8.14 Waste Management

This section evaluates the potential effects on human health and the environment from nonhazardous and hazardous waste generated at the Humboldt Bay Repowering Project (HBRP). Section 8.14.1 describes project site investigations and the waste and waste streams that would be generated by the project. Section 8.14.2 describes the project's environmental consequences, in terms of waste and waste disposal sites. Section 8.14.3 discusses potential cumulative impacts. Section 8.14.4 describes mitigation measures. Section 8.14.5 presents laws, ordinances, regulations, and standards (LORS) that apply to the generated waste. Section 8.14.6 describes agencies that have jurisdiction over the generated waste and specifies who to contact in those agencies. Section 8.14.7 describes permits required for generated waste and a schedule for obtaining those permits, and Section 8.14.8 provides the references used to prepare this section.

8.14.1 Affected Environment

This section discusses the condition of the HBRP project site, in terms of the potential need to remove or otherwise treat contaminated soil or groundwater at the site, and then discusses the various non-hazardous and hazardous waste streams for HBRP construction and operation.

8.14.1.1 Site Investigations

The HBRP construction and operation will take place adjacent to and within the same owner-controlled area as the inactive nuclear power plant, Humboldt Bay Power Plant Unit 3. Unit 3 has been out of operation since 1976, and Pacific Gas and Electric Company (PG&E) currently maintains it under a Nuclear Regulatory Commission SAFSTOR license, which allows for safe storage of nuclear materials pending final decommissioning and demolition. Future activities that are planned for Unit 3 include construction of the Independent Spent Fuel Storage Installation (ISFSI), also known as the dry cask storage system, and the full decommissioning and demolition of Unit 3 and ancillary facilities. The ISFSI is an underground concrete vault designed to safely store Unit 3's spent fuel rods on the Humboldt Bay Power Plant property, in perpetuity if necessary. The ISFSI will be constructed during 2007 at a location north of Units 1 and 2, and the fuel rods will be transferred to the storage vault in early 2008. Once the spent fuel rods are safely stored in the ISFSI vault, final decommissioning and demolition of Unit 3 can begin. This process may take as long as 10 to 12 years.

Neither the ISFSI construction and maintenance, nor the decommissioning and demolition of Unit 3 are part of the HBRP project. Unit 3 decommissioning activities, however, will take place adjacent to the HBRP site.

Based on previous studies and PG&E's on-going radiological dosimetric monitoring, the HBRP project area currently meets the Nuclear Regulatory Commission's (NRC's) standards for public use. In addition, the entire HBRP project site (portions of the Humboldt Bay Power Plant parcel that will be dedicated to the HBRP) will undergo detailed radiological contamination studies before construction begins (discussed below). These studies will be conducted under the *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM) methodology and in accordance with NRC guidelines. If it was necessary to remove

contaminated soil as a remedial measure, this would be completed before HBRP construction begins. This remedial action, if necessary, would be done under the jurisdiction of the NRC and under the auspices of the Unit 3 decommissioning program.

8.14.1.1.1 Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) of the HBRP site was conducted by E2 Consulting Engineers, Inc. (E2) in July of 2006 (E2, 2006) (see Appendix 8.14A). The Phase I ESA reviewed and summarized available information on recognized environmental conditions (RECs) for various sites within the HBRP property footprint. Adjacent properties were not evaluated as part of the Phase I ESA because they were being addressed separately (e.g., the Humboldt Bay Power Plant radiological evaluations) or because the land consisted of wetlands. The Phase I ESA also assessed cleanup data from previous reports for a number of the sites on the HBRP property. The sites assessed in this document included three separate areas that are designated as: (1) A, the HBRP plant site and construction laydown areas; (2) B, the offsite temporary parking area; and (3) C, the offsite short-term delivery parking area. Area A comprises the majority of the HBRP footprint and contains fourteen specific sites that were assessed, as follows:

1. Former Drum Storage Area
2. Mobile Gas Turbine Units
3. Fuel Line Leak
4. Oil Water Separator
5. Former Sandblast and Paint Area (1)
6. Former Sandblast and Paint Area (2)
7. Asbestos Burial Area
8. Switchyard
9. Surface Impoundments
10. Former Fire Training Area and Soil/Seaweed Fill Area
11. North Fill Area
12. Power Pole Area Behind the New Sandblast Building
13. Area Southeast of Unit 3
14. Hazardous Waste Storage Building

Four of the above-listed sites; Oil Water Separators; Asbestos Burial Area; and the Surface Impoundments) all had RCRA Clean Closure notices. The Fuel Line Leak had a Department of Toxic Substance Control (DTSC) Remedial Action Approval status. The Mobile Gas Turbine Units and the Area Southeast of the Intake Channel did not have any historical information or activities that would indicate a possible recognized environmental condition.

Eight of the above-listed sites had information that indicated that a potential recognized environmental hazard could exist or that available information was not sufficient to rule out this possibility. For these sites, the Phase I ESA recommended additional (Phase II) testing or that engineering controls be considered in future reuse or construction planning. PG&E will prepare a Phase II ESA in accordance with the recommendations of the Phase I ESA. The sites with potential recognized environmental conditions include the Former Drum Storage Area; Former Fire Training Area and Soil/Seaweed Fill Area; the Former Sandblast and Paint Areas (1 and 2); areas downgradient of the Switchyard; areas downgradient of the

North Fill Area (within the HBRP construction zone); the Power Pole Behind the New Sandblast Building; and Areas Southeast of Unit 3.

The exact location of the Former Drum Storage Area was not ascertained, so it would be necessary to have a contingency within the construction management plan for encountering contaminated soils when excavating in the area southeast of the Oil Water Separators near the fireside waste bin. At the other locations, it was concluded that there is a potential for soil and groundwater contamination which could include various organic or metal constituents (E2, 2006).

Area B is a separate parcel of land located west of the Humboldt Bay Power Plant between adjacent to King Salmon Avenue. This area had been previously used as a parking area for Humboldt Power Plant construction and the adjacent area was used as a picnic ground by the Humboldt Bay Power Plant staff but the restroom and picnic table facilities were removed before the time of the July 12, 2006 site visit. This area remains undeveloped from its prior recreational use. The parking area contains light stands and gravel.

Similarly, Area C is separate from the Area A footprint and is located on the north side of the intake channel, between the channel and King Salmon Avenue. Area C was surrounded by a fence and was being used for parking cars and boats during the July 12, 2006 site visit. No RECs were noted for either Area B or C (E2, 2006).

8.14.1.1.2 Historical Site Assessment

A Historical Site Assessment (HSA) was completed for the adjacent Humboldt Bay Power Plant in accordance with guidelines contained in the MARSSIM (formerly known as the Nuclear Regulatory Guide-1757) (ESI, 2006) (see Appendix 8.14-B). The adjacent Humboldt Bay Power Plant property currently maintains four operational electrical generating units that run on fossil fuel and one nuclear unit (Unit 3) that has been in cold shutdown and safe storage (SAFSTOR) status since 1976. In preparation for full decommissioning, the HSA was prepared to satisfy the first step in the MARSSIM process, which is required for ultimately terminating the Nuclear Regulatory Commission's license at the Humboldt Bay Power Plant site. The purpose of the HSA is to document a comprehensive investigation that identifies, collects, organizes, and evaluates historical information relevant to the Humboldt Bay Power Plant site (ESI, 2006). Appendix C of the HSA provides a table with the description and individual designation (i.e., MARSSIM Class) of all structures and areas investigated as part of this document.

Data from the HSA investigation suggest that structures and land areas in the Unit 3 Nuclear Reactor's Radiation Controlled Area (RCA) will require remediation. These areas are classified as Class 1 according to the MARSSIM. Additionally, there are also structures and land located near the Unit 3 RCA that may require remediation. These areas are designated as Class 2 according to the MARSSIM. The migration of surface and subsurface contamination appeared to be limited to areas very near to the Unit 3, but further investigated were required to complete this assessment (ESI, 2006).

The HSA concluded that the areas associated with the new plant (HBRP) show little remaining effect from operations at Humboldt Bay Power Plant and that the available data suggest that these areas will not require remediation. These areas are designated as Class 3 according to the MARSSIM. Because it was determined that radiological contamination had

been detected in past surveys in these areas, it was suggested that residual contamination could exist on the roofs of building where newer roofing material has been added. This condition should be investigated during any future construction activities associated with those structures (ESI, 2006).

The HSA also did note the presence of a Solid Waste Management Unit (SWMU) of buried chemical waste and heavy metals located north of Unit 2. These buried materials were used to clean out items from Unit 2 and are buried in a marked and managed location (ECI, 2006).

8.14.1.2 Project Waste Generation

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

8.14.1.2.1 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. The types of waste and their estimated quantities are described below.

Nonhazardous Solid Waste

Listed below are nonhazardous waste streams that could potentially be generated from construction of the generating facility and the electric transmission line.

Paper, Wood, Glass, and Plastics—Approximately 60 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. Some wood and glass waste will also be generated during demolition of the storage building and the paint and sandblast building. Waste that cannot be recycled will be disposed of weekly in a Class III landfill. Onsite, the waste will be placed in dumpsters.

Concrete—Approximately 3,700 tons of excess concrete will be generated during construction and demolition of the painting and sandblasting building, storage building, and MEPPs diesel tank basin. Waste concrete will be disposed of weekly in 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 30 tons of metal, including steel from welding/cutting operations, packing materials, and empty nonhazardous chemical containers, and aluminum waste from packing materials and electrical wiring will be generated during construction. Approximately 1,200 tons of metal waste will be generated from demolition of the 115 kilovolt (kV) transmission tower and other existing structures and piping. 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, storm water runoff, pressure testing water, equipment washdown water, and water from excavation dewatering during construction (if dewatering is required). Depending on the chemical quality of these wastewaters, they could be classified as hazardous or nonhazardous. As discussed in

Section 8.14.4.2.2, the waste waters would be sampled and if they are hazardous would be disposed of as described in Section 8.14.3.2. Methods for disposing of nonhazardous wastewaters are identified in Section 8.14.3.1.

Hazardous Waste

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

Flushing and cleaning waste liquid will be generated as pipes are cleaned and flushed. The volume of flushing and cleaning liquid waste generated is estimated to be one to two times the internal volume of the pipes cleaned. The quantity of welding, solvent, batteries, and paint waste is expected to be minimal. Wastewaters generated during construction could also be considered hazardous, if so demonstrated by sampling described in Section 8.14.2.2.2. Methods for recycling and disposal of hazardous wastes during construction are identified in Section 8.14.4.1.

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. This responsibility will include 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, before expiration of the 90-day storage limit.

8.14.1.2.2 Operation Phase

During HBRP 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.

Nonhazardous Solid Waste

The HBRP will produce facility wastes, typical of power generation facility operations and maintenance activities. These will include rags, 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 1,040 cubic yards per year. Large metal parts will be recycled.

Nonhazardous Wastewater

A water balance diagram provided in Figure 7.1-1 illustrates the expected liquid waste streams and flow rates for the HBRP. The wastewater collection system will collect sanitary wastewater from sinks, toilets, and other sanitary facilities to be discharged to the sanitary sewer system.

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 will be routed to the facility wastewater collection system. Drains that could contain oil or grease will first be routed through an oil/water separator.

Hazardous Waste

Hazardous waste generated will include waste lubricating oil, absorbents, used filters, spent catalyst, lead-acid batteries, and chemical cleaning wastes. The catalyst units will contain heavy metals that are considered hazardous. Chemical cleaning wastes, consisting of alkaline and acidic cleaning solutions, will be generated from periodic cleaning of the piping. These wastes may contain high concentrations of heavy metals and will be collected for offsite disposal.

Coolant from radiator cooling system will be recycled if feasible, or if unsuitable for reuse, it will be trucked offsite for disposal at an approved disposal facility.

Wastes that will be generated at the facility are summarized in Table 8.14-1.

TABLE 8.14-1
Hazardous Wastes Generated at the HBRP Facility

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating oil	Small leaks and spills from the lubricating oil system	Hydrocarbons	300 lb/year	Hazardous	Cleaned up using sorbent and rags—disposed of by certified oil recycler
Lubricating oil filters	Gas reciprocating engine lubricating oil system	Paper, metal, and hydrocarbons	600 lb/year	Hazardous	Recycled or disposed of by certified oil recycler
Radiator Coolant	Air cooled radiator system	Propylene glycol/water mixture	2,600 gal/year	California Hazardous only	Recycled or disposed of by certified recycler
Used Air Filters	Engine Inlet Air System	Paper, metal	630 filters/yr	Hazardous	Recycled or disposed of at an approved disposal facility
Selective catalytic reduction (SCR) catalyst units	SCR system (warranty is 3 years—use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	28,000 lb every 3 to 5 years	Hazardous	Recycled by SCR manufacturer or disposed of in Class I landfill
Carbon Monoxide (CO) catalyst units	CO catalyst (use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	18,000 lb every 3 to 5 years	Hazardous	Recycled by manufacturer
Oily rags	Maintenance, wipe-down of equipment, etc.	Hydrocarbons, cloth	1,000 lb/year (2,500 rags/year)	Hazardous	Recycled or disposed of by certified oil recycler

TABLE 8.14-1
Hazardous Wastes Generated at the HBRP Facility

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Oil sorbents	Cleanup of small spills	Hydrocarbons	1,000 lb/year	Hazardous	Recycled or disposed of by certified oil recycler
Waste Oil/Sludge	Oil Water Separator	Hydrocarbons	9,200 gallons/yr	Hazardous	Recycled or disposed of by certified oil recycler
Spent batteries	Lead Acid, Alkaline	Lead and Sulfuric Acid	40 in 10 years	Once per lifetime of battery	Recycle

8.14.2 Environmental Consequences

8.14.2.1 Significance Criteria

The project could have a significant effect on the environment in terms of hazardous materials handling if it would do the following (California Environmental Quality Act [CEQA] 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, 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 8.5, Hazardous Materials Handling.

8.14.2.2 Cortese List

An examination of the DTSC's Hazardous Waste and Substances Site List (Cortese List) identifies 13 sites currently on the list for Humboldt County compiled pursuant to Government Code Section 65962.5. Of the 13 sites, 4 are located within the city limits of the City of Eureka, and are at least 3.5 miles to the northeast of the site. The remaining 9 sites are located more than 10 miles from the project site (DTSC, 2006). Therefore, the HBRP project site is not located on a Cortese-listed site.

8.14.2.3 Solid Waste Disposal

Nonhazardous solid waste (often referred to as solid waste, municipal solid waste, 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 will be deposited in a permitted Class I landfill. The following sections describe the waste disposal sites feasible for disposal of HBRP wastes.

8.14.2.3.1 Nonhazardous Waste

Humboldt Waste Management Authority is the sole solid waste franchise to provide solid waste collection services for the project site area**.** Solid waste is first taken to the Hawthorne Street Transfer Station, where it is then directed to either the Anderson Landfill in Anderson, California (approximately 100 miles from the HBRP site) or the Dry Creek Landfill in Medford, Oregon (approximately 130 miles from the HBRP site) (Rigge, 2006). Both the Anderson Landfill and the Dry Creek Landfill have adequate capacity to handle and dispose of solid waste generated by the HBRP facility, as shown in Table 8.14-2.

TABLE 8.14-2
Solid Waste Disposal Facilities in the Vicinity of the HBRP Project

Landfill/MRF/ Transfer Station	Location	Class	Permitted Capacity [a]	Remaining Capacity (cubic yards)	Permitted Throughput (tons per day)	Estimated Closure Date	Enforcement Action Taken
Anderson Landfill	Anderson, California	III	Data not available	16,764,000	1,018	1/1/2049	No
Dry Creek Landfill	Medford, Oregon	[b]	17,000,000 (50 million tons)	28,421,000 (47.5 million tons)	972	2056	NA

[a] Anderson landfill information is based on California Integrated Waste Management Board (CIWMB) Solid Waste Information System Database (CIWMB, 2006) and phone conversation with Anderson landfill (Johnson, 2006).

[b] California classification does not apply because landfill is located in Oregon State. Landfill is subtitle D compliant (Fortier, 2006).

8.14.2.3.2 Hazardous Waste

Hazardous waste generated at the HBRP 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 are not permitted in California.)

According to the DTSC, 64 facilities in California can accept hazardous waste for treatment and recycling (DTSC, 2005). For ultimate disposal, California has the three hazardous waste (Class I) landfills, described below. PG&E currently contracts with Chemical Waste Management in Kettleman Hills in Kings County for hazardous waste disposal.

Waste Management Kettleman Hills Landfill

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).

Clean Harbors Buttonwillow Landfill

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 (Buoni, 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, polychlorinated biphenyls (PCBs) with a concentration greater than 50 ppm, medical waste, explosives, and radioactive waste with radioactivity greater than 20,000 picocuries (Buoni, 2006).

Clean Harbors Westmoreland Landfill

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.

Additional 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 Romic Environmental in Palo Alto; Clean Harbors in San Jose; Chico Drain Oil Service, LLC in Chico; Teris, Inc. in Wilmington; Evergreen Environmental in Newark; and Asbury Environmental Services in Chico, California (DTSC, 2005).

8.14.3 Cumulative Impacts

The HBRP facility will generate nonhazardous solid waste that will add to the total waste generated in Humboldt County and in California. It is estimated that HBRP will generate approximately 4,960 tons of solid waste during construction and about 1,040 cubic yards a year from operations (including approximately 80 tons of hazardous waste). This includes 9,200 gallons of oil water separator waste per year. However, there is adequate recycling and landfill capacity in California to recycle and dispose of the waste generated by HBRP. Therefore, the impact of the project on solid waste recycling and disposal capacity is not significant.

The HBRP will be included in the Humboldt County's Waste Reduction Program. Depending on the location within the county, the solid waste hauler will provide curbside collection of recyclables on a routine basis, and delivery of recyclables to recycling facilities. The County currently exceeds the 50 percent solid waste diversion/recycling goal established by AB 939 (Jeffrey, 2006).

Hazardous waste generated during operation of HBRP will consist of waste oil, filters, SCR and oxidation catalysts, and cleaning compounds. The waste oil and catalysts will be recycled or disposed of off site. Cleaning compounds 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 HBRP on hazardous waste recycling, treatment, and disposal capability is not significant.

8.14.4 Mitigation and Waste Management Methods

The handling and management of waste generated by HBRP 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 (such as

high-efficiency cleaning methods). The next level of waste management will involve reusing or recycling wastes (such as used oil recycling). For wastes that cannot be recycled, treatment will be used, if possible, to make the waste nonhazardous (such as neutralization). Finally, offsite disposal will be used to dispose of residual wastes that cannot be reused, recycled, or treated.

The following sections present methods for managing both nonhazardous and hazardous waste generated by HBRP.

8.14.4.1 Construction Phase

Nonhazardous solid waste generated during demolition and construction will be collected in onsite dumpsters and picked up periodically by the Humboldt Waste Management Authority. The waste will then be taken to the Hawthorn Street Transfer Station, where it will be separated and/or consolidated and shipped to either Anderson Landfill or Dry Creek 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 excavation dewatering water, hydrostatic test water, equipment wash water, and stormwater runoff. Sanitary waste will be collected in portable, self-contained toilets. Excavation dewatering water be discharged into the HCSD sanitary sewer system or a Low Threat Discharge Permit will be obtained from the North Coast Regional Water Quality Control Board. The hydrostatic test water will be discharged into the HCSD sanitary sewer system. Equipment wash water 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 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, 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, before expiration of the 90-day storage limit.

8.14.4.2 Operation Phase

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

8.14.4.2.1 Nonhazardous Wastes

Wastewater from facility sinks, toilets, and showers will be disposed of using the Humboldt Bay Municipal Water District sanitary sewer.

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

8.14.4.2.2 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:

- The HBRP will be classified as a hazardous waste generator and will obtain a site-specific U.S. Environmental Protection Agency (USEPA) identification (ID) number that will be used to manifest hazardous waste from the HBRP facility. Hazardous waste from the HBRP 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 *California Code of Regulations* (CCR) Title 22 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 not roofed, sized for a 25-year, 24-hour storm. 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 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, such as Romic Environmental.
- 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.

8.14.4.3 Facility Closure

When HBRP is closed, 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 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.

8.14.4.3.1 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 California Energy Commission (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 as described in the plant closure section. 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 8.14.7.

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 risk management plan (RMP). 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.

8.14.4.3.2 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 (see Section 4.0). Unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and secured 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 HBRP decommissioning activities.

8.14.4.3.3 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.

8.14.5 Laws, Ordinances, Regulations, and Standards

Nonhazardous and hazardous waste handling at HBRP 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 8.14-3 presents a summary of the LORS applicable to waste handling at the HBRP facility.

TABLE 8.14-3
Laws, Ordinances, Regulations, and Standards Applicable to HBRP Waste Management

LORS	Purpose	Applicability (Application for Certification [AFC] Section Explaining Conformance)
Federal		
Resource Conservation and Recovery Act of 1976 (RCRA) Subtitle D	Regulates design and operation of solid waste landfills	HBRP solid waste will be collected and disposed of by a collection company in conformance with Subtitle D (Sections 8.14.3.1, 8.14.3.2).
RCRA Subtitle C	Controls storage, treatment, and disposal of hazardous waste	Hazardous waste will be handled by contractors in conformance with Subtitle C (Sections 8.14.4.1, 8.14.4.2, 8.14.8).
Clean Water Act (CWA)	Controls discharge of wastewater to the surface waters of the U.S.	Industrial and sanitary wastewater will be discharged to the Humboldt Bay Municipal Water District sewer system (Sections 8.114.2.1.2, 8.14.2.2.2, 8.14.4.1, 8.14.4.2).
State		
California Integrated Waste Management Act (CIWMA)	Controls solid waste collectors, recyclers, and depositors	HBRP solid waste will be collected and disposed of by a collection company in conformance with the CIWMA (Sections 8.14.2.1.1, 8.14.3.1).
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 (Sections 8.14.4.1, 8.14.4.2, 8.14.8).
Porter-Cologne Water Quality Control Act	Controls discharge of wastewater to surface waters and groundwaters of California	Industrial and sanitary wastewater will be discharged to the Humboldt Bay Municipal Water District sanitation sewer system (Sections 8.114.2.1.2, 8.14.2.2.2, 8.14.4.1, 8.14.4.2).
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 Humboldt County Division of Environmental Health (Section 8.14.9).

TABLE 8.14-3
Laws, Ordinances, Regulations, and Standards Applicable to HBRP Waste Management

LORS	Purpose	Applicability (Application for Certification [AFC] Section Explaining Conformance)
Local		
Humboldt County Integrated Waste Management Plan	Provides guidance for local management of solid waste and household hazardous waste.	HBRP will comply with the County's Integrated Waste Management Plan by recycling as much waste as possible (Sections 8.14.2.1.1, 8.14.2.2.1, 8.14.4.2.1, and 8.14.8)
Humboldt County General Plan, Public Services and Facilities, Chapter 4, Section 4600 Solid Waste Collection/Disposal	Establishes County policies on reducing waste generation, meeting waste diversion goals, encouraging cleanup of contaminated sites, and ensuring adequate waste disposal capacity for the County's solid waste	Waste will be recycled consistent with applicable LORS (Sections 8.14.4 and 8.14.7).
Humboldt Fire District	Adopts Uniform Fire Code	HBRP will obtain a permit if needed. (Section 8.14.9)

8.14.5.1 Federal

The USEPA regulates wastewater under the CWA. The federal statute that controls both nonhazardous and hazardous waste is RCRA 42 USC 6901, et seq. RCRA's implementing regulations are found at 40 CFR 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). HBRP will conform to 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.

8.14.5.2 State

Wastewater is regulated by the State and Regional Water Quality Control Boards under the Porter-Cologne Water Quality Control Act. Nonhazardous solid waste is regulated by the 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 Humboldt County and the solid waste hauler and disposer that will collect HBRP solid waste. It also affects HBRP 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 the California HWCL (Health and Safety Code Section 25100, et seq.). Because California has elected to develop its own program, the HWCL performs essentially the same regulatory functions as RCRA and is the law that will regulate hazardous waste at HBRP. However, the HWCL includes hazardous wastes that are not classified as hazardous waste under RCRA. Because hazardous wastes will be generated at the HBRP facility during construction and operation, the HWCL will require the Applicant to adhere to storage, recordkeeping, reporting, and training requirements for these wastes.

8.14.5.3 Local

The Humboldt County, Department of Health and Human Services, Environmental Health Division is certified by the CIWMB as the Local Enforcement Agency for all solid waste facilities in Humboldt County. The Division will be responsible for administering and enforcing the CIWMA for solid, nonhazardous waste for HBRP.

For hazardous waste, local regulation consists primarily of the administration and enforcement of the HWCL. Humboldt County Department of Environmental Health (DEH) is the local entity responsible for inspecting hazardous waste generators and reviewing their procedures for storage, treatment, and disposal of hazardous wastes.

For emergency spills, Humboldt County has a Joint Powers Agreement (JPA) with the City of Eureka's Fire Department Regional Hazardous Material Response Team (HMRT). The HMRT consists of 12 members of the Eureka Fire Department who are trained and certified to the First Responder Level. The HMRT 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 HMRT is an on-call team, and responds in approximately 45 minutes. However, the nearest fire station to the project site, Fire Station #12, located at 755 Herrick Way, will be the first responder to the site (response time of approximately 3 to 5 minutes), with additional support provided by the HMRT (Ziemer, 2006).

8.14.5.4 Codes

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

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

8.14.6 Involved Agencies and Agency Contacts

Several agencies, including the USEPA at the federal level and the DTSC at the state level, regulate nonhazardous and hazardous waste and will be involved in the regulation of the waste generated by the HBRP. The waste laws, however, are administered and enforced primarily through the Humboldt County DEH, which is the designated Certified Unified Program Agency (CUPA). Recycling of non-hazardous waste is managed by the Humboldt County DEH (Hawkins, 2006). The people to contact for nonhazardous and hazardous waste management are listed in Table 8.14-4.

TABLE 8.14-4
Agency Contacts for HBRP Waste Management

Topic	Agency	Address	Contact	Title	Telephone
Nonhazardous Waste					
Solid Waste	Humboldt County DEH	100 H Street, Ste. 100 Eureka, CA 95501	Carolyn Hawkiins	Program Manager	(707) 268-2224
Recycling	Humboldt County DEH	100 H Street, Ste. 100 Eureka, CA 95501	Louise Jeffrey	Waste Reduction Coordinator	(707) 445-6215
Hazardous Waste					
Hazardous Waste Compliance and Inspections	Humboldt County DEH	100 H Street, Ste. 100 Eureka, CA 95501	Melissa Martel	CUPA Program Manager	(707) 268-2220

8.14.7 Permits Required and Permit Schedule

The storage of hazardous wastes at the HBRP facility would be included in the Hazardous Materials Business Plan (HMBP) submitted to the Humboldt County DEH, as described in Section 8.12, Hazardous Materials. The require permit and permit schedule is shown in Table 8.14-5.

TABLE 8.14-5
Permits Required and Permit Schedule for HBRP Project Waste Management

Permit	Applicability	Schedule for Permit
Unified Program Facility Permit	Humboldt County DEH requires that businesses prepare a HMBP in order to demonstrate compliance with the various programs that control and monitor the use of hazardous substances.	Before storing regulated hazardous wastes at the site.

8.14.8 References

Buoni, M. 2006. Clean Harbor's Buttonwillow Landfill. Personal communication. February 16.

CIWMB, 2006. "Solid Waste Information System (SWIS) Database." July.

Department of Toxic Substances Control (DTSC). 2005. "California Commercial Offsite Hazardous Waste Management Facilities." November 8.

DTSC. 2006. DTSC's Hazardous Waste and Substances Site List (Cortese List), Humboldt County, July 24, 2006. http://www.envirostor.dtsc.ca.gov/public/

E2 Consulting Engineers, Inc. (E2) 2006. Final Phase I Environmental Site Assessment, Humboldt Bay Repowering Project, Humboldt Bay, California. September 11.

Enercon Services, Inc. (ESI) 2006. Humboldt Bay Power Plant, Draft Historical Site Assessment, September.

Fortier, L. 2006. Dry Creek Landfill. Personal communication between Lee Fortier, Dry Creek Landfill and Raeann Lukas, CH2M HILL. July 14.

Hawkins, C. 2006. Humboldt County DEH. Personal communication between Carolyn Hawkins, Humboldt County DEH, and Raeann Lukas, CH2M HILL. July 13.

Jeffrey, L. 2006. Personal communication between Louise Jeffrey, Humboldt County Recycling Coordinator and Sarah Madams, CH2M HILL. September 14.

Johnson, G. 2006. Anderson Landfill. Personal communication between Greg Johnson, Anderson Landfill and Sarah Madams, CH2M HILL. July 25.

Rigge, S. 2006. Hawthorne Street Transfer Station. Personal communication between Suzanne Rigge, Hawthorne Street Transfer Station and Raeann Lukas, CH2M HILL. July 13.

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.

Ziemer, G., 2006. Humboldt Fire District 1, Headquarters. Personal communication. July 11.