

5.5 Hazardous Materials Handling

This section evaluates the potential effects on human health and the environment from the storage and use of hazardous materials in conjunction with the proposed Lodi Energy Center (LEC). Section 5.5.1 describes the existing environment that may be affected, and Section 5.5.2 identifies potential impacts on the environment and on human health from site development. Section 5.5.3 addresses potential cumulative effects, Section 5.5.4 presents proposed mitigation measures, and Section 5.5.5 presents the laws, ordinances, regulations, and standards (LORS) applicable to hazardous materials. Section 5.5.6 describes the agencies involved and provides agency contacts. Section 5.5.7 describes permits and plans required and the permit schedule. Section 5.5.8 provides the references used to develop this section. Hazardous waste management, including handling of potentially contaminated soil and groundwater, is addressed in Section 5.14, Waste Management.

5.5.1 Affected Environment

5.5.1.1 Local Land Use

Land use in the area surrounding the project site (discussed in detail in Section 5.6, Land Use) is primarily rural agricultural. Sensitive receptors within a 3-mile radius of the project site include 15 daycare centers (mainly small, in-home locations), and two schools. These receptors are shown on Figure 5.9-1 in Section 5.9, Public Health. No hospitals, long-term health care facilities, or nursing homes are located within 3 miles of the project site. The nearest sensitive receptor is a small-capacity in-home daycare center approximately 2.1 miles south of the site. The nearest school is Julia Morgan Elementary, approximately 2.9 miles south-southeast of the project site. The nearest hospital is Lodi Memorial Hospital at 975 S. Fairmont Avenue, which is approximately 8 miles northeast of the site.

5.5.1.2 LEC Hazardous Materials Use

The LEC will use hazardous materials both during construction and during project operation. Most of the hazardous materials that will be used for the project are required for facility operations and maintenance, such as lubrication of equipment, or will be contained within transformers and electrical switches. The project will comply with applicable laws and regulations for the storage of these materials to minimize the potential for a release of hazardous materials and will conduct emergency response planning to address public health concerns regarding hazardous materials storage and use. The following sections describe this use, followed by tables detailing the hazardous materials used, their characteristics, the quantities of use, and use locations.

5.5.1.2.1 Construction Phase

The quantities of hazardous materials that will be on site during construction are small relative to the quantities used during operation. They will be limited to gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. There are no feasible alternatives to vehicle fuels and oils for operating construction equipment. The types of paint required are dictated by the types of equipment and structures that must be coated and by the manufacturers' requirements for coating.

Regulated substances, as defined in California Health and Safety Code, Section 25531, will not be used during construction of the project. Therefore, no discussion of regulated substances storage or handling is included in this section.

5.5.1.2.2 Operations Phase

Storage locations for the hazardous materials that will be used during operation are described in Table 5.5-1. Table 5.5-2 presents information about these materials, including trade names, chemical names, Chemical Abstract Service (CAS) numbers, maximum quantities onsite, reportable quantities (RQ), California Accidental Release Program (CalARP) threshold planning quantities (TPQs), and status as a Proposition 65 chemical (a chemical known to be carcinogenic or cause reproductive problems in humans). Health hazards and flammability data are summarized for these materials in Table 5.5-3, which also contains information on incompatible chemicals (e.g., sodium hypochlorite and ammonia).

Most of the hazardous substances that will be used by the project are required for facility maintenance and lubrication of equipment, or will be contained within transformers and electrical switches. Two regulated substances will be used for the project, anhydrous ammonia and hydrogen; toxicity characteristics and the exposure level criteria for these regulated substances are included in Table 5.5-4.

5.5.2 Environmental Analysis

Construction and operation of the project will involve the use of various hazardous materials and two regulated substances. The use of these materials and their potential to cause adverse environmental and human health effects are discussed in this section.

5.5.2.1 Significance Criteria

The project could have a significant effect on the environment in terms of hazardous materials handling if it would do the following (CEQA Guidelines Section 15002[g], Appendix G):

- Create a significant hazard to the public or the environment through the routine transport or use of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

5.5.2.2 Transportation of Hazardous Materials

Project operation will require regular transportation of hazardous materials to the project site (see also Section 5.12, Traffic and Transportation). Transportation of hazardous materials will comply with all California Department of Transportation (Caltrans), U.S. Environmental Protection Agency (EPA), California Department of Toxic Substances Control (DTSC), California Highway Patrol (CHP), and California State Fire Marshal regulations. Anhydrous ammonia, a regulated substance, will be delivered to the facility and transported in accordance with Vehicle Code Section 32100.5, which regulates the transportation of hazardous materials that pose an inhalation hazard.

TABLE 5.5-1
Use and Location of Hazardous Materials

Chemical	Use	Quantity (gallons/lbs)	Storage Location	State	Type of Storage
Anhydrous Ammonia (99% NH ₃) ^a	Control oxides of nitrogen (NO _x) emissions through selective catalytic reduction	10,200 gallons ^b	Onsite storage tank (shared with existing STIG plant)	Liquid	Continuously on site
Antifoam NALCO 71-D5	Cooling Tower foam control	55 gallons	Cooling tower chemical berm	Liquid	Continuously on site
Anti-scalant NALCO PC-191T	Prevent scale in reverse osmosis membranes	400 gallons	Portable Storage Tote – Water Treatment Building	Liquid	Continuously on site
Anti-scalant NALCO PC-510T ^c	Prevent scale in reverse osmosis membranes	400 gallons	Portable Storage Tote – Water Treatment Building	Liquid	Continuously on site
Biocide NALCO 3980 ^c	Injection well biological control	55 gallons	Water Treatment Building	Liquid	Continuously on site
Biocide NALCO 73551 ^c	Cooling Tower bio penetrant	400 gallons	Water Treatment Building	Liquid	Continuously on site
Biocide NALCO 7330	Cooling Water Bio Control	400 gallons (totes)	Cooling Tower Chemical Feed Building	Liquid	Continuously on site
Caustic NALCO 8735 ^c	Boiler makeup water pH control	25 gallons	Boiler Chemical Injection Skid	Liquid	Continuously on site
Citric Acid ^c	Non-chemical cleaning of HRSG interior piping	5,000 gallons	Pallet supported chemical storage bags in protected temporary storage location on site.	Solid Powder	Initial startup and periodically on site
Cleaning chemicals/detergents (including PC 98, PC-11, and PC 56) ^c	Periodic cleaning of combustion turbine	1,000 gallons	Portable Storage Totes/Drums –Water Treatment Building	Liquid	Continuously on site
Coagulant NALCO 8108	Cold lime softener turbidity removal	800 gallons	Cold lime softener	Liquid	Continuously on site

TABLE 5.5-1
Use and Location of Hazardous Materials

Chemical	Use	Quantity (gallons/lbs)	Storage Location	State	Type of Storage
Corrosion Control NALCO 3DT-184	Cooling Water Corrosion Inhibitor	1000 gallons	Cooling Tower Chemical Feed Building	Liquid	Continuously on site
Diesel No. 2 ^c	Small equipment refueling	55 gallons	Onsite 55 gallon drums	Liquid	Continuously on site
Dispersant NALCO 3DT-191	Cooling Water Mineral Dispersant	1000 gallons	Cooling Tower Chemical Feed Building	Liquid	Continuously on site
Flocculant NALCO 7768	Cold lime softener turbidity removal	800 gallons	Cold lime softener	Liquid	Continuously on site
Glutamine ^c	Injection well biological control	55 gallons	Water Treatment Building	Liquid	Continuously on site
Hydraulic Oil ^c	High-pressure combustion turbine starting system, turbine control valve actuators	700 gallons	Onsite 55 gallon drums	Liquid	Continuously on site
Laboratory reagents ^c	Water/wastewater laboratory analysis	10 gallons	Laboratory chemical storage cabinets (stored in original chemical storage containers/bags)	Liquid and Granular Solid	Continuously on site
Lime	Cold lime softener hardness removal	2,000 lb	Cold lime softener	Solid	Continuously on site
Lithium Bromide ^c	Chiller Refrigerant	75 gallons	Water Treatment Building	Liquid	Continuously on site
Lubrication Oil ^c	Lubricate rotating equipment (e.g., gas turbine and steam turbine bearings)	1,500 gallons	Lubricating oil reservoirs and 55 gallon drums	Liquid	Continuously on site
Magnesium Oxide	Cold lime softener silica removal	2,000 lb	Cold lime softener	Solid	Continuously on site
Mineral Insulating Oil ^c	Transformers/switch yard	3,500 gallons	Transformer tanks and 55 gallon drums	Liquid	Continuously on site

TABLE 5.5-1
Use and Location of Hazardous Materials

Chemical	Use	Quantity (gallons/lbs)	Storage Location	State	Type of Storage
Oxygen Scavenger (e.g., NALCO ELIMIN-OX) ^c	Oxygen scavenger for boiler water conditioning	400 gallons	Boiler Chemical Feed Building	Liquid	Continuously on site
Amine NALCO 5711	Boiler feedwater pH control	400 gallons	Boiler Chemical Feed Building	Liquid	Continuously on site
SF6	230 KV breaker insulating medium	200 lb (500 ft ³)	Switchyard	Gas	Continuously on site
Sodium Bisulfite (NaHSO ₃) ^c NALCO PC-7408	Reduce oxidizers in reverse osmosis feed to protect the RO membranes	400 gallons	Cooling Tower Chemical Feed Building	Liquid	Continuously on site
Sodium Hydroxide (NaOH) ^c	Convert CO ₂ to alkalinity for removal by reverse osmosis	10 gallons	Cooling Tower Chemical Feed Building	Liquid	Continuously on site
Sodium Hypochlorite ^c	Cooling tower biological control	1,500 gallons	Cooling Tower Chemical Feed Building	Liquid	Continuously on site
Sodium Nitrite NALCO 2536 Plus	Closed & chilled water loop corrosion inhibitor	55 gallons	Water Treatment Building	Solid	Continuously on site
Sulfur Hexafluoride ^c	230 kV breaker insulating medium	200 lb (500 ft ³)	Switchyard	Gas	Continuously on site
Sulfuric Acid (93%) ^c	Cooling tower pH control	3,000 gallons	Cooling Tower Chemical Feed skid	Liquid	Continuously on site
NALCO BT3000	Boiler water pH control	400 gallons	Boiler Chemical Feed Building	Liquid	Continuously on site
Acetylene ^c	Welding gas	540 ft ³	Maintenance / Warehouse Building	Gas	Continuously on site
Hydrogen	Steam turbine generator cooling	20,000 ft ³	Pressurized bottles	Gas	Continuously on site

TABLE 5.5-1
Use and Location of Hazardous Materials

Chemical	Use	Quantity (gallons/lbs)	Storage Location	State	Type of Storage
Oxygen ^c	Welding gas	540 ft ³	Maintenance / Warehouse Building	Gas	Continuously on site
Propane ^c	Torch gas	200 ft ³	Maintenance / Warehouse Building	Gas	Continuously on site
EPA Protocol Gases ^c	Calibration gases	1,000 ft ³	CEMS Enclosure	Gas	Continuously on site
Cleaning Chemicals ^c	Cleaning	Varies (less than 25 gallons liquids or 100 lbs solids for each chemical)	Admin / Control Building, Maintenance / Warehouse Building	Liquid or Solid	Continuously on site
Paint ^c	Touchup of painted surfaces	Varies (less than 25 gallons liquids or 100 lbs solids for each type)	Maintenance / Warehouse Building	Liquid	Continuously on site

^aThe LEC plant will tie into the existing anhydrous ammonia tank currently in place at the STIG plant. A new ammonia tank will not be built for the LEC facility.

^bExisting ammonia tank capacity is 12,000 gallons; however, the tank is only filled to 85% of its capacity, or 10,200 gallons.

^cChemical currently in use at STIG to be used by both STIG and LEC facilities.

TABLE 5.5-2
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ ^a	RQ of Material as Used Onsite ^b	EHS TPQ ^c	Regulated Substance TQ ^d	Prop 65
Anhydrous Ammonia	Anhydrous Ammonia	7664-41-7 (NH ₃)	10,200 ⁹ gallons	100 lb	100 lb	500 lb	10,000 lb	No
Antifoam NALCO 71-D5	Straight Run Middle Distillate (60-100%)	64741-44-2	55 gallons	e	e	e	e	No
	Polypropylene Glycol (5-10%)	25322-69-4		e	e	e	e	No
	Aliphatic hydrocarbon (5-10%)	Proprietary		e	e	e	e	No
	Paraffin Wax (1-5%)	8002-74-2		e	e	e	e	No
	Oxyalkylate (1-5%)	Proprietary		e	e	e	e	No
Anti-scalant NALCO PC191T	Anti-scalant	Various	400 gallons	e	e	e	e	No
Anti-scalant NALCO PC510T	None	None	400 gallons	e	e	e	e	No
Biocide NALCO 3980	5-Chloro-2-Methyl-4-Isothiazolin-3-one (1-5%)	26172-55-4	55 gallons	e	e	e	e	No
	2-Methyl-4-Isothiazolin-3-one (0.1-1%)	2682-20-4		e	e	e	e	No
	Magnesium Nitrate (1-5%)	10377-60-3		e	e	e	e	No
Biocide NALCO 73551	None	None	400 gallons	e	e	e	e	No
Biocide NALCO 7330	5-Chloro-2-Methyl-4-Isothiazolin-3-one (1-5%)	26172-55-4	400 gallons	e	e	e	e	No
	2-Methyl-4-Isothiazolin-3-one (0.1-1%)	2682-20-4		e	e	e	e	No
	Magnesium Nitrate (1-5%)	10377-60-3		e	e	e	e	No
Caustic NALCO 8735	Sodium Hydroxide (30-60%)	1310-73-2	25 gallons	1,000 lb	1,667 lb	e	e	No
	Potassium Hydroxide (10-30%)	1310-58-3		1,000 lb	3,333 lb	e	e	No

TABLE 5.5-2
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ ^a	RQ of Material as Used Onsite ^b	EHS TPQ ^c	Regulated Substance TQ ^d	Prop 65
Citric Acid	Citric Acid	77-92-9	5,000 gallons	e	e	e	e	No
Cleaning chemicals/detergents	Various	None	1,000 gallons	e	e	e	e	No
Coagulant NALCO 8108	None	None	800 gallons	e	e	e	e	No
Corrosion Control NALCO 3DT-184	Phosphoric Acid (30-60%)	7664-38-2	1,000 gallons	5,000 lb	8333 lb	e	e	No
Diesel No. 2	Diesel No. 2	68476-34-6	55 gallons	e	e	e	e	No
Dispersant NALCO 3DT-191	None	None	1,000 gallons	e	e	e	e	No
Flocculant NALCO 7768	None	None	800 gallons	e	e	e	e	No
Glutamine	Glutamine	56-85-9	55 gallons	e	e	e	e	No
Hydraulic Oil	Oil	None	700 gallons	42 gal ^f	42 gal ^f	e	e	No
Laboratory reagents	Various	Various	10 gallons	e	e	e	e	No
Lime	Calcium Hydroxide	1305-62-0	2000 pounds	e	e	e	e	No
Lithium Bromide	Lithium Bromide	7550-35-8	75 gallons	e	e	e	e	No
Lubrication Oil	Oil	None	1,500 gallons	42 gal ^f	42 gal ^f	e	e	No
Magnesium Oxide	Magnesium Oxide	1309-48-4	2000 pounds	e	e	e	e	No
Mineral Insulating Oil	Oil	8012-95-1	3,500 gallons	42 gal ^f	42 gal ^f	e	e	No
Oxygen Scavenger (e.g., NALCO ELIMIN-OX)	Oxygen Scavenger	None	400 gallons	e	e	e	e	No

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Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ ^a	RQ of Material as Used Onsite ^b	EHS TPQ ^c	Regulated Substance TQ ^d	Prop 65
Amine NALCO 5711	Ammonia (10-30%)	7664-41-7	400 gallons	100 lb	333 lb	500 lb	20000 lb	No
	Monoethanolamine (5-10%)	141-43-5		e	e	e	e	No
Sodium Bisulfite (NaHSO ₃) NALCO PC-7408	Sodium Bisulfite (30-60%)	7631-90-5	400 gallons	5,000 lb	8,333 lb	e	e	No
Sodium Hydroxide (NaOH)	Sodium Hydroxide	1310-73-2	10 gallons	1,000 lb	1,000 lb	e	e	No
Sodium Hypochlorite	Sodium Hypochlorite	7681-52-9	1,500 gallons	100 lb	100 lb	e	e	No
Sodium Nitrite NALCO 2536 Plus	Sodium Nitrite (1-5%)	7632-00-0	30 gallons	100 lb	100 lb	e	e	No
	Sodium Metasilicate (1-5%)	6834-92-0		e	e	e	e	No
	Sodium Tetraborate (1-5%)	1330-43-4		e	e	e	e	No
	Sodium Nitrate (1-5%)	7631-99-4		e	e	e	e	No
	Sodium Mercaptobenzothiazole (0-0.1%)	2492-26-4		e	e	e	e	No
Sulfur Hexafluoride	Sulfur Hexafluoride	2551-62-4	200 lbs	e	e	e	e	No
Sulfuric Acid (93%)	Sulfuric Acid	7664-93-9	3,000 gallons	1,000 lb	1,075 lb	1,000 lb	1,000 lb	Yes
NALCO BT-3000	Sodium Hydroxide (1-5%)	1310-73-2	400 gallons	1,000 lb	20,000 lb	e	e	No
	Sodium Tripolyphosphate (1-5%)	7758-29-4		e	e	e	e	No
Acetylene	Acetylene	47-86-2	540 ft ³	e	e	e	e	No
Hydrogen	Hydrogen	1333-74-0	20,000 ft ³	e	e	e	10,000 lb (federal)	No

TABLE 5.5-2
Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite	CERCLA SARA RQ ^a	RQ of Material as Used Onsite ^b	EHS TPQ ^c	Regulated Substance TQ ^d	Prop 65
Oxygen	Oxygen	7782-44-7	540 ft ³	e	e	e	e	No
Propane	Propane	74-98-6	200 ft ³	e	e	e	e	No
EPA Protocol Gases	Various	Various	1,000 ft ³	e	e	e	e	No
Cleaning Chemicals	Various	Various	Varies (less than 25 gallons liquids or 100 lbs solids for each chemical)	e	e	e	e	No
Paint	Various	Various	Varies (less than 25 gallons liquids or 100 lbs solids for each type)	e	e	e	e	No

- ^a RQ for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Superfund Amendments and Reauthorization Act (SARA) (Ref. 40 Code of Federal Regulations [CFR] 302, Table 302.4). Release equal to or greater than RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment or human health or safety must be reported.
- ^b RQ for materials as used onsite. Since some of the hazardous materials are mixtures that contain only a percentage of an RQ, the RQ of the mixture can be different than for a pure chemical. For example, if a material only contains 10% of a reportable chemical and the RQ is 100 lb., the RQ for that material would be (100 lb.)/(10%) = 1,000 lb.
- ^c Extremely Hazardous Substance (EHS) TPQ (Ref. 40 CFR Part 355, Appendix A). If quantities of extremely hazardous materials equal to or greater than the TPQ are handled or stored, they must be registered with the local Administering Agency.
- ^d TQ is from 19 California Code of Regulations (CCR) 2770.5 (state) or 40 CFR 68.130 (federal)
- ^e No reporting requirement. Chemical has no listed threshold under this requirement.
- ^f State RQ for oil spills that will reach California state waters [Ref. CA Water Code Section 13272(f)]
- ^g Existing Ammonia tank capacity is 12,000 gallons; however, the tank is only filled to 85% of its capacity, or 10,200 gallons.

TABLE 5.5-3
Toxicity, Reactivity, and Flammability of Hazardous Substances Stored Onsite

Hazardous Materials	Physical Description	Health Hazard	Reactive & Incompatibles	Flammability*
Anhydrous Ammonia (99% NH ₃)	Colorless gas with pungent odor	<i>Corrosive:</i> Irritation to permanent damage from inhalation, ingestion, and skin contact.	Acids, halogens (e.g., chlorine), strong oxidizers, salts of silver and zinc.	Combustible, but difficult to burn
Antifoam NALCO 71-D5	Liquid, straw-colored	Causes irritation to skin and eyes	None known	Slightly flammable
Anti-scalant NALCO PC-510T	Amber liquid	May cause slight irritation to the skin and moderate irritation to the eyes	None	Non flammable
Anti-scalant NALCO PC-191T	Yellow liquid	May cause irritation with prolonged contact.	Strong oxidizing agents, strong acids	Slightly flammable
Biocide NALCO 3980	Light green/Light yellow Liquid	<i>Corrosive:</i> Causes irreversible eye damage or skin burns. Harmful if inhaled, swallowed or absorbed through the skin.	Strong oxidizers may generate heat, fires, explosions and/or toxic vapors	Non-flammable
Biocide NALCO 73551	Colorless Liquid	May cause irritation with prolonged contact	Freezing temperatures	Slightly flammable
Biocide NALCO 7330	Light green/Light Yellow Liquid	<i>Corrosive:</i> Causes irreversible eye damage or skin burns. Harmful if inhaled, swallowed or absorbed through skin.	Strong oxidizers may generate heat, fires, explosions and/or toxic vapors	Non-flammable
Caustic NALCO 8735	Colorless Liquid, no odor	<i>Corrosive:</i> Causes eye and skin burns. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns.	Aluminum, tin, zinc, and zinc alloys and strong acids	Not flammable
Citric Acid	Odorless, white granules	Causes irritation to the skin, gastrointestinal tract, and respiratory tract	Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys.	Slightly flammable
Cleaning chemicals/detergents	Liquid	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels

TABLE 5.5-3
Toxicity, Reactivity, and Flammability of Hazardous Substances Stored Onsite

Hazardous Materials	Physical Description	Health Hazard	Reactive & Incompatibles	Flammability*
PC-56	Light Green/Light Yellow Liquid	Corrosive: Causes irreversible eye damage or skin burns. Harmful if inhaled, swallowed or absorbed through skin.	Strong oxidizers	Non-flammable
PC-11	Clear/Colorless Amber Liquid	Corrosive: Causes irreversible eye damage or skin burns. Harmful if inhaled, swallowed or absorbed through skin.	Strong alkalis may generate heat, splattering or boiling and toxic vapors. Oxidizing agents. Aluminum	Slightly flammable
PC-98	Opaque Liquid	May cause irritation with prolonged contact	Acids may generate heat, splattering or boiling and toxic vapors.	Non-flammable
Coagulant NALCO 8108	Clear, light yellow liquid	May cause irritation with prolonged contact. Toxic to aquatic organisms	Strong oxidizers	Slightly flammable
Corrosion Control NALCO 3DT-184	Liquid, Clear Amber Brown	Corrosive: May cause tissue damage	None	Non-flammable
Diesel No. 2	Oily, light liquid	May be carcinogenic	Sodium hypochlorite	Flammable
Dispersant NALCO 3D-191	Clear orange liquid	May cause irritation with prolonged contact	Strong oxidizers may generate heat, fires, explosions and/or toxic vapors	Slightly flammable
Flocculant NALCO 7768	Off-white emulsion	May cause irritation with prolonged contact. Toxic to aquatic organisms	Strong oxidizers may generate heat, fires, explosions and/or toxic vapors. Addition of water results in gelling.	Slightly flammable
Glutamine	Liquid	Causes irritation to skin and eyes	None known	Non flammable
Hydraulic Oil	Oily, dark liquid	Hazardous if ingested	Sodium hypochlorite. Oxidizers	Combustible
Laboratory reagents	Liquid and solid	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Lithium bromide	Liquid	Hazardous if ingested, Causes irritation to skin and eyes	None known	Non flammable
Lime	White dry powder	Irritation of eyes, respiratory or red "sunburn like" skin	Water and acids	Non-flammable

TABLE 5.5-3
Toxicity, Reactivity, and Flammability of Hazardous Substances Stored Onsite

Hazardous Materials	Physical Description	Health Hazard	Reactive & Incompatibles	Flammability*
Lubrication Oil	Oily, dark liquid	Hazardous if ingested	Sodium hypochlorite. Oxidizers	Flammable
Magnesium Oxide	Bulky white powder	Magnesium oxide is slowly absorbed. Ingestion may cause rapid bowel evacuation. Inhalation can cause a flu-like illness (metal fume fever). This 24- to 48-hour illness is characterized by chills, fever, aching muscles, dryness in the mouth and throat and headache.	Acids, interhalogens, phosphorus pentachloride, and chlorine trifluoride.	Non-flammable
Mineral Insulating Oil	Oily, clear liquid	Minor health hazard	Sodium hypochlorite. Oxidizers	Can be combustible, depending on manufacturer
Oxygen Scavenger NALCO ELIMIN-OX	Light yellow liquid with sulfurous odor	May cause asthma like attack if ingested. Can cause mild irritation. Causes asthmatic signs and symptoms in hyper-reactive individuals.	None	Not flammable
Amine NALCO 5711	Clear, pale yellow liquid with phenolic-amine odor	Harmful if swallowed. Causes irreversible eye damage.	Hazardous polymerization will not occur	Not flammable
Sodium Bisulfite NALCO PC-7408	Yellow liquid	Corrosive: Irritation to eyes, skin, and lungs; may be harmful if digested	Strong acids and strong oxidizing agents	Non flammable
Sodium Hydroxide	Solid, white, and odorless	Causes eye and skin burns. Hygroscopic. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns.	Incompatible with acids, water, flammable liquids, organic halogens, metals, aluminum, zinc, tin, leather, wool, and nitromethane.	Not flammable
Sodium Hypochlorite	Colorless liquid with strong odor	Harmful by ingestion, inhalation and through skin contact	Incompatible with strong acids, amines, ammonia, ammonium salts, reducing agents, metals, aziridine, methanol, formic acid, phenylacetonitrile.	Not flammable

TABLE 5.5-3
Toxicity, Reactivity, and Flammability of Hazardous Substances Stored Onsite

Hazardous Materials	Physical Description	Health Hazard	Reactive & Incompatibles	Flammability*
Sodium Nitrite NALCO 2536 Plus	White to slightly yellowish. Solid (powdered solid), odorless	Very hazardous in case of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (irritant). Slightly hazardous in case of skin contact (permeator). Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation. Severe over-exposure can result in death. Inflammation of the eye is characterized by redness, watering, and itching.	Highly reactive with combustible materials, organic materials. Reactive with reducing agents, metals, acids. Slightly reactive to reactive with moisture.	Not flammable
Sulfur Hexafluoride	Colorless gas with no odor	Hazardous if inhaled	Disilane	Non flammable
Sulfuric Acid (93%)	Oily, colorless to slightly yellow, clear to turbid liquid. Odorless.	Causes severe skin burns. Causes severe eye burns. Causes burns of the mouth, throat, and stomach.	Nitro compounds, carbides, dienes, alcohols (when heated): causes explosions. Oxidizing agents, such as chlorates and permanganates: causes fires and possible explosions. Allyl compounds and aldehydes: undergoes polymerization, possibly violent. Alkalies, amines, water, hydrated salts, carboxylic acid anhydrides, nitriles, olefinic organics, glycols, aqueous acids: causes strong exothermic reactions.	Not flammable
NALCO BT-3000	Light Yellow Liquid	Corrosive. Will cause eye burns and permanent tissue damage	Strong acids	Not flammable

TABLE 5.5-3
Toxicity, Reactivity, and Flammability of Hazardous Substances Stored Onsite

Hazardous Materials	Physical Description	Health Hazard	Reactive & Incompatibles	Flammability*
Acetylene	Colorless gas	Asphyxiant gas	Oxygen and other oxidizers including all halogens and halogen compounds. Forms explosive acetylide compounds with copper, mercury, silver, brasses containing >66 percent copper and brazing materials containing silver or copper.	Flammable
Hydrogen	Colorless, odorless, flammable gas or a colorless, odorless, cryogenic liquid.	Asphyxiation, by displacement of oxygen.	Strong oxidizers (e.g., chlorine, bromine, oxygen, oxygen difluoride, and nitrogen trifluoride). Oxygen/Hydrogen mixtures can explode on contact with a catalyst such as platinum.	Flammable
Oxygen	Colorless, odorless, tasteless gas	Therapeutic overdoses can cause convulsions. Liquid oxygen is an irritant to skin.	Hydrocarbons, organic materials	Oxidizing agent; actively supports combustion
Propane	Propane gas (odorant added to provide odor)	Asphyxiant gas. Causes frostbite to area of contact.	Strong oxidizing agents and high heat	Flammable
EPA Protocol Gases	Gas	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Cleaning Chemicals	Liquid	Refer to individual chemical labels	Refer to individual chemical labels	Refer to individual chemical labels
Paint	Various colored liquid	Refer to individual container labels	Refer to individual container labels	Refer to individual container labels

Notes:

Data were obtained from Material Safety Data Sheets (MSDSs) and Lewis, 1991.

Per Department of Transportation regulations, under 49 CFR 173: "Flammable" liquids have a flash point less than or equal to 141 degrees Fahrenheit; "Combustible" liquids have a flash point greater than 141° F.

TABLE 5.5-4
Toxic Effects and Exposure Levels of Regulated Substance

Name	Toxic Effects	Exposure Levels-Pure NH ₃
Anhydrous Ammonia (99% NH ₃)	Toxic effects for contact with pure liquid or vapor causes eye, nose, and throat irritation, skin burns, and vesiculation. Ingestion or inhalation causes burning pain in mouth, throat, stomach, and thorax, constriction of thorax, and coughing followed by vomiting blood, breathing difficulties, convulsions, and shock. Other symptoms include dyspnea, bronchospasms, pulmonary edema, and pink frothy sputum. Contact or inhalation overexposure can cause burns of the skin and mucous membranes, and headache, salivation, nausea, and vomiting. Other symptoms include labored breathing, bloody mucous discharge, bronchitis, laryngitis, hemmoptysis, and pneumonitis. Damage to eyes may be permanent, including ulceration of conjunctiva and cornea and corneal and lenticular opacities.	Occupational Exposures PEL = 35 mg/m ³ OSHA TLV = 18 mg/m ³ ACGIH TWA = 18 mg/m ³ NIOSH STEL = 35 mg/m ³ Hazardous Concentrations IDLH = 300 ppm LD ₅₀ = 350 mg/kg - oral, rat ingestion of 3 to 4 mL may be fatal Sensitive Receptors ERPG-1 = 25 ppm ERPG-2 = 200 ppm ERPG-3 = 1,000 ppm

ERPG = Emergency Response Planning Guideline

ERPG-1 = Maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects

ERPG-2 = Maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without developing irreversible or serious health effects

ERPG-3 = Maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing life-threatening health effects

IDLH = Immediately dangerous to life and health

LD₅₀ = Dose lethal to 50 percent of those tested

mg/kg = milligrams per kilogram

mg/m³ = milligrams per cubic meter

mL = milliliters

PEL = OSHA-permissible exposure limit for 8-hour workday

ppm = parts per million

STEL = Short-term exposure limit, 15-minute exposure

TLV = ACGIH threshold limit value for 8-hour workday

TWA = NIOSH time-weighted average for 8-hour workday

Ammonia will only be transported along approved transportation routes. The recommended routes, subject to Caltrans approval, are as follows:

- From I-5 exit at SR 12 interchange then turn south onto North Thornton Road, west on Frontage road, and south on North Cord Road;
- From I-5 exit at West Eight Mile Road interchange then turn north onto North Thornton Road, west on Frontage road, and south on North Cord Road;

Outbound trucks would proceed on I-5 to access hazardous waste facilities throughout the state. Hauling would be carried out in accordance with local, state, and federal regulations that include the Resource Conservation and Recovery Act (42 U.S. Code 6901 et seq.) and the California Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.).

5.5.2.3 Hazardous Materials Use

5.5.2.3.1 Construction Phase

Construction will involve the transport of limited quantities of hazardous materials to the project site and will pose minor hazards associated with their use. Small oil spills may occur during onsite refueling. Equipment refueling will be performed away from water bodies to prevent contamination of water in the event of a fuel spill. Therefore, the potential environmental effects from fueling operations are expected to be limited to small areas of contaminated soil. If a fuel spill occurs on soil, the contaminated soil will be placed into barrels or trucks for offsite disposal as a hazardous waste. The worst-case scenario for a chemical release from fueling operations would be a vehicle accident involving a service or refueling truck.

The quantities of hazardous materials that will be handled during construction are relatively small and Best Management Practices (BMPs) will be implemented by contractor personnel. Therefore, the potential for environmental effects is expected to be small.

5.5.2.3.2 Project Operation

As stated previously, the LEC will use hazardous materials both during construction and during project operation. Most of the hazardous substances that will be used by the project are required for NO_x emission controls (i.e., ammonia), treatment and laboratory analysis of cooling water, facility maintenance, and lubrication of equipment, or will be contained within transformers and electrical switches. Their storage will be carefully contained within designated hazardous materials storage areas and their use will be carefully prescribed in terms of hazardous materials handling plans, facility Health and Safety Plans, and the Hazardous Materials Business Plan (HMBP).

The project will comply with applicable laws and regulations for the storage of these materials to minimize the potential for a release of hazardous materials and will conduct emergency response planning to address public health concerns regarding hazardous materials storage and use. For the non-CalARP regulated materials, therefore, the risk of public exposure and serious hazard is low and would not be significant. The only regulated substance that will be used for the project at quantities larger than the federal Threshold Quantity (TQ) is anhydrous ammonia, described in Table 5.4-4.

The CalARP program is designed to minimize the risk that extremely hazardous substances will cause immediate harm to the public and environment. It requires that an owner or operator of a business handling more than the threshold quantity of a listed regulated substance evaluate the use of the substance to determine the potential for and impacts of an accidental release.

Anhydrous Ammonia

The LEC facility will tie into the existing anhydrous ammonia (99% NH₃) in an existing single stationary aboveground storage tank (AST) currently in use at the STIG plant. A new ammonia tank will not be built for the LEC facility. The capacity of the tank is 12,000 gallons; however, the tank is only filled to 85% of its capacity, or 10,200 gallons. The tank is surrounded by a secondary containment structure capable of holding the full contents of the tank and accumulated precipitation. The tank is currently filled one to two times per year for STIG plant operations.

Storage and use of ammonia would be subject to the requirements of the California Fire Code, Article 80, as well as CalARP. Article 80 of the California Fire Code contains specific requirements for control of liquid and gaseous releases of hazardous materials. Secondary containment in the form of a bermed containment area under and surrounding the anhydrous ammonia tank will be provided for the ammonia storage tank and loading area. In addition, the facility will follow the current Risk Management Plan (RMP) that is currently in place for the existing anhydrous ammonia tank. The RMP is in accordance with CalARP, further specifying safe handling procedures for the ammonia as well as emergency response procedures in the event of an accidental release. As described in Section 2.1.3.3, the ammonia storage system is being upgraded as part of the RMP upgrade process.

Because sodium hypochlorite and anhydrous ammonia are incompatible chemicals, the sodium hypochlorite will be stored in a bermed area for secondary containment (an area capable of capturing any spills) that will be designed such that it is separated from the ammonia, to eliminate potential interactions/reactions in the event that the chemicals are accidentally released.

Hydrogen

The LEC facility will store 20,000 ft³ of hydrogen gas on site for cooling the steam turbine generator. Hydrogen gas is a regulated substance, but will be used on site in quantities less than its federal TQ of 10,000 pounds. Thus, its use will not require preparation of an RMP.

5.5.2.4 Accidental Release Hazards

If a chemical release were to occur without proper engineering controls in place, the public could be exposed to harmful vapors, and incompatible chemicals could mix, causing vapors that could also potentially have harmful effects. In addition, an uncontrolled release of liquid chemicals could run off and drain into the stormwater system and potentially degrade water quality. However, the California Fire Code, Articles 79 and 80, includes specific requirements for the safe storage and handling of hazardous materials that would reduce the potential for a release of hazardous materials, and mixing of incompatible materials. The design of the project will incorporate state-of-the-art chemical storage and handling facilities in compliance with the current California Fire Code and other applicable federal, state, and local regulations.

5.5.2.4.1 Ammonia Release

Because of its hazardous properties, ammonia is classified as a regulated substance, and an accidental release of anhydrous ammonia could present a human health hazard. Pure ammonia is chemically 82% nitrogen (N) and 18% hydrogen (H) and has the chemical formula NH₃. The definition of anhydrous is without water. Whereas household ammonia is 95% water, anhydrous ammonia has no water. If the anhydrous ammonia were to leak or be released without proper controls, the ammonia could escape or evaporate as a gas into the atmosphere. Its vapor is lighter than air (anhydrous ammonia vapor density = 0.6, whereas air vapor density = 1) and has the same pungent odor as household ammonia. Although ammonia vapor is lighter than air, the vapors from a leak may hug the ground, appearing as a white cloud.

Pure ammonia (NH₃) is a volatile, acutely hazardous chemical that is stored under pressure as a liquid and becomes a toxic gas if released. In addition, anhydrous ammonia is colorless

and non-flammable. Ammonia gas can be toxic to humans at sufficient concentrations. Potential toxic effects of ammonia and acceptable exposure levels are summarized in Table 5.5-4. The odor threshold of ammonia is about 5 ppm, and minor irritation of the nose and throat will occur at 30 to 50 ppm. Ammonia concentrations greater than 140 ppm will cause detectable effects on lung function even for short-term exposures (0.5 to 2 hours).

At higher concentrations of 700 to 1,700 ppm, ammonia gas will cause severe effects; death occurs at concentrations of 2,500 to 6,000 ppm (Smyth, 1956). The hazard to facility workers will be mitigated by facility safety equipment, hazardous materials training, and emergency response planning (see Section 5.16, Worker Health and Safety). In a catastrophic accident, toxic ammonia gas could migrate off site and affect the health of humans at locations surrounding the facility (see below, Section 5.5.2.4.2). Facility design will minimize the potential for harm to humans located off site.

5.5.2.5 Fire and Explosion Hazards

Table 5.5-3 describes the flammability for the hazardous materials that will be on site. Article 80 of the California Fire Code requires all hazardous materials storage areas to be equipped with a fire extinguishing system and also requires ventilation for all enclosed hazardous material storage areas.

Anhydrous ammonia, which constitutes the largest quantity of hazardous materials stored onsite, is a colorless, non-flammable liquefied gas. Under normal storage conditions, ammonia would not evaporate to the atmosphere because it is contained in a sealed tank that maintains the ammonia in a state that precludes evaporation. In the unlikely event that a release were to occur, ammonia could evaporate directly to the atmosphere. Ammonia vapor is combustible only within a narrow range of concentrations in air. It will ignite at a temperature of 1204°F within vapor concentration limits between 15% and 28% and the presence of a strong ignition source. Outside conditions that would support these vapor concentrations are rare. The evaporation rate of ammonia is similar to water, which is sufficiently low that the lower explosive limit of 15 percent (or 15,000 ppm) will not be reached.

The plant machinery lubrication oil is flammable. In accordance with Article 80 of the California Fire Code, the storage area for the lubrication oil would be equipped with a fire extinguishing system and the lubrication oil would be handled in accordance with an HMBP approved by the San Joaquin County Environmental Health Department, the San Joaquin County Office of Emergency Services, and the CEC. With proper storage and handling of flammable materials in accordance with the California Fire Code and the site-specific HMBP, the risk of fire and explosion at the generating facility would be minimal.

The LEC will require construction of a 2.5-mile natural gas pipeline which will interconnect to PG&E's distribution pipeline #108. Natural gas is composed mostly of methane, but also may contain ethane, propane, nitrogen, butane, isobutene, and isopentane. It is colorless, odorless, tasteless, and is lighter than air. Methane is flammable when mixed in air at concentrations of 5 to 14 percent, which is also the detonation range. Natural gas, therefore, poses a risk of fire and explosion if an accidental release were to occur. However, the risk of

a fire and/or explosion would be reduced through compliance with applicable codes, regulations, and industry design/construction standards.

The federal safety and operating requirements for natural gas pipelines are contained in Title 49 of the CFR, Parts 190 through 192. These requirements vary according to population density and land use; the pipeline classes are defined as follows:

- Class 1 includes pipelines in locations with 10 or fewer buildings intended for human occupancy.
- Class 2 includes pipelines in locations with more than 10, but fewer than 46 buildings intended for human occupancy.
- Class 3 includes pipelines in locations with more than 46 buildings intended for human occupancy, or where the pipeline is within 100 yards of any building or small well-defined outside area occupied by 20 or more people on at least 5 days per week for 10 weeks in any 12-month period.
- Class 4 includes pipelines in locations where buildings with 4 or more stories aboveground are prevalent.

The project's pipeline will be designed to meet Class 1 service and will meet California Public Utilities Commission (CPUC) General Order 112-D and 58-A standards, in addition to the federal requirements for gas pipeline construction and safety.

The Woodbridge Fire Protection District has a total of four stations in its system. The closest fire station to the LEC project site is Woodbridge Station No. 4 at 6365 W. Capitol Avenue, Lodi, California 95242. The station is approximately 1.8 miles north of the LEC and would provide the first response to the project site. Response time would be approximately 7 to 10 minutes. If hazardous materials were involved in the incident, Woodbridge Station No. 4 would be the first on site, requesting additional resources from the other Woodbridge stations, the City of Stockton and the City of Lodi Fire Departments. Any mutual aid response for major incidents would also come from the other Woodbridge stations, the City of Stockton and the City of Lodi Fire Departments, depending on situation and need.

The San Joaquin County Office of Emergency Services operates and manages a county-wide Hazardous Materials (Haz Mat) Response Team. Woodbridge Station No. 4 has hazardous material (hazmat) response capabilities, with equipment and trained personnel. Additionally, the Stockton Fire Department hazmat capabilities are located at Station No. 10, with trained hazmat personnel and equipment. Stockton Station No. 10 is approximately 10 miles from the project site, at 2903 W. March Lane, Stockton, California 95219.

5.5.2.6 Schools

The nearest school is Julia Morgan Elementary, which is approximately 2.9 miles south-southeast of the project site at 3777 A.G. Spanos Boulevard, Stockton, California. The proposed transportation routes for delivery of regulated materials such as anhydrous ammonia, as well as for all other hazardous materials used at the LEC, will not pass in the vicinity of the school. The recommended routes travel along the highways and access the project site from North Thornton Road.

5.5.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Public Resources Code § 21083; California Code of Regulations, title 14, § 15064(h), 15065(c), 15130, and 15355).

In July 2008, 21 projects were in various stages of progress with the City of Lodi. Most of these projects are zoned residential, with a few office, mixed use, institutional, commercial, and industrial projects proposed. All of these projects are more than 4 miles from the proposed project, except for the improvements at the White Slough WPCF (Draft EIR issued March 28, 2008), which is adjacent to the project site (Bereket, 2008; City of Lodi, 2008).

In July 2008, 72 projects¹ were being processed with the San Joaquin County Building Department. These projects were located in Acampo, Escalon, Farmington, French Camp, Linden, Lodi, Lockeford, Manteca, Ripon, Stockton, and Tracy. The types of projects included residential projects such as new residences, additions and remodels to existing residences, mobile home renovations, and pool construction; commercial projects such as administration buildings, barns, and a riding arena; light industrial projects such as storage buildings, spray booths, and warehouses; office projects such as building conversions and tenant improvements; and institutional projects such as classroom relocation and facilities to house animals (Raborn, 2008).

Existing laws and regulations address the handling of hazardous materials and the transportation and use of anhydrous ammonia, an acutely hazardous material, and will ensure that all hazardous materials at the LEC are safely managed. The existing STIG plant and the LEC Plant plan to share the existing anhydrous ammonia aboveground storage tank. There are no reported additional properties adjacent to the LEC that use anhydrous ammonia, so that a simultaneous release of this chemical from two or more sources would not cause a hazardous cumulative concentration of this chemical. Existing laws and regulations will thus ensure that the proposed project's incremental effect is not cumulatively considerable.

5.5.4 Mitigation Measures

The following sections present measures included in the project to mitigate potential public health and environmental impacts of handling hazardous materials and regulated substances during construction and operation.

5.5.4.1 Construction Phase

The hazardous materials that would be used during construction present a relatively low public health risk, but could contaminate surface water or groundwater if a release occurred. Use of BMPs would reduce the potential for the release of construction-related fuels and other hazardous materials to stormwater and receiving waters as discussed in Section 5.15, Water Resources. BMPs prevent sediment and stormwater contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials.

¹ For the purposes of this discussion, San Joaquin County sorted its projects by project cost, and provided a list of the projects costing \$25,000 or more.

Construction service personnel will follow general industry health, safety, and environmental standards for filling and servicing construction equipment and vehicles. The standards are designed to reduce the potential for incidents involving the hazardous materials. They include the following:

- Refueling and maintenance of vehicles and equipment will occur only in designated areas that are either bermed or covered with concrete, asphalt, or other impervious surfaces to control potential spills. Employees will be present during refueling activities.
- Vehicle and equipment service and maintenance will be conducted only by authorized personnel.
- Refueling will be conducted only with approved pumps, hoses, and nozzles.
- Catch-pans will be placed under equipment to catch potential spills during servicing.
- All disconnected hoses will be placed in containers to collect residual product (i.e. fuel, hydraulic fluid, and coolant) from the hose.
- Vehicle engines will be shut down during refueling.
- No smoking, open flames, or welding will be allowed in refueling or service areas.
- Refueling will be performed away from bodies of water to prevent contamination of water in the event of a leak or spill.
- When refueling is completed, the service truck will leave the project site.
- Service trucks will be provided with fire extinguishers and spill containment equipment, such as absorbents.
- Should a spill contaminate soil, the soil will be put in containers and disposed of as appropriate. All containers used to store hazardous materials will be inspected at least once per week for signs of leaking or failure. All maintenance and refueling areas will be inspected monthly. Results of inspections will be recorded in a logbook that will be maintained onsite.

In the unlikely event of a spill, the spill may need to be reported to the appropriate regulatory agencies and cleanup of contaminated soil could be required. Small spills will be contained and cleaned up immediately by trained, onsite personnel. Larger spills will be reported via emergency phone numbers to obtain help from offsite containment and cleanup crews. All personnel working on the project during the construction phase will be trained in handling hazardous materials and the dangers associated with hazardous materials. An onsite health and safety person will be designated to implement health and safety guidelines and to contact emergency response personnel and the local hospital, if necessary.

If there is a large spill from a service or refueling truck, contaminated soil will be placed into barrels or trucks by service personnel for offsite disposal at an appropriate facility in accordance with law. If a spill involves hazardous materials quantities equal to or greater than the specific RQ (42 gallons for petroleum products), all federal, state, and local reporting requirements will be followed. In the event of a fire or injury, the local fire department will be called (Woodbridge Fire Station No. 4).

5.5.4.2 Operation Phase

During facility operation, various hazardous materials and two regulated substances, anhydrous ammonia and hydrogen, will be stored on site as shown in Table 5.5-1. Table 5.5-2 presents information about these materials, including trade names, chemical names, CAS numbers, maximum quantities onsite, RQs, CalARP TPQs, and status as a Proposition 65 chemical (a chemical known to be carcinogenic or cause reproductive problems in humans). Health hazards and flammability data are summarized for these materials in Table 5.5-3, which also contains information on incompatible chemicals (e.g., sodium hypochlorite and ammonia). Table 5.5-4 describes the toxicity of the regulated substance and hazardous materials. Listed below are mitigation measures for minimizing the public health risks associated with hazardous material and regulated substance handling during facility operation.

5.5.4.2.1 Hazardous Materials

All hazardous materials will be handled and stored in accordance with applicable codes and regulations specified in Section 5.5.6. Specific requirements of the California Fire Code that reduce the risk of fire or the potential for a release of hazardous materials that could affect public health or the environment include:

- Provision of an automatic sprinkler system for indoor hazardous material storage areas.
- Provision of an exhaust system for indoor hazardous material storage areas.
- Separation of incompatible materials by isolating them from each other with a noncombustible partition.
- Spill control in all storage, handling, and dispensing areas.
- Separate secondary containment for each chemical storage system. The secondary containment is required to hold the entire contents of the tank plus the volume of water for the fire suppression system that could be used for fire protection for a period of 20 minutes in the event of a catastrophic spill.

In addition, a HMBP is required by CCR Title 19 and the Health and Safety Code (Section 25504). The STIG plant currently has an HMBP; however, with the addition of new chemicals, the existing HMBP will be updated to incorporate additional chemicals brought onsite as a result of the LEC plant. The HMBP will include a revised inventory and location map of hazardous materials onsite and an emergency response plan for hazardous materials incidents. Specific topics currently addressed in the plan include:

- Facility identification
- Emergency contacts
- Chemical inventory information (for every hazardous material)
- Site map
- Emergency notification data
- Procedures to control actual or threatened releases
- Emergency response procedures
- Training procedures
- Certification

The revised HMBP will be filed with the San Joaquin County Environmental Health Department, the designated Certified Unified Program Agency (CUPA) for the project site, and will be updated annually in accordance with applicable regulations.

In accordance with emergency response procedures specified in the HMBP, designated personnel will be trained in appropriate methods to mitigate and control accidental spills. In the event of a chemical emergency, plant personnel will defer to the San Joaquin County Environmental Health Department and the San Joaquin County Office of Emergency Services. Woodbridge Fire Protection District Station No. 4 would be the first onsite and fire department personnel will act as first responders.

For emergency spills and hazardous materials, the Woodbridge Fire Protection District and the City of Stockton and Lodi Fire Departments have firefighters who have completed formal training in Hazardous Materials Incident Response. These firefighters are members of a countywide Hazardous Materials (Haz Mat) Team, managed by the San Joaquin County Office of Emergency Services. The Haz Mat Team 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. Woodbridge Station No. 4, at 6365 W. Capitol Avenue, Lodi, California 95242, is the nearest fire station to the proposed project site. The station is approximately 1.8 miles north of the LEC and response time would be approximately 7 to 10 minutes. Mutual aid and additional resources will be requested from the other Woodbridge stations, the City of Stockton and the City of Lodi Fire Departments. Stockton Station No. 10 is approximately 10 miles from the project site, at 2903 W. March Lane, Stockton, California 95219.

5.5.4.2.2 Anhydrous Ammonia

Anhydrous ammonia is currently in use for the STIG facility and the addition of the LEC facility will not require an increase in storage capacity of the existing tank. The STIG facility refills the tank once per year under current operations. The addition of the LEC facility will only require additional deliveries of ammonia.

Anhydrous ammonia will be used in a selective catalytic reduction (SCR) process to control NO_x emissions created in the combustion chambers of the combustion turbines. The SCR system will include catalyst modules, an ammonia storage system, and an ammonia injection system. The anhydrous ammonia, stored as a liquefied gas comprised of 99 percent ammonia, will be injected into the turbine exhaust housing upstream of the catalyst modules. The rate of injection will be controlled by a monitoring system that uses sensors to determine the correct quantity of ammonia to feed to the injection system.

Approximately two times per month (or a maximum of 24 deliveries per year), one 6,500-gallon tanker truck will deliver anhydrous ammonia to the site. The ammonia will be stored in an AST with a 12,000-gallon capacity, contained within a secondary containment system, as required by the Uniform Fire Code. This containment system includes a bermed containment area under and surrounding the tank which would contain a liquid ammonia release from the tank. The anhydrous ammonia storage tank is equipped with continuous tank level monitors and alarms, automated leak detection system, pressure monitors and alarms, and excess flow and emergency block valves.

Ammonia is a regulated substance under the federal CAA pursuant to 40 CFR 68 (Subpart G) and CalARP pursuant to Health and Safety Code Sections 25331 through 25543.3. The California program is similar to the federal program but is more stringent in some areas.

In accordance with CalARP regulations, an RMP has already been prepared for the existing anhydrous ammonia tank at the STIG plant. The RMP includes a hazard assessment to evaluate the potential effects of an accidental release, a program for preventing an accidental release, and a program for responding to an accidental release. The specific components of the RMP include:

- Description of the facility
- Accident history of the facility
- History of equipment used at the facility
- Design and operation of the facility
- Site map(s) of the facility
- Piping and instrument diagrams of the facility
- Seismic analysis
- Hazard and operability study
- Prevention program
- Consequence analysis
- Offsite consequence analysis
- Emergency response
- Auditing and inspection
- Recordkeeping
- Training
- Certification

The RMP has been filed with the San Joaquin County Office of Emergency Services. The RMP covers acutely hazardous materials that can produce toxic clouds when inadvertently released. The RMP includes a hazard assessment to evaluate the potential effects of accidental releases; a program for preventing accidental releases; and a program for responding to accidental releases to protect human health and the environment.

A Process Safety Management Plan (PSMP) will be required under OSHA because the OSHA regulations require PSMP for storage of anhydrous ammonia at quantities above 10,000 pounds (29 CFR Part 199). A PSMP has been prepared for the existing ammonia tank and will be submitted in September 2008 to San Joaquin Office of Emergency Services. The requirements for a PSMP are very similar to those for an RMP, but an offsite consequence analysis is not required for the PSMP.

5.5.4.2.3 Hydrogen

Hydrogen gas will be stored outdoors in compressed gas cylinders. It will be used for cooling the steam turbine generator. Because it is highly flammable and potentially explosive, it will be stored in a separate area away from sources of ignition and heat and from oxidizing materials.

5.5.4.2.4 Petroleum Products

Federal and California regulations require a Spill Prevention Control and Countermeasures (SPCC) plan if petroleum products above certain quantities are stored. Both federal and

state laws apply only to petroleum products that might be discharged to navigable waters. If stored quantities are equal to or greater than 660 gallons for a single container, or equal to or greater than 1,320 gallons total (including tanks, oil-filled equipment, and drums), an SPCC plan must be prepared. The existing STIG plant has an SPCC plan in place, however the plan will be updated to include the additional petroleum products stored on site at the LEC plant.

5.5.4.2.5 Transportation/Delivery of Hazardous Materials and Regulated Substances

Hazardous materials and anhydrous ammonia, a regulated substance, will be delivered periodically to the facility. As discussed in Section 5.12, Traffic and Transportation, transportation of hazardous materials will comply with all Caltrans, EPA, DTSC, CHP, and California State Fire Marshal regulations. Under the California Vehicle Code, the CHP has the authority to adopt regulations for transporting hazardous materials in California. The CHP can issue permits and specify the route for hazardous material delivery. Anhydrous ammonia will be delivered to the facility, and transported in accordance with Vehicle Code Section 32100.5, which regulates the transportation of hazardous materials that pose an inhalation hazard. In addition, ammonia will only be transported along approved transportation routes. The recommended routes, subject to Caltrans approval, are as follows:

- Coming from Sacramento and points north: from I-5 exit at SR 12 interchange then turn south onto North Thornton Road, west on Frontage road, and south on North Cord Road;
- Coming from Stockton and points south: from I-5 exit at West Eight Mile Road interchange then turn north onto North Thornton Road, west on Frontage road, and south on North Cord Road;

Outbound trucks would proceed on I-5 to access hazardous waste facilities throughout the state.

Currently the existing anhydrous ammonia tank is refilled once a year for the STIG facility. With the addition of the LEC facility, deliveries will increase to two times per month, with a maximum of 24 deliveries per year.

A transportation risk analysis was also prepared for this project to determine the risk of delivering ammonia to LEC (Appendix 5.5A). The risk of an incident occurring during a calendar year that would result in 10 or more fatalities is 0.017/million miles x 73.9 miles, or 1.26 in one million. The risk of an accident occurring in any year that would result in 33 or more fatalities is 0.0027/million miles x 73.9 miles, or 0.20 in one million. The CEC uses a significance threshold of 1 in 100,000 (or 10 in 1,000,000) for a risk of 10 fatalities and a threshold of 1 in 1,000,000 for a risk of 100 fatalities (CEC, 2001). Both of the project's risk estimates (1.26 and 0.20 in one million) are well below the CEC thresholds. Therefore, the risk of exposure to aqueous ammonia during transport to the LEC site is not significant.

5.5.4.2.6 Security Plan

In addition to standard industrial business security measures, the Applicant will be preparing a security plan that will include the following elements:

- Descriptions of the site fencing and security gate

- Evacuation procedures
- A protocol for contacting law enforcement in the event of conduct endangering the facility, its employees, its contractors, or the public
- A fire alarm monitoring system
- Measures to conduct site personnel background checks, including employee and routine onsite contractors consistent with state and federal law regarding security and privacy
- A site access protocol for vendors
- A protocol for hazardous materials vendors to prepare and implement security plans as per 49 CFR 172.800 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 172, Subpart I

The plan will also include a demonstration that the perimeter security measures will be adequate. The demonstration may include one or more of the following:

- Security guards
- Security alarm for critical structures
- Perimeter breach detectors and onsite motion detectors
- Video or still camera monitoring system

5.5.4.3 Monitoring

In accordance with applicable federal, state, and local regulations, site personnel would regularly inspect all hazardous materials handling facilities for compliance with applicable regulations and would ensure that any deficiencies were promptly repaired. In addition, the facility would be subject to regular inspections by the Woodbridge Fire Protection District, which would ensure compliance with appropriate regulatory requirements for hazardous materials and regulated substances handling.

5.5.5 Laws, Ordinances, Regulations, and Standards

The storage and use of hazardous materials and regulated substances at the facility are governed by federal, state, and local laws. Applicable laws and regulations address the use and storage of hazardous materials to protect the environment from contamination, and to protect facility workers and the surrounding community from exposure to hazardous and regulated substances. The applicable LORS are summarized in Table 5.5-5 and described below.

TABLE 5.5-5
Laws, Ordinances, Regulations, and Standards for Hazardous Materials Handling

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Federal			
Section 302, EPCRA (Pub. L. 99-499, 42 USC 11022) Hazardous Chemical Reporting: Community Right-To-Know (40 CFR 370)	Requires one-time notification if extremely hazardous substances are stored in excess of TPQs.	San Joaquin County Environmental Health Department	A revised HMBP will be prepared for submittal to San Joaquin County Environmental Health Department (Section 5.5.4.2.1).
Section 304, EPCRA (Pub. L. 99-499, 42 USC 11002) Emergency Planning and Notification (40 CFR 355)	Requires notification when there is a release of hazardous material in excess of its RQ.	San Joaquin County Environmental Health Department	A revised HMBP will be prepared to describe notification and reporting procedures (Section 5.5.4.2.1).
Section 311, EPCRA (Pub. L. 99-499, 42 USC 11021) Hazardous Chemical Reporting: Community Right-To-Know (40 CFR 370)	Requires that MSDSs for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and San Joaquin County Environmental Health Department	San Joaquin County Environmental Health Department	The revised HMBP to be prepared will include a list of hazardous materials for submission to agencies (Section 5.5.4.2.1)
Section 313, EPCRA (Pub. L. 99-499, 42 USC 11023) Toxic Chemical Release Reporting: Community Right-To-Know (40 CFR 372)	Requires annual reporting of releases of hazardous materials.	San Joaquin County Environmental Health Department	The revised HMBP to be prepared will describe reporting procedures (Section 5.5.4.2.1).
Section 112, CAA Amendments (Pub. L. 101-549, 42 USC 7412) Chemical Accident Prevention Provisions (40 CFR 68)	Requires facilities that store a listed hazardous material at a quantity greater than the TQ to develop an RMP.	San Joaquin County Office of Emergency Services	An RMP has been prepared, submitted, and approved by the San Joaquin County Office of Emergency Services (Section 5.5.4.2.2)
Section 311, CWA (Pub. L. 92-500, 33 USC 1251 et seq.) Oil Pollution Prevention (40 CFR 112)	Requires preparation of an SPCC plan if oil is stored in a single AST with a capacity greater than 660 gallons or if the total petroleum storage (including tanks, oil-filled equipment, and drums) is greater than 1,320 gallons. The facility will have petroleum in excess of the aggregate volume of 1,320 gallons.	RWQCB	A revised SPCC will be prepared (Section 5.5.4.2.3)

TABLE 5.5-5
Laws, Ordinances, Regulations, and Standards for Hazardous Materials Handling

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Pipeline Safety Laws (49 USC 60101 et seq.) Hazardous Materials Transportation Laws (49 USC 5101 et seq.) Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards (49 CFR 192)	Specifies natural gas pipeline construction, safety, and transportation requirements.	U.S. Department of Transportation	The natural gas pipeline will be constructed in accordance with 49 CFR requirements (Section 5.5.2.5)
State			
Health and Safety Code, Section 25500, et seq. (HMBP)	Requires preparation of an HMBP if hazardous materials are handled or stored in excess of threshold quantities.	San Joaquin County Environmental Health Department	A revised HMBP will be prepared for submittal to the San Joaquin County Environmental Health Department (Section 5.5.4.2.1)
Health and Safety Code, Section 25531 through 25543.4 (CalARP)	Requires registration with local CUPA or lead agency and preparation of an RMP if regulated substances are handled or stored in excess of TPQs.	San Joaquin County Office of Emergency Services	An RMP has been prepared, submitted, and approved by the San Joaquin County Office of Emergency Services (Section 5.5.4.2.1)
Health and Safety Code, Section 25270 through 25270.13 (Aboveground Petroleum Storage Act)	Requires preparation of an SPCC plan if oil is stored in a single AST with a capacity greater than 660 gallons or if the total petroleum storage (including tanks, oil-filled equipment, and drums) is greater than 1,320 gallons. The facility will have petroleum in excess of the aggregate volume of 1,320 gallons.	RWQCB	A revised SPCC plan will be prepared (Section 5.5.4.2.3)
Health and Safety Code, Section 25249.5 through 25249.13 (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.	OEHHA	The site will be appropriately labeled for chemicals on the Proposition 65 list. (Section 5.5.5.2.4)
CPUC General Order Nos. 112-E and 58-A	Specify standards for gas service and construction of gas gathering, transmission, and distribution piping systems.	CPUC	Construction of the natural gas pipeline will comply with the standards specified in these General Orders (Section 5.5.5.2.5)

TABLE 5.5-5
Laws, Ordinances, Regulations, and Standards for Hazardous Materials Handling

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Local			
San Joaquin County CUPA Program (Health and Safety Code Section 25180; San Joaquin County Board of Supervisors Resolution R-95-760)	To consolidate, coordinate and make consistent the administrative requirements, permitting, inspection activities, enforcement activities and fees for hazardous waste and hazardous materials programs in each jurisdiction.	San Joaquin County Environmental Health Department	Sections 5.5.5.3 and 5.5.5.4
San Joaquin County Hazardous Waste Generator Program (Health and Safety Code Section 25200 et seq.; California Code of Regulations Title 22, Section 66001 et seq.)	To protect public health and the environment from exposure to hazardous wastes by regulation of the businesses and industries that generate hazardous waste through a comprehensive program of inspection, chemical emergency response, surveillance, complaint investigation, and assistance to industry, enforcement and public education.	San Joaquin County Environmental Health Department	Sections 5.5.5.3 and 5.5.5.4
San Joaquin County Hazardous Waste Tiered Permitting Program (Health and Safety Code Sections 25200.3, 25201.5; California Code of Regulations Title 22, Section 67450.2 et seq.)	To ensure that hazardous wastes treated on site prior to reuse or disposal are stored, handled and disposed of in compliance with state and federal laws and regulations. Inspection, surveillance and permitting is required as part of the county Unified Program.	San Joaquin County Environmental Health Department	Sections 5.5.5.3 and 5.5.5.4
San Joaquin County Environmental Health Emergency Response Program (California Health and Safety Code Sections 25200 et seq. and 101040)	Interagency emergency response team guidelines for incidents involving hazardous material spills or releases, including health assessments to evaluate actual or potential environmental contamination and/or human exposure, recommendations for short and long-term cleanup, and oversight of the cleanup activities performed by the responsible parties or environmental assessment firms.	San Joaquin County Environmental Health Department	Sections 5.5.5.3 and 5.5.5.4

AST = Aboveground Storage Tank

CAA = Clean Air Act

CalARP = California Accidental Release Program

Cal/OSHA = California Division of Occupational Safety and Health

CPUC = California Public Utilities Commission

CWA = Clean Water Act

EPCRA = Emergency Planning and Community Right-to-Know Act of 1986

LEPC = local emergency planning committee

MSDS = Material Safety Data Sheet

OEHHA = Office of Environmental Health Hazard Assessment

Pub. L. = Public Law

RMP = Risk Management Plan

RQ = Reportable Quantities

SERC = state emergency response commission

SPCC = Spill Prevention Control and Countermeasures

TPQs = Threshold Planning Quantities

USC = United States Code

5.5.5.1 Federal LORS

Hazardous materials are governed under CERCLA, the CAA, and the CWA.

5.5.5.1.1 29 CFR 1910 et seq. and 1926 et seq.

These sections contain requirements for equipment used to store and handle hazardous materials for the purpose of protecting worker health and safety. This regulation also addresses requirements for equipment necessary to protect workers in emergencies. It is designed primarily to protect worker health, but also contains requirements that affect general facility safety. The California regulations contained in Title 8 (California equivalent of 29 CFR) are generally more stringent than those contained in Title 29. The administering agency for the above authority is OSHA and the California Division of Occupational Safety and Health (Cal/OSHA).

5.5.5.1.2 49 CFR Parts 172, 173, and 179

These regulations provide standards for labels, placards, and markings on hazardous materials shipments by truck (Part 172), standards for packaging hazardous materials (Part 173) and for transporting hazardous materials in tank cars (Part 179). The administering agencies for the above authority are the CHP and U.S. Department of Transportation.

5.5.5.1.3 CERCLA

The Superfund Amendments and Reauthorization Act (SARA) amends CERCLA and governs hazardous substances. The applicable part of SARA for the proposed project is Title III, otherwise known as Emergency Planning and Community Right to Know Act of 1986 (EPCRA), which requires states to establish a process for developing local chemical emergency preparedness programs and to receive and disseminate information on hazardous substances present at facilities in local communities. The law provides primarily for planning, reporting, and notification concerning hazardous substances. Key sections of the law are:

- Section 302 – Requires one-time notification when EHSs are present in excess of their TPQs. EHSs and their TPQs are found in Appendices A and B to 40 CFR Part 355.
- Section 304 – Requires immediate notification to the local emergency planning committee (LEPC) and the state emergency response commission (SERC) when a hazardous material is released in excess of its RQ. If a CERCLA-listed hazardous substance RQ is released, notification must also be given to the National Response Center (NRC) in Washington, D.C. (RQs are listed in 40 CFR Part 302, Table 302.4). These notifications are in addition to notifications given to the local emergency response team or fire personnel.
- Section 311 – Requires that either Material Safety Data Sheet (MSDSs) for all hazardous materials or a list of all hazardous materials be submitted to the SERC, LEPC, and local fire department.
- Section 313 – Requires annual reporting of hazardous materials released into the environment either routinely or as a result of an accident.

The administering agencies for the above authority are the EPA – Region IX, the NRC, and the San Joaquin County Environmental Health Department. The San Joaquin County Environmental Health Department is the designated CUPA for the project site.

5.5.5.1.4 Clean Air Act

Regulations (40 CFR 68) under the CAA are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a TQ or greater of listed regulated substances to develop an RMP, including hazard assessments and response programs to prevent accidental releases of listed chemicals. Section 112(r)(5) of the CAA discusses the regulated substances. These substances are listed in 40 CFR 68.130.

5.5.5.1.5 Clean Water Act

The SPCC program under the CWA is designed to prevent or contain the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Regulations (40 CFR 112) under the CWA require facilities to prepare a written SPCC Plan if they store oil and its release would pose a threat to navigable waters. The SPCC program is applicable if a facility has a single oil container with a capacity greater than 660 gallons, total petroleum storage (including tanks, oil-filled equipment and drums) greater than 1,320 gallons, or underground storage capacity greater than 42,000 gallons. The SPCC program is administered by the local CUPA, which is the San Joaquin County Environmental Health Department.

Other related federal laws that address hazardous materials but do not specifically address their handling, are the Resource Conservation and Recovery Act (RCRA), which is discussed in Section 5.14, Waste Management, and the Occupational Safety and Health Act (OSHA), which is discussed in Section 5.16, Worker Health and Safety.

5.5.5.1.6 Natural Gas Pipeline Construction and Safety

Title 40 of the CFR, Parts 190 through 192, specifies safety and construction requirements for natural gas pipelines. Part 190 outlines pipeline safety procedures, Part 191 requires a written report for any reportable incident, and Part 192 specifies minimum safety requirements for pipelines.

5.5.5.2 State LORS

California laws and regulations relevant to hazardous materials handling at the facility include Health and Safety Code Section 25500 (hazardous materials), Health and Safety Code 25531 (regulated substances), and the Aboveground Petroleum Storage Act (petroleum in aboveground tanks).

5.5.5.2.1 Title 8, California Code of Regulations, Section 339; Section 3200 et seq., Section 5139 et seq. and Section 5160 et seq.

Section 339 of Title 8 of the CCR lists hazardous chemicals relating to the Hazardous Substance Information and Training Act ; 8 CCR Section 3200 *et seq.* and 5139 *et seq.* address control of hazardous substances; 8 CCR Section 5160 *et seq.* addresses hot, flammable, poisonous, corrosive, and irritant substances.

5.5.5.2.2 Health and Safety Code Section 25500

California Health and Safety Code, Section 25500, *et seq.*, and the related regulations in 19 CCR 2620, *et seq.*, require local governments to regulate local business storage of hazardous materials in excess of certain quantities. The law also requires that entities storing

hazardous materials be prepared to respond to releases. Those using and storing hazardous materials are required to submit an HMBP to their local CUPA and to report releases to their CUPA and the State Office of Emergency Services. The TQs for hazardous materials are 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for compressed gases measured at standard temperature and pressure.

5.5.5.2.3 Health and Safety Code Section 25531 (California Accidental Release Program)

California Health and Safety Code, Section 25531, et seq., and the CalARP regulate the registration and handling of regulated substances. Regulated substances are any chemicals designated as an extremely hazardous substance by the EPA as part of its implementation of SARA Title III. Health and Safety Code Section 25531 overlaps or duplicates some of the requirements of SARA and the CAA. Facilities handling or storing regulated substances at or above TPQs must register with their local CUPA and prepare an RMP, formerly known as a Risk Management and Prevention Program. The CalARP is found in Title 19, CCR, Chapter 4.5. The TPQ for ammonia is 500 pounds. Portions of the ammonia process that can be demonstrated to have a partial pressure of the regulated substance in the mixture (solution), under the handling or storage conditions, which is less than 10 millimeters of mercury, do not count toward the threshold.

5.5.5.2.4 Aboveground Petroleum Storage Act

The California Health and Safety Code Sections 25270 to 25270.13 ensure compliance with the federal CWA. The law applies to facilities that operate a petroleum AST with a capacity greater than 660 gallons or combined ASTs capacity greater than 1,320 gallons or oil-filled equipment where there is a reasonable possibility that the tank(s) or equipment may discharge oil in "harmful quantities" into navigable waters or adjoining shore lands. If a facility falls under these criteria, it must prepare a SPCC plan.

5.5.5.2.5 Safe Drinking Water and Toxics Enforcement Act (Proposition 65)

This California law requires the state to identify chemicals that cause cancer and reproductive toxicity, contains requirements for informing the public of the presence of these chemicals, and prohibits discharge of the chemicals into sources of drinking water. Lists of the chemicals of concern are published and updated periodically by California's Office of Environmental Health Hazard Assessment. Some of the chemicals to be used at the facility are on the cancer-causing and reproductive-toxicity lists of the Act.

5.5.5.2.6 Natural Gas Pipeline Construction and Safety

The CPUC enforces General Order No. 58-A specifying standards for natural gas service in the State of California, and General Order No. 112-E specifying rules governing the design, construction, testing, operation, and maintenance of natural gas gathering, transmission, and distribution piping systems. The proposed project will require the construction of a new 2.5-mile-long natural gas line to connect to PG&E high-pressure natural gas pipeline #108.

5.5.5.3 Local LORS

The San Joaquin County Environmental Health Department was approved by the State as the CUPA for San Joaquin County in January of 1997. The San Joaquin County Environmental Health Department administers the Hazardous Waste Generator, Hazardous Waste Onsite Treatment (Tiered Permitting) and Underground Storage Tank programs. The San Joaquin County Office of Emergency Services is a Participating Agency (PA) assisting

the CUPA and administering the Hazardous Material Release Response Plan and Inventories and the CalARP programs.

Both the San Joaquin County Environmental Health Department (as the CUPA) and the San Joaquin County Office of Emergency Services (as the PA) are responsible for administering HMBPs, Hazardous Materials Management Plans, SPCC Plans, and RMPs filed by businesses located in the county. In addition, the San Joaquin County Environmental Health Department is responsible for ensuring that businesses and industry store and use hazardous materials safely and in conformance with various regulatory codes. The San Joaquin County Environmental Health Department performs inspections at established facilities to verify that hazardous materials are properly stored and handled and that the types and quantities of materials reported in a firm's HMBP are accurate (CH2M HILL, 2008).

5.5.5.4 Codes

The design, engineering, construction, and operation of hazardous materials storage and dispensing systems will be in accordance with all applicable codes and standards, including the following:

- California Vehicle Code, 13 CCR 1160, et seq. – Provides the CHP with authority to adopt regulations for the transportation of hazardous materials in California. The CHP can issue permits and specify the route for hazardous material delivery.
- California Fire Code, Articles 79 and 80 – The hazardous materials sections of the Fire Code. Local fire agencies or departments enforce this code and can require that an HMBP and a Hazardous Materials Inventory Statement be prepared. The California Fire Code is based on the Federal Fire Code.
- State Building Standard Code, California Health and Safety Code Sections 18901 to 18949 – Incorporates the Uniform Building Code, Uniform Fire Code, and Uniform Plumbing Code.
- The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section VIII
- California Health and Safety Code Section 25180; San Joaquin County Board of Supervisors Resolution R-95-760 - CUPA Program - The purpose of the Unified Program is to consolidate, coordinate and make consistent the administrative requirements, permitting, inspection activities, enforcement activities and fees for hazardous waste and hazardous materials programs in each jurisdiction. The San Joaquin County Environmental Health Department was approved by the State as the CUPA for San Joaquin County in January of 1997. The San Joaquin County Office of Emergency Services is a Participating Agency (PA) assisting the San Joaquin County Environmental Health Department.
- California Health and Safety Code Section 25200 et seq.; California Code of Regulations Title 22, Section 66001 et seq. - Hazardous Waste Generator Program - The purpose of this program is protection of public health and the environment from exposure to hazardous wastes by regulation of the businesses and industries that generate hazardous waste. This is accomplished through a comprehensive program of inspection,

chemical emergency response, surveillance, complaint investigation, and assistance to industry, enforcement and public education.

- California Health and Safety Code Sections 25200.3, 25201.5; California Code of Regulations Title 22, Section 67450.2 et seq. - Hazardous Waste Tiered Permitting Program - The purpose of this program is ensure that hazardous wastes treated on site prior to reuse or disposal are stored, handled and disposed of in compliance with state and federal laws and regulations. Inspection, surveillance and permitting is required as part of the county Unified Program.
- California Health and Safety Code Sections 25200 et seq. and 101040 - Environmental Health Emergency Response Program - The San Joaquin County Environmental Health Department staff is part of the interagency emergency response team for incidents involving hazardous material spills or releases. The San Joaquin County Environmental Health Department performs a health assessment to evaluate actual or potential environmental contamination and/or human exposure. The San Joaquin County Environmental Health Department provides recommendations for short and long-term cleanup and oversees the cleanup activities performed by the responsible parties or environmental assessment firms. Health follow-up of exposed individuals and their physicians is also conducted. Complaints regarding improper disposal of household hazardous waste are also investigated by the San Joaquin County Environmental Health Department.

5.5.6 Agencies and Agency Contacts

Several agencies regulate hazardous materials, and they will be involved in regulating the hazardous materials stored and used at LEC. At the federal level, the EPA will be involved; at the state level, the California Environmental Protection Agency will be involved.

However, local agencies primarily enforce hazardous materials laws. For LEC, the primary local agencies with jurisdiction will be the San Joaquin County Environmental Health Department, the San Joaquin County Office of Emergency Services, and the Woodbridge Fire Protection District. The persons to contact are shown in Table 5.5-6.

TABLE 5.5-6
Agency Contacts for Hazardous Materials Handling

Issue	Agency	Contact
CUPA for Hazardous Materials Inventory and Emergency Business Plan and Risk Management Plan	San Joaquin County Environmental Health Department 600 E. Main Street Stockton, CA 92505	Kasey Foley Program Coordinator (209) 468-3451 KFoley@sjcehd.com
Fire Department Permits	Woodbridge Fire Protection District 405 E. Augusta Street Woodbridge, CA 95258	Mike Kirkle Fire Chief (209) 369-1945 mike.kirkle@woodbridgefire.com

TABLE 5.5-6
Agency Contacts for Hazardous Materials Handling

Issue	Agency	Contact
Hazardous Materials Response	San Joaquin County Office of Emergency Services 2101 E. Earhart Avenue Suite 300 Stockton, CA 95206	Ron Baldwin Director of Emergency Operations (209) 468-3962 rbaldwin@co.san-joaquin.ca.us
	San Joaquin County Environmental Health Department 600 E. Main Street Stockton, CA 92505	Kasey Foley Program Coordinator (209) 468-3451 KFoley@sjcehd.com

5.5.7 Permits and Plans Required and Permit Schedule

The San Joaquin County Environmental Health Department requires that project developers submit the required reports and obtain the permits listed in Table 5.5-7 before storing hazardous materials on site.

TABLE 5.5-7
Permits and Plans Required and Permit Schedule for Hazardous Materials Handling

Permit	Agency Contact	Schedule
Hazardous Materials Business Plan	San Joaquin County Environmental Health Department Kasey Foley Program Coordinator 600 E. Main Street Stockton, CA 92505 (209) 468-3451 KFoley@sjcehd.com	Approximately 60 days before any regulated substance comes on site.
Risk Management Plan	San Joaquin County Environmental Health Department Kasey Foley Program Coordinator 600 E. Main Street Stockton, CA 92505 (209) 468-3451 KFoley@sjcehd.com	Approximately 60 days before any regulated substance comes on site

5.5.8 References

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