

SECTION 8.12

Hazardous Materials and Waste

8.12 Hazardous Materials and Waste

8.12.1 Introduction

This section describes the proposed hazardous materials and waste management system for the proposed Modesto Irrigation District (MID) Electric Generation Station (MEGS) Project (Project), a new nominal 95-MW simple-cycle power plant in the City of Ripon (City), California (State). MEGS will be located at the intersection of the South Stockton Avenue and Doak Boulevard extensions. The local, State, and federal laws, ordinances, regulations, and standards are described in Section 8.12.2. The Project setting, Section 8.12.3, describes the hazardous materials that will be used at MEGS and the wastes that will be generated. Section 8.12.4 presents a checklist of possible environmental impacts related to hazardous materials use and waste generation and details the specific impacts posed by the proposed Project. Regulatory agency contacts are identified in Section 8.12.5.

8.12.2 Laws, Ordinances, Regulations, and Standards

The storage and use of hazardous materials and the generation of wastes at MEGS are governed by federal, State, and local laws, ordinances, regulations and standards (LORS). The applicable LORS are summarized in Table 8.12-1.

8.12.3 Setting

The proposed Project site is on the northwest corner of the south Stockton Avenue and Doak Boulevard extensions, in south central Ripon. The MEGS facility will occupy a total of approximately 8 acres within a 12.25-acre area for which MID has obtained a purchase option. The plant would occupy approximately 6 acres near the northern side of the site. An additional 2 acres would be needed for primary and emergency access to the plant and transmission lines. The remaining 4.25 acres would be used for equipment laydown and parking during construction. After construction, the 4.25 acres would be available for sale, equipment storage, or future development as determined by the MID Board of Directors. The Project site is immediately adjacent to industrial properties such as Nulaid Foods, Inc. Currently, the proposed Project site is undeveloped. Existing uses within the immediate area of the Project site include industrial uses.

8.12.3.1 Hazardous Materials

A list of hazardous materials to be used at the MEGS site is presented in Table 8.12-2.

The proposed Project will include the installation of one new above-ground storage tank for aqueous ammonia. The combustion turbines will also contain hydraulic and lubricating oils. The Project will store small amounts of various water treatment chemicals in portable containers.

TABLE 8.12-1
Applicable Laws, Ordinances, Regulations, and Standards

| LORS | Applicability |
|---|--|
| Federal | |
| Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendment and Reauthorization Act (CERCLA/SARA) Section 302 | Requires certain planning activities when Extremely Hazardous Substances (EHS) are present in excess of their Threshold Planning Quantity (TPQ). MEGS will have sulfuric acid in excess of the TPQ of 1,000 pounds. |
| CERCLA/SARA Section 304 | Requires notification when there is a release of hazardous material in excess of its Reportable Quantity (RQ). |
| CERCLA/SARA Section 311 | Requires a Material Safety Data Sheet (MSDS) for every hazardous material to be kept onsite and submitted to the State Emergency Response Commission (SERC), Local Emergency Planning Committee (LEPC), and the local fire department. |
| CERCLA/SARA Section 313 | Requires annual reporting of releases of hazardous materials. |
| Clean Air Act (CAA) | Requires a Risk Management Plan (RMP) if listed hazardous materials are stored at or above a Threshold Quantity (TQ). |
| Clean Water Act (CWA) | Requires preparation of a Spill Prevention Control and Countermeasures (SPCC) plan if oil is stored above certain quantities. |
| CWA | Controls discharge of wastewater to the surface waters of the U.S. |
| Resource Conservation and Recovery Act (RCRA) Subtitle C | Controls storage, treatment, and disposal of hazardous waste. |
| State | |
| Hazardous Materials Release Response Plans and Inventory Act (Health and Safety Code, Section 25500, et seq.) | Requires preparation of a Hazardous Materials Business Plan (HMBP) if hazardous materials are handled or stored in excess of threshold quantities (California Attorney General, 1994). ^a |
| California Accidental Release Prevention (CalARP) Program. Health and Safety Code, Section 25531 through 25543.4 | Requires registration with local Certified Unified Program Agency (CUPA) or lead agency and preparation of an RMP if acutely hazardous materials are handled or stored in excess of TPQs. |
| Aboveground Petroleum Storage Act | Requires entities that store petroleum in aboveground storage tanks (AST) in excess of certain quantities to prepare an SPCC Plan. |
| Safe Drinking Water and Toxics Enforcement Act (Proposition 65) | Requires warning to persons exposed to a list of carcinogenic and reproductive toxins and protection of drinking water from same toxins. ^b |
| CA Hazardous Waste Control Law (HWCL) | Controls storage, treatment, and disposal of hazardous waste. |
| Porter-Cologne Water Quality Control Act | Controls discharge of wastewater to the surface and groundwaters of California. Will apply only if the facility discharges wastewater to surface or groundwater. |
| Local | |
| Uniform Fire Code | Controls storage of hazardous materials and wastes and the use and storage of flammable/combustible liquids. |
| City of Ripon Municipal Code, Title 13 | Establishes requirements for discharge of pollutants into City of Ripon's wastewater collection and treatment system. |

^a According to a 1994 opinion from the California Attorney General, cities, counties, and special districts are not "businesses" and are therefore not subject to the requirement to establish and implement a "business plan" for emergency response to a release of hazardous materials. See Appendix 8.12A for text of opinion.

^b Section 25249.11(b) of the California Health and Safety Code clearly states that a "person in the course of doing business" does not include any city, county, or district. Therefore, MID is not subject to the requirements of Prop 65. See Appendix 8.12A for text of Health and Safety Code section.

TABLE 8.12-2
Hazardous Materials—MEGS

| Material Name | Chemical Composition | Use | Quantity | Storage Location |
|---|--|--|-----------------|---|
| Aqueous ammonia (29 percent solution) | Ammonium hydroxide | Control nitrous oxide (NO _x) emissions through selective catalytic reduction (SCR) | 10,000 gal. | West of and adjacent to the gas compressors |
| Cleaning chemicals/detergents | Various | Periodic cleaning | 10 gal. | Water treatment building/service building |
| Laboratory reagents (liquid) | Various | Water/wastewater laboratory analysis | 10 gal. | Water treatment building |
| Laboratory reagents (solid) | Various | Laboratory analysis | 50 lb. | Laboratory |
| Synthetic lubrication oil | Oil | Lubricate rotating equipment (e.g., combustion turbine bearings) | 280 gal. | Contained within equipment |
| Mineral lubrication oil | Oil | Lubricate rotating equipment (e.g., generator bearings) | 782 gal. | Contained within equipment |
| Mineral insulating oil | Oil | Transformers | 10,600 gal. | Contained within GSU and auxiliary transformers |
| Scale/corrosion inhibitor (NALCO 23288) | (Various NALCO ingredients) | Cooling tower scale/corrosion inhibitor | 200 gal. | Near cooling tower |
| Sodium bromide (NALCO STABREX ST40) | Sodium bromide | Cooling tower biocide | 200 gal. | Near cooling tower |
| Sodium hydroxide | Sodium hydroxide (50 percent) | Reverse osmosis equipment scale protection | 200 gal. | Water treatment building |
| Anti-scalant | Anti-scalant NALCO Chemical | Reverse osmosis equipment scale protection | 200 gal. | Water treatment building |
| Lime | Calcium hydroxide | Lime softening system | 35,000 lbs. | Outdoor silo near water treatment building |
| Settling acid polymer (Percol 155) | Sodium acrylate and acrylamide polymer composite | Lime softening system | 50 gal. | Water treatment building |
| Sulfuric acid | Sulfuric acid (93 percent) | Lime softening system and cooling tower water pH control | 400 gal. | Water treatment building and near cooling tower |

8.12.3.2 Waste Generation

A summary of wastes produced at MEGS and the manner in which they will be handled is presented in Table 8.12-3.

TABLE 8.12-3
Waste Management Methods

| Source of Waste | Waste Composition | Quantity | Disposal Method |
|------------------------------------|---|------------------------------|--|
| Air Pollution Control Devices | Spent SCR and CO Catalyst | Every few years | Recycled to equipment manufacturer |
| Chemical Feed and Sampling Systems | No waste routinely generated; occasional spills only | No waste routinely generated | Spills pumped from secondary containment into container and reclaimed or disposed of offsite |
| Construction Waste | Wood, metal, concrete, etc. | 0.5 cubic yards per month | Transported to offsite landfill |
| Cooling Water | Blowdown | 32 gpm | City sewer |
| Clarifier Unit | Sludge (water, inert lime, calcium carbonate, magnesium hydroxide, and silicon dioxide) | 1.8 cubic yards per day | Transported to offsite landfill |
| Electrical Transformers | Waste oil | No waste routinely generated | Pumped from transformer to 55-gallon drum |
| Lubricating Oils | Waste oil | No waste routinely generated | Pumped from equipment to 55-gallon drum |
| Fuel Gas System | Blowdown oils | 30 gal/month | Blowdown from filters flows to oily/wastewater separator; oil pumped from separator into 55-gal drums and sent for recycling |
| Closed Cooling Systems | Propylene glycol | 55 gal/year | Pumped from closed loop cooling system to 55-gal drums and sent for recycling |
| Municipal Solid Waste | Paper, food, plastic, etc. | 20 cubic yards per month | Transported to offsite landfill |
| Water Plant | RO reject water | 50 gpm | Discharged to plant sump which discharges to City sewer |
| Wastewater System | Process drains, miscellaneous floor drains | 75 gpm | Discharged to plant sump, which discharges to City sewer |

8.12.4 Impacts

8.12.4.1 Environmental Checklist

The checklist in Table 8.12-4 is used by the California Energy Commission (CEC) in its assessment of potential impacts.

TABLE 8.12-4
CEC Hazardous Materials and Waste Impact Checklist

| | Potentially Significant Impact | Less than Significant with Mitigation | Less than Significant | No Impact |
|--|--------------------------------|---------------------------------------|-----------------------|-----------|
| HAZARDOUS MATERIALS AND WASTE—Would the Project: | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport or use of hazardous materials? | | X | | |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | | X | | |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | | | | X |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | | | | X |
| e) Result in a safety hazard for people residing or working in the Project area if located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport? | | | | X |
| f) Result in a safety hazard for people residing or working in the Project area if located within the vicinity of a private airstrip? | | | | X |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | | X | | |
| h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | | | | X |

8.12.4.2 Discussion of Impacts

Hazardous Materials Impacts

The proposed Project will have a less-than-significant impact on the public or the environment through the routine transport and use of hazardous materials, because most of these materials are already in use at other facilities in the area and are consistently transported without incident. Transport of hazardous materials will be done in vehicles that have been designed for such transport to minimize a release, should a transportation accident occur. Facilities in the vicinity of the proposed Project that use hazardous materials include: Nulaid Foods, Inc. at 200 West 5th; Ripon Cogeneration, Inc. at 944 S. Stockton; Fox River Paper Company at 942 S. Stockton; B & L Neeley, Inc. at 737 S. Stockton; and Ripon Manufacturing Company at 652 S. Stockton. The Ripon Cogeneration facility uses anhydrous ammonia in an SCR system for air emissions control (Tractebel Electricity & Gas International, 1998). In addition, the Ripon Cogeneration facility has an inlet air cooling system with a compressor-type chiller that uses ammonia (Gas Turbine World, 1998).

Storage capacity for 200 gallons of sodium bromide (portable tank) will be installed near the two pre-engineered, pre-fabricated cooling towers. Sulfuric acid will be stored near the cooling tower and at the water treatment building in 200-gallon totes.

There will be an aqueous ammonia storage facility constructed at the site. The ammonia tank will be connected to the SCR units. The piping will be made of materials and will contain safety features that will reduce the potential for ammonia releases at the site. Therefore, there will be no significant increase in risk to the public or the environment.

The Project will use approximately 720 gallons of 29 percent aqueous ammonia per day, once operational. It is anticipated that the ammonia will be delivered in 26 deliveries per year. This will not pose a substantial increase in risk of releases from use or transport of hazardous materials.

All hazardous materials will be stored in containers or tanks approved by the U.S. Department of Transportation (DOT) and the local fire department. Incompatible materials will be stored separately. Although MID is not subject to California requirements for preparing an emergency response plan, a hazardous materials inventory for the MEGS facility will be prepared and submitted to San Joaquin County voluntarily prior to startup of operations. Any applicable permits and plans associated with hazardous materials use or waste generation at the MEGS site will be in place prior to operation of the facility. Emergency response procedures will be prepared and maintained at the site.

The risk of the proposed Project contributing to wildland fires is very low, due to the industrial nature of the area surrounding the site.

There are no schools or day-care centers located within one-quarter mile of MEGS. The schools and day-care centers located within 1 mile of the site are: Ripon Christian Schools at 435 Maple Avenue, which is located 0.7 miles from the Project site; Ripon Elementary School at 509 W. Main Street; and Ripon Day Care Center at 734 W. Main Street, also approximately 0.7 miles from the site; Almost Home Day Care Center at 733 2nd Street, located approximately 0.7 miles from the site; Ripon High School at 304 N. Acacia Avenue, which is 0.8 miles from the site; Ripon Elementary School and Stone Soup Child Care at 415 Oregon Street (0.9 miles); Christian Elementary School at 217 Maple Avenue (1.0 mile); and Ripon Christian Junior

School at 217 Maple Avenue (1.0 mile). Weston Elementary School is about 1.4 miles from the site at 1660 Stanley Drive.

The proposed MEGS Project is located approximately 12 miles northwest of the Modesto Airport and 13 miles south of Stockton Metropolitan Airport. Therefore, no resulting safety hazard would be present to people residing or working in the Project area.

Waste Management Impacts

Methods that will be used to handle waste generated by the proposed Project are described above in Table 8.12-3. In addition, during construction activities there will be other wastes generated on a temporary basis, such as solvents, adhesives, and paints. These wastes will be handled appropriately by the construction contractors. Any hazardous waste produced will be transported by a licensed hazardous waste transporter and will be disposed of by a licensed hazardous waste disposal facility. Therefore, the impacts from waste management at the proposed Project site will be minimal.

A Phase I Environmental Site Assessment of the proposed Project site was performed in 2002 by the Denali Group. Denali did not observe evidence of recognized existing environmental issues at the Site as a result of past or present land use practices. Denali did not observe indicators of the use, generation, and storage of hazardous substances at the Site. Denali did not observe evidence of release of hazardous substances at the Site. The results of the assessment of the onsite and offsite actual and/or potential contamination are summarized below.

Onsite Summary

Denali did not observe existing environmental issues at the Site as a result of past or present land use practices. None of the available records reviewed by Denali document or suggest that a release of a hazardous substance or hazardous materials has occurred at the Site. Usage of the pesticide DDT with orchard crop has historically occurred in the County. The standard Waste Management condition of certification pertaining to the availability of a geologist or registered professional engineer during soil excavation or grading activities should address this concern.

Offsite Summary

The Phase I Environmental Site Assessment did not reveal evidence of recognized environmental conditions in connection with the offsite properties. Based on information developed during this assessment, the offsite locations reviewed by Denali have been remedied and granted case closure or are too distant and not believed to pose an environmental threat to the Site.

A copy of the Phase I Environmental Site Assessment is included in Appendix 8.12B.

Therefore, development of the site should not cause any disturbance of contaminated soils or other wastes.

8.12.4.3 Cumulative Impacts

It is not anticipated that the proposed MEGS Project will result in significant cumulative impacts that could adversely affect public health and safety or the environment. Table 8.12-5 presents the anticipated frequency of hazardous materials deliveries for MEGS.

TABLE 8.12-5
Hazardous Materials Deliveries

| Hazardous Material | Frequency of Deliveries | Quantity per Load | Point of Origin | Transport Method |
|----------------------------|-------------------------|---------------------------------|-----------------|------------------|
| 29-percent aqueous ammonia | Two loads per month | 6,000 gallons | Various | Highway |
| 50-percent caustic | Once per Month | 200 gallons | Various | Highway |
| 93-percent sulfuric acid | Once per month | 400 gallons | Various | Highway |
| Lime | Once every 45 days | 35,000 lbs. | Various | Highway |
| Settling acid | Every other month | 50 gallons | Various | Highway |
| Cooling tower chemicals | Once per month | Anywhere from 50 to 200 gallons | Various | Highway |

The primary potential cumulative impact from the use and storage of hazardous materials would be a simultaneous release from two or more sites of a chemical that will migrate offsite. Potentially, the two or more migrating releases could combine, thereby posing a greater threat to the offsite population than a single release by any single site. Hazardous materials that do not migrate, such as sulfuric acid, will not present a potential cumulative impact. The hazardous material with the most potential to migrate offsite from the proposed Project site is ammonia. Pure ammonia is a volatile, acutely hazardous chemical that is stored under pressure as a liquid and becomes toxic gas if released. The ammonia to be used for the proposed Project is “aqueous ammonia” – a solution of ammonia (29 percent) and water (71 percent). If the aqueous ammonia were to leak or spill, the ammonia would gradually evaporate as a gas to the atmosphere. At high concentrations, ammonia gas causes severe impacts, even death, at concentrations above 2,500 parts per million (ppm). However, the odor threshold of ammonia is only about 5 ppm and irritation of the nose and throat occur at 30 to 50 ppm. Therefore, any releases will be readily detectable at concentrations well below severe hazard levels. Facility workers will be provided with safety equipment and trained in hazardous materials handling and emergency response.

8.12.5 Involved Agencies and Agency Contacts

Table 8.12-6 lists the local agencies involved in hazardous materials management for the Project and a contact person at each agency. The San Joaquin County Environmental Health Department is the CUPA and administers the Hazardous Waste Generator Program. The San Joaquin County Office of Emergency Services is a Participating Agency (PA) to the CUPA. The Office of Emergency Services administers the Hazardous Materials Release Response Plan and Inventory Program (i.e., the Hazardous Materials Business Plan program) and the Accidental Release Prevention Program (Cal-ARP).

TABLE 8.12-6
List of Hazardous Material Agency Contacts for the Proposed Project

| Agency | Name/Title | Address | Phone Number |
|---|--|---|---------------------|
| San Joaquin County Environmental Health Department | Doug Wilson, Supervisor | 304 E. Weber Avenue Third Floor Stockton, CA 95202 | (209) 468-3446 |
| San Joaquin County Office of Emergency Services | Dennis Fields, Hazardous Materials Coordinator | Courthouse, Room 610 222 E. Weber Ave. Stockton, CA 95202 | (209) 468-3969 |
| Ripon Consolidated Fire Department | Dennis Bitters, Assistant Fire Chief | 142 S. Stockton Avenue Ripon, CA 95366 | (209) 599-4209 |

8.12.6 References

California Attorney General. 1994. *Attorney General's Opinions, Volume 77*. 1994. Opinion No. 94-602. October 6.

City of Ripon. 2002. http://cityofripon.org/Safety/pub_index.htm.

County of San Joaquin. 2002. <http://www.co.san-joaquin.ca.us/EHD>.

Gas Turbine World, 1998. <http://www.kaceenergy.com/ripon.htm>.

Tractebel Electricity & Gas International. 1998. <http://tractebelusa.com/f-facil.html>.

U.S. Environmental Protection Agency (USEPA). 2002. ENVIROFACTS Database. <http://www.epa.gov>.