Services in Los Angeles, Rho-Chem Corp. in Inglewood, Phibro-Tech, Inc. in Santa Fe Springs, and Crosby and Overton in Long Beach (DTSC, 2005).

8.13.6 Waste Management Methods and Mitigation

The handling and management of waste generated by VPP 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 the reuse or recycle of wastes (e.g., used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste non-hazardous (e.g., neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled, or treated. The following subsections present methods for managing both nonhazardous and hazardous waste generated by VPP.

8.13.6.1 Construction Phase

Nonhazardous solid waste generated during construction will be collected in onsite dumpsters and picked up periodically by one or more of the City of Vernon franchised disposal services. The waste will then be taken to the Puente Hills Landfill or another local landfill. Recyclable materials can be segregated and transported by construction contractors or other private haulers to an area recycling facility.

Wastewater generated during construction will include sanitary waste and could include equipment washwater and stormwater runoff. Sanitary waste will be collected in portable, self-contained toilets. Equipment washwater will be contained at designated wash areas and will be disposed of offsite at an approved wastewater disposal facility. Stormwater runoff will be managed in accordance with a stormwater management permit, which will be obtained prior to the start of construction. The generation of nonhazardous wastewater will be minimized through water conservation and reuse measures.

Most of the hazardous waste generated during construction will consist of liquid waste, such as flushing and cleaning fluids, passivating fluids, and solvents. Some solid waste in the form of welding materials and dried paint may also 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, prior to the expiration of the 90-day storage limit.

8.13.6.2 Operation Phase

The primary waste generated during the operation phase will be nonhazardous wastewater. Other nonhazardous solid waste will also be generated, as well as varying quantities of liquid and solid hazardous waste. Handling and mitigation of these wastes is described in the following subsections.

8.13.6.2.1 Nonhazardous Wastes

Wastewater from facility sinks and toilets will be discharged to the sanitary sewer. Nonhazardous plant wastewater will also be discharged to the sanitary sewer.

Nonhazardous solid waste or refuse will be collected and deposited in a local landfill. Whenever possible, recycling will be implemented throughout the facility to minimize the quantity of nonhazardous waste that must be disposed of in a landfill.

8.13.6.2.2 Hazardous Wastes

To avoid the potential effects on human health and the environment from the handling and disposal 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:

- VPP will be classified as a hazardous waste generator. Prior to facility startup, application will be made to CalEPA for a USEPA identification number.
- Hazardous wastes will not be stored onsite for more than 90 days and will be accumulated according to CCR Title 22 requirements.
- 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 not roofed, sized for an additional 20 percent to allow for rainfall. These areas will be inspected daily.
- Hazardous wastes will be collected by a licensed hazardous waste hauler, using a hazardous waste manifest. Wastes will only be shipped to authorized hazardous waste management facilities. Biannual hazardous waste generator reports will be prepared and submitted to the Department of Toxic Substances Control (DTSC). Copies of manifests, reports, waste analyses, and other documents will be kept onsite and 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 possible, and wastes will be recycled whenever possible.

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.
- Chemical cleaning wastes will consist of alkaline and acid cleaning solutions used during pre-operational chemical cleaning of the boiler system of the HRSGs, acid cleaning solutions used for chemical cleaning of the HRSG after the unit is put into service, and turbine wash and HRSG fireside washwaters. These wastes, which are subject to high metal concentrations, will be stored temporarily onsite in portable tanks and disposed of offsite, in accordance with applicable regulatory requirements. Disposal may consist of offsite treatment, recovery of metals, and/or landfilling.

8.13.6.3 Facility Closure

When VPP is closed at the end of its operating life cycle, both nonhazardous and hazardous wastes must be handled properly. Closure can be temporary or permanent. Temporary closure would be for a period of time 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 be due to 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.

8.13.6.3.1 Temporary Closure

For a temporary closure, where there is no release of hazardous materials, facility security will be deployed on a 24-hour basis, and the CEC 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 prior to VPP startup. 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 Subsection 8.13.2.

Where 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 a Hazardous Materials Business Plan (HMBP) or Risk Management Plan (RMP). The HMBP and RMP are described in Subsection 8.12.8.4. 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.

8.13.6.3.2 Permanent Closure

The planned life of the generation facility is 30 years, though operation could be longer. When the facility is permanently closed, the handling of nonhazardous materials will be part of a general closure plan that will attempt to maximize the recycling of all facility components (see Section 4.0). The facility will also be required to comply with City of Vernon Ordinance 961, hazardous materials and waste closure requirements. The following are appropriate closure activities. Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment will be drained of chemicals 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 VPP decommissioning activities.

8.13.7 Cumulative Impacts

The VPP facility will generate nonhazardous solid waste that will add to the total waste generated in Los Angeles County and in California. Almost all the nonhazardous waste will be wastewater that will be disposed of through the LACSD. However, it is estimated that VPP will generate approximately 600 tons of solid waste during construction and about 80 tons a year from operations (including approximately 30 tons of hazardous waste). However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by VPP. Therefore, the impact of the project on solid waste recycling and disposal capacity is not significant.

The VPP will be included in the City of Vernon Solid Waste Recycling Program. The City's contract with a solid waste hauler includes specifications for the provision of recycling containers, collection of recyclables on a routine basis, and delivery of recyclables to recycling facilities. The City of Vernon currently complies with the 50% solid waste diversion/recycling goal established by AB 939.

Hazardous waste generated during operation of VPP will consist of waste oil, filters, SCR and oxidation catalysts, and fluids used to clean the HRSGs and piping. The waste oil and catalysts will be recycled or disposed of off site. Cleaning and flushing fluids will be removed and disposed of offsite. Cleaning and flushing will occur only periodically. Hazardous waste treatment and disposal capacity in California is more than adequate. Therefore, the effect of VPP on hazardous waste recycling, treatment, and disposal capability is not significant.

8.13.8 Monitoring

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

8.13.9 Involved Agencies

Several agencies, including USEPA at the federal level and the DTSC of Cal EPA at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by the VPP project. The waste laws, however, are administered and enforced primarily through the City of Vernon Environmental Health Department, which is the designated CUPA. The persons to contact for nonhazardous and hazardous waste management are listed in Table 8.13-5.

TABLE 8.13-5
Agency Contacts for City of Vernon Project Waste Management

| Topic | Agency | Address | Contact | Telephone |
|--|--|--|--|----------------------------|
| Nonhazardous Waste | | | | |
| Solid Waste and Recycling | City of Vernon Environmental Health Department | 4305 Santa Fe Avenue Vernon, CA 90058 | Lewis Pozzebon, Director | (323) 583-8811 Ext. 229 |
| Hazardous Waste | | | | |
| Hazardous Waste Compliance and Inspections | City of Vernon Environmental Health Department | 4305 Santa Fe Avenue Vernon, CA 90058 | Leonard Grossberg, Sr. Environmental Specialist | (323) 583-8811 Ext. 231 |

8.13.10 Permits Required and Permit Schedule.

The storage of hazardous wastes at the City of Vernon Project would be included in the HMBP submitted to the City of Vernon Environmental Health Department as described in Subsection 8.12, Hazardous Materials. In addition, the Environmental Health Department requires the permits listed in Table 8.13-6.

TABLE 8.13-6
Permits Required and Permit Schedule for City of Vernon Project Waste Management

| Permit | Applicability | Schedule for Permit |
|--|--|---|
| Hazardous Materials Establishment Permit | City of Vernon Ordinance No. 961 requires that businesses obtain permits to establish, operate, or maintain a hazardous materials establishment (i.e., room, building, etc.) | Before storing regulated hazardous materials or wastes at the site. |

8.13.11 References

- Bouie, M. 2006. Clean Harbor's Buttonwillow Landfill. Personal communication. February 16.
- City of Vernon, 2001. Vernon General Plan, Safety Element. 1989. Revised February 21, 2001.
- CIWMB, 2006. "Solid Waste Information System (SWIS) Database." May.
- DTSC. 2005. Department of Toxic Substance Control (DTSC). "California Commercial Offsite Hazardous Waste Management Facilities." November 8.

Pozzebon, L M. 2005. City of Vernon, Environmental Health Department. Personal communication. August 26.

RWQCB, 1996. California Regional Water Quality Control Board - Los Angeles Region, Region 4. "Interim Site Assessment and Cleanup Guidebook." May.

Whitworth, M. 2005. Comments provided in review of Subsection 8.12, Hazardous Materials. September 27.

Yarbrough, T. 2005. Waste Management Inc., Kettleman Hills Facility. Personal communication between Terri Yarbrough, Waste Management Kettleman Hills and Sarah Madams, CH2M HILL. November 16.

Yarbrough, T. 2006. Waste Management Inc., Kettleman Hills Facility. Personal communication between Terry Yarbrough, Waste Management Kettleman Hills and James Curtin, CH2M HILL. February 14.