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Appendix N	Phase I Environmental Site Assessment
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8.13 WASTE MANAGEMENT

In accordance with CEC regulations, this section evaluates the potential impacts of nonhazardous and hazardous wastes associated with construction and operation of the proposed Colusa Generating Station (CGS), including the installation of water and natural gas conveyance lines, electrical transmission lines, and upgrading of access roads and bridges.

The existing conditions of the project site are described in Section 8.13.1. The types of waste that would be generated during the construction and operation phases for the proposed project are described in the following sections. The waste disposal sites for both nonhazardous and hazardous wastes have been identified in order to evaluate whether adequate disposal capacity is available for the proposed project. The mitigation measures (i.e., best management practices) that will be used by the proposed project to manage and minimize waste generation are also described. Finally, this section includes a discussion of the relevant federal, state, and local requirements and evaluates the conformance of the proposed project with these requirements.

8.13.1 Affected Environment

The project site is approximately 100 acres and is located within an agricultural area on the Holthouse Ranch property near Maxwell in Colusa County, California. The property consists of uncultivated agricultural land currently used for cattle grazing. Within the 100-acre area, it is anticipated that only a 31-acre portion at the southern end of the property will be used for the power plant. Approximately 43 acres immediately to the north and east of the power plant will be used for a construction laydown area. In addition, transmission routes to the east of the plant will convey water, natural gas, and electric lines. Offsite project improvements include the replacement of the Glenn-Colusa Canal and Teresa Creek Bridges and widening of the eastern half of the Delevan/McDermott intersection. All county and private access roads would be repaved after the completion of construction.

A Phase I Environmental Site Assessment (ESA) of the proposed CGS site (see Appendix N) was performed in accordance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessment: Phase I Site Assessment Process E-1527-00 as required by the CEC for an AFC (URS, 2006). The Phase I ESA concluded that no Recognized Environmental Conditions (RECs) were observed on the subject or surrounding property. By definition under ASTM designation E-1527-00, the term “Recognized Environmental Condition” means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A copy of the 2001 Phase I ESA is contained in Appendix N1; the Phase I ESA update is provided in Appendix N2. Since 2001, the site has been used primarily for cattle grazing, and no activities likely to result in a Recognized Environmental Condition have occurred on the site during that time. Thus, the 2001 Phase I ESA reflects current site conditions.

8.13.2 Environmental Consequences

8.13.2.1 Project Waste Generation

The wastes that would be generated during both the construction and the operation phases of the proposed project were identified to determine whether the proposed project would result in any potentially significant impacts. The significance criteria are based on the California Environmental Quality Act

(CEQA) Guidelines, Appendix G, Environmental Checklist Form (approved January 1, 1999) and on performance standards or thresholds adopted by responsible agencies. An impact may be considered significant if:

- Construction activities result in waste materials being introduced into the environment in violation of federal, state, or local waste management and disposal regulations.
- Construction activities generate waste materials that exceed the receiving capacity of appropriate disposal facilities.
- Operation of the facility results in waste materials being introduced into the environment in violation of federal, state, or local waste management and disposal regulations.

8.13.2.1.1 Construction

During construction of the CGS, the primary waste generated would be solid nonhazardous waste. However, some nonhazardous liquid waste(s) would also be generated. It is anticipated that some hazardous solid and liquid waste(s) would also be generated during plant construction. Additionally, solid nonhazardous and some hazardous waste would also be generated during offsite project improvements, including the replacement of the Glenn-Colusa Canal and Teresa Creek Bridges, and widening of the eastern half of the Delevan/McDermott Road intersection. Generation of hazardous waste during construction of the water and natural gas supply lines and the electrical transmission lines is anticipated to be minimal. The types of waste(s) and estimated quantities are described below and summarized in Table 8.13-1.

Nonhazardous Solid Wastes

Nonhazardous solid wastes generated during the construction phase of the CGS would include excess scrap wood, concrete, and empty containers (plastic, metal, glass, cardboard, and styrofoam); scrap metals, rubbers, and plastics; and thermal insulation (silicate and mineral wool). Anticipated waste streams and their estimated quantities are described below and summarized in Table 8.13-1.

Wood, Paper/Cardboard, Glass, Plastic, Insulation, and Concrete. Wood, paper, cardboard glass, plastic, insulation, and minor amounts of concrete would be generated from waste lumber, packing and insulation materials, and empty nonhazardous waste materials containers. Approximately 4,160 cubic yards of these wastes are anticipated to be generated during the construction of the CGS. Where practical, these wastes will be recycled. Nonhazardous wastes that are not recycled will be disposed of at an approved landfill in accordance with all federal, state, and local regulations.

Metal. Metal wastes would include scrap from welding and cutting operations, construction materials (reinforcement bar, wire mesh, metal sheeting, tubing, piping, ducting, and wire), and empty nonhazardous materials containers. Approximately 50 tons of waste metal would be generated during construction of the CGS. Where practical, ferrous and nonferrous waste metals would be recycled. Waste metals that cannot be recycled would be disposed of at an approved landfill in accordance with all federal, state, and local regulations.

Nonhazardous Liquid Wastes

Nonhazardous liquid waste generated during construction would be mainly wastewater generated from sanitary waste, pipe hydrotesting, equipment washing, and stormwater runoff. Sanitary waste would be collected in portable, self-contained toilets serviced by an outside contractor. Equipment wash water and hydrotest water would be contained in tanks or other storage containers at specifically designated areas. If the water is observed to contain free phase hydrocarbons, the hydrocarbons will be removed and

managed appropriately in accordance with federal, state, and local regulations. The remaining water would be tested to determine its final disposition. If the water is contaminated, it would be removed from the site and disposed of at a liquid disposal facility. If the water is suitable for discharge, it would be discharged to a stormwater retention basin or evaporation pond. For construction activities, a Storm Water Pollution Prevention Plan (SWPPP) will be developed and implemented in accordance with all applicable state and local requirements.

As indicated in the above sections, the nonhazardous solid wastes that cannot be recycled or reused would be disposed of at an approved landfill in accordance with all federal, state, and local regulations. It is expected that the disposal of solid wastes from the facility would represent only a nominal increase (less than 0.01 percent) relative to current disposal volumes at landfills available to receive the nonhazardous solid wastes. These increases will not significantly affect the available landfill capacity and are considered a less-than-significant impact. Table 8.13-2 shows candidate landfill locations, capacity, annual tonnage, and estimated closure dates.

Hazardous Wastes

The majority of the hazardous waste generated during construction would consist of liquid waste such as waste oil from routine equipment maintenance, flushing and cleaning fluids, passivating fluids (to prepare piping for use), waste solvents, and waste paints or other material coatings. Additionally, some solid waste in the form of spent welding materials, oil filters, oily rags and absorbent, spent batteries, and empty hazardous materials containers may also be generated.

Waste liquid is generated when pipes are cleaned and flushed. Passivating fluid waste is generated when high-temperature piping is treated with either a phosphate or nitrate solution. The volume of flushing and cleaning and passivating liquid waste generated during construction is estimated to be up to 600,000 gallons. The quantity of waste oil to be generated is estimated at approximately 13,100 gallons over the entire construction period. Waste solvents and waste paint and other coating waste materials would be generated at an estimated rate of approximately 200 gallons a month.

Spent welding materials would be generated at a rate of approximately 200 pounds per month. Additionally, waste oil filters would also be generated at approximately 200 pounds per month.

The construction contractor would be considered the generator of hazardous waste associated with plant construction activities and would be responsible for proper handling of all hazardous wastes in accordance with all federal, state and local regulations. This would include all licensing requirements, training of employees where required, accumulation limits and duration, and record keeping and reporting requirements. Wastes that are deemed hazardous would be collected in hazardous waste accumulation containers placed near the area of generation. After the end of each workday, the accumulation containers would be moved to the contractor's licensed hazardous waste accumulation area where hazardous wastes can be stored up to 90 days after the date of generation. All hazardous wastes would be removed from the site by a licensed hazardous waste management facility (see Tables 8.13-2 and 8.13-3).

The types and quantities of hazardous wastes expected to be generated during construction activities at the facility are shown in Table 8.13-1. The quantities of solid hazardous waste that would be generated are well below the capacity of the available disposal facilities, and most of the liquid hazardous wastes would be recycled. These increases in waste volume will not significantly affect the capacity of the available hazardous waste treatment and disposal facilities and are considered a less-than-significant impact.

8.13.2.1.2 Operation Phase

Nonhazardous Solid Wastes

The operation and maintenance of the plant would generate nonhazardous solid wastes typical of power generation facilities. These wastes would include scrap metal and plastic, insulation material, paper, glass, empty containers, sludge and evaporite deposits (mainly salts) from the zero liquid discharge system, and used equipment parts from maintenance activities, including used gaskets for piping flanges, pumps, spent air filters, and spent turbine parts. Nonhazardous solid wastes would be recycled, to the extent practical, and the remainder disposed of on a regular basis at an approved landfill in accordance with federal, state, and local regulations. Additionally, sludge from the septic system may have to be periodically removed and trucked off site for disposal. It is expected that the disposal of solid wastes from the facility would represent only a nominal (less than 0.01 percent) increase relative to current disposal volumes at the landfill. These increases would not significantly alter the available landfill capacity and are considered a less-than-significant impact.

Nonhazardous Liquid Wastes

Three separate wastewater collection systems are proposed for the CGS. The first is the plant wastewater system, which would collect wastewater from the CTG evaporative coolers and HRSGs, water treatment system, chemical feed area drains, and general plant drains. The plant wastewater system is discussed in further detail below. The second is the stormwater runoff that would be collected by a surface drainage system and directed to a 2.2-acre-foot stormwater detention basin. Water from the detention basin will be discharged in accordance with National Pollutant Discharge Elimination System (NPDES) requirements. The third system is the sanitary system, which would collect sanitary wastewater from sinks, toilets, and other sanitary facilities and discharge it to an onsite septic system. The sanitary system would be based on gravity flow and may include lift stations if required.

The plant wastewater system would collect all wastewater generated in the operation of the plant and deliver it to a zero liquid discharge system. Wastewater streams, including CTG evaporative cooler and HRSG boiler blowdowns, would be cycled through the water purification system and returned to the demineralizer as a makeup supply. Reject streams are concentrated in a dryer. A water balance diagram for the proposed plant is presented on Figure 3.4-5.

Detailed summaries are presented in Section 3.4.6 in the Project Description. As indicated, all wastewater generated at the plant would be treated and reused on site. The following provides a description of the waste streams and treatment processes for informational purposes. No wastewater generated from the site will require treatment at an offsite facility.

Evaporative Cooler Blowdown. The concentration of dissolved solids in the evaporative cooler water is maintained below given limits, primarily for total dissolved solids (TDS), by withdrawing a portion of the evaporative cooler water (i.e., evaporative cooler blowdown) and replacing it with fresh makeup water from the raw water storage tank and recycling the evaporative cooler blowdown. The blowdown stream is sent to the demineralization water treatment system for use and reused.

HRSG Blowdown. Water circulating in the plant's steam cycle accumulates dissolved solids that must be maintained below given limits to prevent deposition of solid particles on the steam turbine blading. The concentration of dissolved solids is maintained below such limits by withdrawing a portion of the water from the HRSG steam drums (i.e., HRSG blowdown), and replacing it with product water from the demineralization process described previously. HRSG blowdown is routed to the demineralization water treatment system for reuse.

Water Treatment System Demineralizer. The water treatment system demineralizer includes a micro filtration system, first and second pass reverse osmosis (RO) systems, and an electro-deionizer unit. The demineralizer receives recycled feed water that is distillate water from the evaporator unit of the zero liquid discharge system. Demineralized water from the demineralizer is sent to the demineralized water storage tank.

The electro-deionizer equipment consisting of a membrane and ion exchange system will continuously produce a concentrated reject water stream that contains all of the dissolved solids removed from the distillate water stream. This reject water stream will be routed to the evaporator and dryer of the zero liquid discharge system.

Chemical Feed Area Drainage. Chemical feed area drainage consists of spillage, chemical tank overflows, maintenance operations, and chemical area wash downs, and is collected in corrosion-resistant piping separate from the general plant drainage system. The chemical feed area drainage is routed to a neutralization tank, adjusted to neutral pH, and then routed to the evaporator and dryer of the zero liquid discharge system.

General Plant Drainage. General plant drainage consists of wastewater collected by sample drains, equipment drains, equipment leakage, and area wash downs. Wastewater collected in the general plant drainage system is routed to the storm drain system. General plant drainage that potentially contains oil or grease is routed through an oily water separator, combined with the plant process wastewater and then discharged into the storm drain system. Water is then conveyed to the stormwater detention basin.

Because the plant will employ the use of a zero liquid discharge system, wastewater generated on the site is treated and reused. No wastewater generated from the plant will require treatment at a municipal treatment facility or privately owned treatment works. As such, there will be no impact to these facilities in the area.

Hazardous Waste

Hazardous waste generated by operation of the proposed plant would include waste oil and spent oil filters from the CTGs and STGs and SCR and oxidation catalyst units. The types and quantities of hazardous wastes expected to be generated at the facility are shown in Table 8.13-4. The catalyst units contain heavy metals that are considered hazardous. Chemical cleaning wastes would also be generated from the periodic cleaning of boilers, pre-boiler systems, and the HRSG pressure parts and steam cycle piping systems. They would consist of alkaline and acidic cleaning solutions used during pre-operational chemical cleaning of the boiler and pre-boiler systems 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 wash waters. These wastes potentially contain elevated concentrations of heavy metals.

Waste lubricants (mainly waste oil) would be periodically generated during the operation and maintenance of the facility. Waste oil would be collected and stored in appropriate containers and recycled by an approved contractor. It is anticipated that approximately 1,300 gallons of waste oil would be generated annually.

Oily water separator sludge will be disposed of at an approved treatment, storage, and disposal facility (TSDF)/recycling center in accordance with federal, state, and local regulations.

Combustion exhaust catalyst used as part of the air quality control system associated with the generating units would contain vanadium and other metals and is expected to have a service life of approximately three to 5 years. Spent catalyst would be recycled by the manufacturer, if possible. If recycling by the manufacturer or another source is not possible, these materials would be disposed of in an appropriate

manner at an approved landfill in accordance with federal, state, and local regulations. Approximately 120,000 pounds of spent catalyst would be generated over a 3- to 5-year period.

Wash water resulting from periodic cleaning (up to every six months) of the compressors and HRSGs may contain elevated concentrations of heavy metals. All cleaning wash water would be disposed of at a liquid waste disposal facility. Up to 52,000 gallons of wash and chemical cleaning water may be generated on a yearly basis.

Approximately 57 tons of solid hazardous waste would be generated annually, on a worst-case basis. Between 10 and 15 tons of this waste would be recycled, and the remainder would require offsite disposal. The amount that would require offsite disposal would result in a nominal increase (less than 0.01 percent) relative to current disposal volumes at approved landfills in California (see Section 8.13.3) and is considered to be a less-than-significant impact.

8.13.2.2 Waste Disposal Sites

Nonhazardous solid wastes (municipal solid waste or garbage) will be recycled. If the material is not recyclable, it will be disposed of at an approved landfill in accordance with federal, state, and local regulations. Nonhazardous liquid wastes (storm water runoff and domestic wastewater) will be discharged to the sedimentation/settling basin or to the septic system. Both solid and liquid hazardous wastes will be disposed of at a TSDF or at an approved landfill in accordance with federal, state, and local regulations.

Tables 8.13-2 and 8.13-3 list the candidate disposal and recycling facilities that can be used for the nonhazardous waste produced by the facility. Waste Management, Inc., in conjunction with Colusa Solid Waste and Recycling, has the collection franchise for Colusa County.

Hazardous waste generated at the facility would be stored on site for fewer than 90 days at specified accumulation points. A licensed hazardous waste transporter would haul the waste to an approved TSDF. Some of these facilities may only store waste, but others are permitted to treat waste for the recovery of reusable products or dispose of the waste by incineration, deep-well injection, or landfilling (incineration and deep-well injection are not allowed in California).

There were 137 Resource Conservation and Recovery Act (RCRA) TSDFs in California according to the U.S. Environmental Protection Agency (U.S. EPA) *Biennial RCRA Hazardous Waste Report* (U.S. EPA, 1999). However, many of these facilities are on military installations or industrial locations and do not accept waste from other generators.

There are no commercial TSDFs in Sutter or Yuba counties. The closest commercial facility is Safety Kleen in West Sacramento. This facility, however, is not a TSDF and waste can only be held there for a maximum of 10 days. Wastes collected at this facility are either transported to an appropriate landfill or to Safety Kleen in San Jose, which is permitted to store and transfer solvents, paints, and batteries; Safety Kleen also recycles used oil. Safety Kleen is owned by Laidlaw, which operates several TSDFs and two hazardous waste landfills in California.

California has three hazardous waste (Class I) landfills that may be used for the disposal of hazardous waste:

- **Safety Kleen, Buttonwillow Landfill in Kern County:** The Buttonwillow Landfill has a permitted capacity of 11 million cubic yards. Approximately 10.7 million cubic yards of capacity remain. With an annual usage of about 300,000 cubic yards, the landfill is expected to remain open until at least 2030. Buttonwillow is permitted to accept all hazardous wastes except for flammables, polychlorinated biphenyl (PCB) wastes with

concentrations exceeding 50 parts per million, medical wastes, explosives, and radioactive wastes with radioactivity greater than 20,000 picocuries.

- **Safety Kleen, Imperial County Landfill in Imperial County:** This landfill is permitted to receive 4 million cubic yards of Class I waste. Approximately 2.7 million cubic yards of Class I disposal capacity remain, and the landfill is not expected to close until about 2030.
- **Chemical Waste Management, Kettleman Hills Landfill in Kings County:** The Kettleman Hills landfill has a permitted capacity of 10.7 million cubic yards for Class I waste. Approximately 1,000,000 cubic yards were disposed of in the year 2000, which is higher than usual. Chemical Waste Management plans to obtain permits to use an additional 6 million cubic yards. If the annual usage continues at a rate similar to last year's, the landfill would close in 2013. At this juncture, however, only 499 out of 1,600 acres of the landfill are actively permitted.

The disposal vendor selected must have received a favorable audit. There is currently no shortage of hazardous waste landfill capacity in California. The deposit rate has decreased by approximately 50 percent over the last several years as a result of source reduction by generators and the out-of-state transfer of waste considered hazardous under the Hazardous Waste Control Law (HWCL), but not under RCRA. The hazardous wastes that would be generated annually by the proposed project are expected to be well below 0.01 percent of the combined capacity of the three hazardous waste landfills. This amount is considered to be a less-than-significant impact.

8.13.3 Cumulative Impacts

Nonhazardous waste generated at the facility would add to the total waste generated in Colusa County and in California. There are, however, adequate recycling facilities and landfill capacities to dispose of the waste from Colusa County over the next 40 to 50 years. The impact of the nonhazardous solid waste generated by the plant is, therefore, considered to be less than significant.

The hazardous waste generated at the facility will be recycled and treated to the extent possible. California has more than adequate treatment and disposal capacity for the hazardous wastes that cannot be recycled. The impact of the hazardous waste generated by the plant is, therefore, considered less than significant.

8.13.4 Mitigation Measures

No significant impacts relative to waste management are expected from the proposed project; however, several best management practices will be used by the facility to manage and minimize the amount of waste generated. The following priorities would be established for waste management during the construction and operation phases for the facility:

- Source reduction (preferred option);
- Recycling;
- Treatment; and
- Disposal (least desirable option).

Disposal will only be used for wastes that cannot be eliminated through source reduction or addressed by recycling or treatment. In order to address source reduction for hazardous waste, the proposed project will develop a plan for reducing their hazardous waste.

8.13.4.1 Construction Phase

The nonhazardous solid wastes produced during construction would be collected in onsite dumpsters and periodically picked up for disposal by Waste Management, Inc. The waste will be taken to the Maxwell Transfer Facility or the Colusa Solid Waste and Recycling Facility, where recyclable materials will be removed and the residue will be disposed of at an appropriate landfill. The disposal of wastewater will be coordinated by the construction contractor. Storm water will be discharged in accordance with the requirements of the construction storm water management permit obtained prior to construction. The generation of nonhazardous wastewater will be minimized through water conservation and re-use measures.

The majority of the hazardous waste generated during construction will be liquid wastes (waste oil, cleaning fluids, passivating fluids, and solvents). The construction contractor will manifest these wastes for disposal at a permitted Class I facility or recycling facility. Some solid waste (e.g., dried paint, welding materials, or spent filters) may be generated, but the quantity of this material is expected to be minimal. The construction contractor would be the generator and will dispose of this waste in accordance with all federal, state, and local laws and regulations.

8.13.4.2 Operation Phase

Nonhazardous Waste

Minor quantities of nonhazardous solid wastes are expected to be generated at the facility during operation; these minor quantities will require no further mitigation. Nonhazardous wastes will either be recycled (paper, cardboard, glass, metals, plastic, etc.) or will be hauled by Waste Management, Inc., to the Maxwell Transfer Station for disposal at an approved landfill in accordance with federal, state, and local regulations. No further mitigation of nonhazardous solid wastes is proposed.

The generation of nonhazardous wastewater at the facility would be minimized as much as practical by standard water conservation measures. The Central Valley Regional Water Quality Control Board (CVRWQCB) will specify permissible discharge levels and characteristics for the storm water discharge, including compliance sampling requirements. No further mitigation is proposed.

Hazardous Wastes

To prevent impacts to human health or the environment, procedures will be developed for the proper handling, labeling, packaging, storage, recordkeeping, and disposal of hazardous waste. The following general procedures will be employed:

- The facility will apply to the U.S. EPA for a U.S. EPA Hazardous Waste Identification Generator Number as a generator of hazardous waste;
- Hazardous wastes will be stored on site for less than 90 days in accordance with the requirements of Title 22 California Code of Regulations (CCR);
- Hazardous wastes will be segregated for compatibility and stored in designated accumulation areas with appropriate secondary containment;
- Hazardous wastes will be picked up for transport only by licensed hazardous waste haulers. All hazardous wastes will be properly manifested to a permitted disposal facility;

- Hazardous waste documentation, including the biennial hazardous waste generator reports that will be submitted to the Department of Toxic Substances Control (DTSC), will be kept on site and accessible for inspection for a period of not less than 3 years;
- Employees will be trained in hazardous waste management, spill prevention and response, and waste minimization; and
- Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be substituted for hazardous materials and wastes will be recycled where possible.

8.13.4.3 Monitoring

Because the environmental impacts caused by the construction and operation of the facility are expected to be minimal, extensive monitoring programs are not required. Generated wastes will be monitored in accordance with the generator permit requirements throughout the life of the plant. Wastewater (storm water) discharged from the plant will be monitored in accordance with the waste discharge requirements specified by the CVRWQCB.

8.13.4.4 Temporary Facility Closure

If it becomes necessary to close the facility temporarily for any reason (due to a disruption in the natural gas supply, flooding, damage from an earthquake, fire, storm, etc.), facility security will be maintained on a 24-hour basis and the CEC will be notified. A contingency plan for temporary closure will be prepared prior to startup of the facility to ensure compliance with all laws, ordinances, regulations, and standards (LORS) and to protect human health and the environment. Depending on the duration of any temporary shutdown, the plan will direct the safe shutdown of all equipment and the draining of all chemicals from the process. Any waste generated under these circumstances will be disposed of in accordance with all LORS.

8.13.4.5 Permanent Closure

The planned life of the facility is 30 years, though operations could last longer. A general closure plan identifying the handling and disposal requirements for nonhazardous and hazardous wastes will be prepared prior to closure. This plan will identify opportunities for recycling. All equipment containing liquids will be drained and decommissioned as part of closure procedures to protect public safety and the environment. Unused chemicals will be sold back to the suppliers or other purchasers where practicable. All nonhazardous wastes will be disposed of in appropriate landfills or recycled. Hazardous wastes will be disposed of according to all applicable LORS. The site will be secured 24 hours per day during the decommissioning activities.

8.13.5 Laws, Ordinances, Regulations, and Standards

The handling, storage, and disposal of nonhazardous and hazardous wastes from the facility would be governed by federal, state, and local laws. The LORS applicable to waste management at the facility are summarized in Table 8.13-5.

8.13.5.1 Federal

The handling, storage, and disposal of both hazardous and non-hazardous waste are addressed through RCRA (42 U.S. Code [USC] 6901 et seq.) and its implementing regulations (40 Code of Federal Regulations [CFR] 260 et seq.). In RCRA Subtitle D, minimum criteria are established for use by the state for the best practical controls and monitoring requirements for solid waste disposal facilities. The generation, storage, transportation, and disposal of hazardous wastes are comprehensively addressed in

RCRA Subtitle C. The U.S. EPA is responsible for implementing this law. The facility will conform with RCRA Subtitle C in all aspects of hazardous waste management.

Wastewater discharges from the facility are governed by the Clean Water Act (CWA).

8.13.5.2 State of California

Nonhazardous solid waste is regulated under the California Integrated Waste Management Act (CIWMA) of 1989 (Public Resources Code [PRC] Sections 40000 et seq.). State and local efforts in source reduction, recycling, and land disposal safety are coordinated through CIWMA. CIWMA requires each county to submit an integrated waste management plan to the state. Colusa County, the solid waste hauler, and the disposal site will all comply with CIWMA requirements. CIWMA affects the facility to the extent that hazardous wastes are not to be disposed of with nonhazardous wastes.

The discharge of wastewater is regulated by the State Water Resources Control Board (SWRCB). The CVRWQCB administers state water programs locally. The Porter-Cologne Water Quality Control Act controls the discharge of wastewater to surface or groundwater in California.

RCRA allows states to develop their own programs for the regulation of hazardous waste. The California HWCL (Health and Safety Code Sections 25100 et seq.) controls the storage, treatment, and disposal of hazardous wastes in California. Most administration and enforcement of HWCL rests with the DTSC. A memorandum of understanding has delegated some elements of the implementation of HWCL to local health departments. The HWCL identifies some wastes as being hazardous that are not classified as hazardous under RCRA. The HWCL will be adhered to throughout the construction and operation of the facility as hazardous wastes are removed from the site.

8.13.5.3 Local

For solid nonhazardous waste, Colusa County Department of Environmental Health has responsibility for administering and enforcing the CIWMA. For hazardous waste, local regulation consists primarily of the administration and enforcement of the HWCL. The Colusa County Department of Environmental Health, the Department of Emergency Services, the Fire Department, and the Sheriff's Department are the local agencies that will regulate the hazardous waste associated with the facility. For emergency spills, the CCSD dispatch center should be contacted, and the spill contained by the Maxwell Volunteer Fire Department in conjunction with the Sheriff's Department. A Hazardous Material Spill Response contractor (Clean Harbors) may also respond for containment, cleanup, and remediation. Local agency requirements and LORS associated with the proposed project will be addressed before the construction and operation of the facility, and the facility would conform with all local requirements. These include the need to obtain a Hazardous Materials Business Plan from the Colusa County Office of Emergency Services that will permit the storage of hazardous materials and wastes in accordance with state and local regulations.

8.13.6 Involved Agencies and Agency Contacts

Both the U.S. EPA and the California Environmental Protection Agency regulate hazardous and nonhazardous waste and will be involved in the regulation of waste generated by the facility. However, hazardous waste laws are administered and enforced primarily through local agencies, including the local Department of Health, the Fire Department, and the Sheriff's Department. Nonhazardous waste laws are administered and enforced primarily by the Colusa County Department of Environmental Health, Colusa County Public Works Department, and the CVRWQCB. The Colusa County Department of Environmental Health will advise on the health effects of leaks and spills of hazardous materials and hazardous waste. The agencies and persons to contact for each type of waste are shown below. Appropriate local agencies and LORS associated with the proposed project will also be addressed before the construction and operation of the facility.

Issue	Agency/Address	Contact/Title	Telephone
Nonhazardous solid waste disposal	Colusa County Public Works Department 1215 Market Street Colusa, CA 95932	Richard Dickson, Director	(530) 458-0466
Nonhazardous solid waste	Colusa County Department of Environmental Health 251 East Webster Street Colusa, CA 95932	Robert Kostlivi, Director	(530) 458-0395
Nonhazardous liquid waste discharged to a water surface body. Issues NPDES permit for Dewatering and Other Low Threat Discharges (Order No. 5-00-175)	Regional Water Quality Control Board; Central Valley Region 11020 Sun Center Drive, #200 Rancho Cordova, CA 95670	Jim Marshall, Permitting; Patricia Leary, Compliance and Enforcement	(916) 464-3291
Application for U.S. EPA identification generator number	U.S. Environmental Protection Agency 55 Hawthorne Street San Francisco, CA 94105-3906	Tetra Tech EMI Attention: Notifications 135 Main Street, Suite 1800 San Francisco, CA 94105	(415) 495-8895
Hazardous solid waste	Colusa County Department of Environmental Health 251 East Webster Street Colusa, CA 95932	Jaime Favila, Director	(530) 458-0395
All solid and liquid hazardous materials	Colusa County Office of Emergency Services 929 Bridge Street Colusa County, CA 95932	Lt. Doug Turner, Colusa County Sheriff's Department	(530) 458-0230
Contact in case of spill	Office of Emergency Services, Colusa County Sheriff's Department Dispatch Center 929 Bridge Street Colusa, CA 95932-2837	Janice Bell, OES Technician	(530) 458-0218
CCSD contacts MVFD for response	Maxwell Volunteer Fire Department (MVFD) 231 Oak Street Maxwell, CA 95955	David Wells, Fire Chief	(530) 438-2320
NPDES = National Pollutant Discharge Elimination System U.S. EPA = U.S. Environmental Protection Agency			

8.13.7 Permits Required and Permit Schedule

It will be necessary for the facility to obtain a National Pollution Discharge Elimination System permit from the CVRWQCB for the discharge of storm water from the retention basin to the surface or nearby surface water body. During the construction phase of the project, a Storm Water Pollution Prevention Plan will need to be prepared to address erosion control issues during plant construction. Based on the configuration of the zero liquid discharge system, treatment of water in the system (i.e., pH adjustment of

water from the chemical feed area drainage) is considered conditioning of process water, as it is returned to use in the process stream, and not treatment of wastewater. As such, a tiered permit from the DTSC for water treatment should not be required.

The facility would be considered a hazardous waste generator and will be required to obtain an EPA/DTSC hazardous waste generator identification number in accordance with 22 CCR, Section 66262.12. The State of California has a federally approved program for the administration of federal requirements regulated by the DTSC. Prior to facility startup, an application will be made to the DTSC for a hazardous waste generator identification number.

Responsible Agency	Permit/Approval	Schedule
Central Valley Regional Water Control Board	NPDES	One quarter prior to plant operation
Central Valley Regional Water Control Board	SWPPP	One quarter prior to construction
California Department of Toxic Substances Control and EPA Region IX	Hazardous waste generator identification number	One quarter prior to plant operation

8.13.8 References

Camp Dresser & McKee, Larry Walker Associates, Uribe and Associates, and Resources Planning Associates. 1993. California Storm Water Best Management Practice Handbooks. Prepared for Stormwater Quality Task Force. March 1993.

URS Corporation. 2001. *Phase I Environmental Site Assessment of the Proposed Colusa Power Plant Site Near Maxwell, California*. Draft. March 29, 2001. [Included as Appendix N1.]

URS Corporation. 2006. *Phase I Environmental Site Assessment Update. Proposed Colusa Power Plant Site, Maxwell, California*. May 24, 2006. [Included as Appendix N2.]

U.S. EPA (U.S. Environmental Protection Agency). 1999. *Biennial RCRA Hazardous Waste Report*. U.S. Environmental Protection Agency.

**Table 8.13-1
Summary of Anticipated Construction Waste Streams and Management Methods
(Page 1 of 2)**

Waste Stream	Anticipated Waste Stream Classification	Estimated Quantity	Estimated Frequency of Generation	Waste Management Method	
				On Site	Offsite Treatment
Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, mineral wool insulation	Nonhazardous solids	40 cubic yards	Weekly	Containerize, housekeeping	Recycle and/or Class III/II landfill disposal
Empty hazardous material containers	Hazardous solids	1 cubic yard	Weekly	Store for less than 90 days	Recycle and/or Class I/II landfill disposal
Spent welding materials	Hazardous solid	200 pounds	Monthly	Containerize	Dispose at Class I landfill
Waste oil filters	Hazardous solid	200 pounds	Monthly	Containerize	Dispose at Class I landfill
Used and waste lube oil during CT and ST lube oil flushes	Hazardous or nonhazardous liquids	55-gallon drums	230 drums over life of construction	Store for less than 90 days	Oil would be recycled
Oil rags, oil absorbent generated during normal construction activities excluding lube oil flushes	Hazardous solids	55-gallon drum	Monthly	Store for less than 90 days	Oily rags would be recycled. Class I landfill disposal for other solids
Solvents, used construction equipment lube oils, paint, adhesives	Hazardous liquids	200 US gallons	Monthly	Store for less than 90 days	Recycle or disposal at TSDF
Spent lead acid batteries	Hazardous solids	2 batteries	Yearly	Store for less than 1 year	Recycle
Spent alkaline batteries	Hazardous solids	60 batteries	Monthly	Store for less than 1 year	Recycle

**Table 8.13-1
Summary of Anticipated Construction Waste Streams and Management Methods
(Page 2 of 2)**

Waste Stream	Anticipated Waste Stream Classification	Estimated Quantity	Estimated Frequency of Generation	Waste Management Method	
				Onsite	Offsite Treatment
ST and pre-boiler piping cleaning waste, chelant	Hazardous or nonhazardous liquids	300,000 US gallons	Once before initial startup	Sample. Store hazardous portion for less than 90 days	Dispose of to TSDF
Waste oil from oil waste holding tank	Hazardous or nonhazardous liquids	20 US gallons	Monthly	Store for less than 90 days if hazardous	Oil would be recycled
Sanitary waste from potable chemical toilets and construction office holding tanks	Nonhazardous liquids	400 US gallons	Daily	Periodically pumped to tanker truck by licensed contractors	Removed from site by sanitary toilet contractor
Storm water from construction area	Nonhazardous liquids	716,000 US gallons	For a once in 2 year, 24 hour storm event	NPDES Stormwater program	Discharge to the storm water retention basin
Fluorescent, mercury vapor lamps	Hazardous solids	30	Yearly	Store for 1 year	Recycle
Hydrotest water	Hazardous or nonhazardous liquids	300,000 US gallons	Once before initial startup	Sample. If suitable for discharge, route to sedimentation/detention basin. If hazardous, store for less than 90 days.	If hazardous, dispose to TSDF

**Table 8.13-2
Landfills, TSDFs, and Transfer Stations
Proposed Colusa Generating Station**

Landfill/Transfer Station	Phone Number	Location	Class	Materials Accepted	Permitted Capacity	Annual Usage (cu yd)	Remaining Capacity (cu yd)	Estimated Closure Date	Approximate Distance from Site (in miles)	Comments
Yolo County Landfill	(530) 666-8852	44090 County Road 28H Woodland, CA 95695	Class III	Solid Class III only	25 million cubic yards	180,000 tons	16,434,000	2045	50	
Anderson Solid Waste	(530) 347-5236	18703 Cambridge Road Anderson, CA 96007	Class III	Solid	1,850 tons per day	90,000 tons	5,000,000	2040	95	
Hay Road Landfill	(707) 678-1492	6426 Hay Road Vacaville, CA 95687	II and III	Solid	1,200 tons per day (2,400 peak)	110,000 tons	23,376,000	2070	70	
Ostrom Road Sanitary Landfill (Norcal Waste)	(530) 682-6086	5900 Ostrom Road Wheatland, CA 95336	II	Solid	1,000 tons per day	208,000 tons	180 Acres (Out of 221)	2030	40	
Clean Harbors Buttonwillow Landfill	(661) 762-6200	2500 Lokern Road Buttonwillow, CA 93206	I	Solid and liquid ^a	11 million cubic yards	351,000	10,700,000	2030	330	
Clean Harbors Imperial County Landfill	(760) 344-9400	5295 Garvery Road Westmorland, CA 92281	I	Solid and liquid ^a	NA	NA	NA	NA	645	Not accepting waste at this time; working on new cells.
Chemical Waste Management Kettleman Hills Landfill	(559) 386-9711	35251 Old Skyline Road Kettleman City, CA 93239	I, II, III	Solid and liquid ^a	10.7 million cubic yards (hazardous)	1 million tons	16,000,000	2013	280	
Clean Harbors San Jose*	(408) 451-5000	1040 Commercial Street San Jose, CA 95112	TSDF/ recycle center	Solvents for fuel blending; solids and liquids	NA	NA	Unlimited	None	46	Handles all profiled wastes, mostly Class I.

Notes:

cu yd = cubic yards

NA = not available

TSDF = treatment, storage, and disposal facility

^a Liquid wastes require treatment/stabilization and solidification prior to landfilling

* Information based on previous 2001 AFC.

**Table 8.13-3
Recycling/Transfer Centers
Proposed Colusa Generating Station**

Recycling Center	Phone Number	Location	Class	Materials Accepted	Permitted Capacity	Annual Usage (cu yd)	Remaining Capacity (cu yd)	Estimated Closure Date	Approximate Distance from Site (in miles)	Comments
Maxwell Transfer Center*	(530) 438-2622	3852 Highway 99 Maxwell, CA 95955	Transfer Center	Class III	None	NA	None	None	17	
Waste Management*	(530) 458-4659	3281 Highway 99 W Corning, CA 96021	Recycle center	Paper, cardboard, metals, plastics	Unlimited	NA	Unlimited	None	60	Also operates Anderson Landfill
Clean Harbors San Jose	(408) 451-5000	1040 Commercial Street San Jose, CA 95112	TSDF/ recycle center	Solvents for fuel blending; solids and liquids	NA	NA	Unlimited	None	46	Handles all profiled wastes, mostly Class I
Clean Harbors in W. Sacramento	(916) 375-2611	3201 Evergreen Ave W. Sacramento, CA 95691	Transfer Franchise	Small Quantity Class I, II Profiled Wastes	NA	NA	NA	NA	67	Offices only (no recycling center)-refer to San Jose center

Notes:

cu yd = cubic yards

NA = not available

TSDF = treatment, storage, and disposal facility

* Information based on previous 2001 AFC.

**Table 8.13-4
Summary of Anticipated Operating Waste Streams and Management Methods
(Page 1 of 2)**

Waste Stream	Waste Stream Classification	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				Onsite	Offsite Treatment
Used hydraulic fluid and oils	Hazardous or non-hazardous liquids	Less than 5 US gallons	Daily	Store for less than 90 days	Oil and hydraulic fluid would be recycled
Spent lead acid batteries	Hazardous solids	2 batteries	Yearly	Store for less than 1 year	Recycled
Spent alkaline batteries	Hazardous solids	30 batteries	Monthly	Store for less than 1 year	Recycled
Spent catalyst (heavy metals)	Hazardous solids	120,000 lbs	Every 3 to 5 years	Removed to truck by licensed contractors	Recycled
Waste oil from oily water separator	Hazardous or non-hazardous liquids	800 US gallons	Yearly	Store for less than 90 days	Oil would be recycled
Oily rags, oil absorbent generated during normal operating and maintenance activities excluding lube oil flushes	Hazardous solids	One 55 gallon container	Monthly	Store for less than 90 days	Oily rags would be recycled Class I landfill disposal for other solids
CTG used air filters	Non-hazardous solids	2,100 filters	Every 3 years	Store for less than 90 days	Class III/II landfill disposal
CTG water wash	Hazardous or non-hazardous liquids	10,000 US gallons	Yearly	Sample. Store hazardous portion for less than 90 days	Dispose to a TSDF
HRSB Chemical Cleaning	Hazardous or non-hazardous liquids	420,000 US gallons	Every 10 Years	Sample. Store hazardous portion for less than 90 days	If hazardous, dispose to a TSDF

**Table 8.13-4
Summary of Anticipated Operating Waste Streams and Management Methods
(Page 2 of 2)**

Waste Stream	Waste Stream Classification	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
				Onsite	Offsite Treatment
Fluorescent, mercury vapor lamps	Hazardous solids	30	Yearly	Store for 1 year	Recycle
Sanitary wastewater	Non-hazardous liquids	1,500 US gallons	Daily	Solids pumped once every 3 years to tanker truck by licensed contractors	Discharge to onsite septic tank and leach field
Storm water	Non-hazardous liquids	716,000 US gallons	For a once in 2 year, 24 hour storm event	NPDES Stormwater program	Discharge to the storm water retention basin
Spent ion exchange resin	Non-hazardous solid	100 cubic feet per bottle	2 bottles once every 3 years	Store for less than 90 days	Class III/II landfill disposal
Salts from zero liquid discharge rotary drum	Non hazardous solids	200 lbs	Daily	Store for less than 90 days	Class III/II landfill disposal

Table 8.13-5 Applicable Waste Management Laws, Ordinances, Regulations, and Standards (Page 1 of 2)			
Laws, Ordinances, Regulations and Standards	Administering Agency	Applicability	AFC Section
Federal			
RCRA Subtitle D (42 USC 6941-6949a)	U.S. EPA, Region IX and Cal-EPA; DTSC	Controls solid waste collectors, recyclers, and depositors.	Solid waste will be collected and disposed of by a collection company in conformance with RCRA Subtitle D. Project will meet standards for recordkeeping, labeling, notification, manifesting, and reporting. Section 8.13.5
RCRA Subtitle C (42 USC 6921-6939b)	U.S. EPA, Region IX	Controls generation, storage, transportation, treatment, and disposal of hazardous waste.	Hazardous waste will be managed in conformance with RCRA Subtitle C. Sections 8.13.2 and 8.13.5
49 CFR 172, 173, and 179	California Highway Patrol and U.S. Department of Transportation	Controls labeling, placards, and packaging for hazardous waste shipments.	The proposed project will use required placards, packaging, and labels for hazardous waste shipments. Section 8.13.5
Clean Water Act (CWA)	SWRCB; RWQCB Central Valley Region	Controls discharge of wastewater to the surface waters of the U.S.	Discharge will be in accordance with CWA NPDES permit. Section 8.13.7
State of California			
California Integrated Waste Management Act (CIWMA), PRC 40000, et seq.	Colusa County Department of Environmental Health	Controls solid waste collectors, recyclers, and depositors. Hazardous wastes are not to be disposed of with non-hazardous wastes.	Solid waste will be collected and disposed of by a collection company in conformance with the CIWMA. Sections 8.13.4.1 and 8.13.4.2
Hazardous Materials Release Response Plans and Inventory, CA Health and Safety Code 25500-25541	DTSC; Colusa County Department of Environmental Health	Requires business plan for releases of hazardous materials.	The proposed project will ensure that a business plan consistent with the requirements of Section 25503 is prepared. Section 8.13.5.3

**Table 8.13-5
Applicable Waste Management Laws, Ordinances, Regulations, and Standards
(Page 2 of 2)**

Laws, Ordinances, Regulations and Standards	Administering Agency	Applicability	AFC Section														
Porter-Cologne Water Quality Control Act	SWRCB; RWQCB Central Valley Region	Controls discharge of wastewater to the surface and groundwaters of California.	Discharge will be in accordance with CWA/Porter-Cologne. Section 8.13.5.2														
Hazardous Waste Control Law (HWCL), CA Health and Safety Code 25100 et seq.; 22 CCR 66001 et seq.	DTSC; Colusa County Department of Environmental Health	Controls storage, treatment, and disposal of hazardous waste.	Hazardous waste will be handled by contractors in conformance with HWCL. Sections 8.13.4.1 and 8.13.4.2														
Hazardous Waste Source Reduction and Management Review, 22 CCR 67100	DTSC; Colusa County Department of Environmental Health	Requires source reduction evaluation review and plan every 4 years.	The proposed project will prepare a plan for reducing the generation of hazardous waste and prepare associated performance reports. Section 8.13.5														
22 CCR 66260-66270	DTSC; Colusa County Department of Environmental Health	Regulates generators of hazardous waste.	The proposed project will obtain generator identification number and comply with all generator requirements. Section 8.13.4.2														
Local																	
Colusa County Municipal Code	Colusa County Office of Emergency Services	Controls storage, treatment, and disposal of hazardous waste.	The proposed project will prepare a Hazardous Material Business Plan for the storage of hazardous materials and wastes. Section 8.13.5														
None	Maxwell Volunteer Fire Department; Colusa County Sheriff's Department	Emergency spills	Will contain and clean emergency spills. Section 8.13.5.3														
<p>Notes:</p> <table border="0"> <tr> <td>AFC = Application for Certification</td> <td>LORS = laws, ordinances, regulations, and standards</td> </tr> <tr> <td>Cal-EPA = California Environmental Protection Agency</td> <td>NPDES = National Pollutant Discharge Elimination System</td> </tr> <tr> <td>CCR = California Code of Regulations</td> <td>RCRA = Resource Conservation and Recovery Act</td> </tr> <tr> <td>CFR = Code of Federal Regulations</td> <td>RWQCB = Regional Water Quality Control Board</td> </tr> <tr> <td>CWA = Clean Water Act</td> <td>SWRCB = State Water Resources Control Board</td> </tr> <tr> <td>DTSC = Department of Toxic Substances Control</td> <td>USC = U.S. Code</td> </tr> <tr> <td>HWCL = Hazardous Waste Control Law</td> <td>U.S. EPA = U.S. Environmental Protection Agency</td> </tr> </table>				AFC = Application for Certification	LORS = laws, ordinances, regulations, and standards	Cal-EPA = California Environmental Protection Agency	NPDES = National Pollutant Discharge Elimination System	CCR = California Code of Regulations	RCRA = Resource Conservation and Recovery Act	CFR = Code of Federal Regulations	RWQCB = Regional Water Quality Control Board	CWA = Clean Water Act	SWRCB = State Water Resources Control Board	DTSC = Department of Toxic Substances Control	USC = U.S. Code	HWCL = Hazardous Waste Control Law	U.S. EPA = U.S. Environmental Protection Agency
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