4.6 HAZARDS AND HAZARDOUS MATERIALS

This section evaluates the potential effects on the public or environment from the storage and use of hazardous materials for the Project. This section also discusses reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. It presents the LORS related to hazardous materials, describes existing conditions, identifies potential impacts on the public and environment from routine transport, use, and disposal of hazardous materials, and presents mitigation measures to reduce potentially significant impacts.

4.6.1 ENVIRONMENTAL SETTING

4.6.1.1 Existing Conditions

The Project site has been used as an operating power plant since 1941 (City of Glendale Water and Power Department, 2016a). Throughout the history of the power plant a number of environmental investigations have occurred to evaluate potential contamination from the use of hazardous materials during operation of the facility. These investigations focused on impacts to soil and groundwater from facility operations. The site received 'Completed - Case Closure' status from the Regional Water Quality Control Board – Los Angeles Region on June 29, 2011, based on concurrence from the board of the results of the soil and groundwater analysis suggesting that the Grayson Power Plan did not contribute to the regional groundwater contamination. Recently, a Phase I Environmental Site Assessment, and Phase II Environmental Site Assessment were conducted by the City of Glendale Water and Power Department (City of Glendale Water and Power, 2016a; City of Glendale Water and Power Department, 2016b) to assess potential soil, soil vapor and groundwater contamination that may have resulted from the current or historical use of the site and adjacent and nearby properties. Properties in the vicinity of the site historically operated as gas stations, airport, and manufacturers of aerospace sealants and coatings.

As such, the site has used a variety of chemicals in the operation of the power plant. These general classes of chemicals include: petroleum, oils, and lubricants; cleaners, solvents, and degreasers; acids, bases, and dielectric fluids; and paints, sealants, and coatings. Many of these chemicals are classified as hazardous materials by federal and state laws; however, during the site reconnaissance conducted for Phase I Site assessment, all chemicals were appropriately stored with secondary containment and no significant spills were observed. Hazardous materials proposed for use and storage on-site during construction and operation at the Project site are indicated in Table 4-38. The purpose for use of the hazardous material as well as quantities used and stored and the storage container is also indicated in Table 4-38. As an operational power production facility, many of these materials are currently used and stored on the Project site.

As part of these studies, the following facilities and storage areas were identified where hazardous materials were handled or stored:

- Six air compressors placed on concrete floors;
- An aboveground, 12,000-gallon capacity and an aboveground, 9,000-gallon capacity aqueous ammonia tanks with secondary containment used for NOx reduction and a 1,500-gallon sodium hypochlorite tank with secondary containment used for purification of reclaimed water;
- Three chemical storage areas which stored petroleum hydrocarbons and hazardous chemicals in varying quantities - All chemicals were appropriately stored indoors, covered with secondary containment;
- Five cooling towers, four with associated abandoned Underground Fuel Oil Storage Tanks, placed on a concrete base;
- Six boilers placed on concrete floors;
- Numerous 55-gallon drums and barrels containing lube oil in the basement of the Boiler room building. Lube oil for pumps, turbines and air compressors; and synthetic jet engine oil. Most drums were stored on secondary containment which was placed on a concrete floor;
- Storage of polychlorinated biphenyl containing pad and pole mounted transformers.

All chemicals were appropriately stored indoors, covered with secondary containment, on concrete floors with sealed containers and no significant spills were observed during the site reconnaissance. The polychlorinated biphenyl containing transformers were placed on concrete floors which minimized the probability of soil contamination. No significant spills were observed in the vicinity of the compressors and boilers and no significant cracks were observed on the concrete floors. Per the environmental database research conducted during Phase I Site assessment, no leaks or violations associated with the existing underground storage tanks and aboveground storage tanks were reported. The Phase I Environmental Site Assessment is included as Appendix E.1.

Based on the Phase II Environmental Site Assessment, low level petroleum hydrocarbon contamination was detected in soils at localized areas on the facility consisting of gasoline, diesel, and fuel oil related petroleum. Volatile organic compounds and petroleum hydrocarbons were detected in groundwater samples collected during the Phase II Environmental Site Assessment (City of Glendale Water and Power Department, 2016b). The Phase II Environmental Site Assessment is included as Appendix E.2.

A pre-demolition asbestos and lead-based paint survey was conducted at the facility to identify equipment and building materials potentially containing asbestos and lead-based paint (City of Glendale, 2016b). A variety of building materials and equipment were sampled including power generation structures and equipment, maintenance and operation shops, administrative offices, and electric equipment. Asbestos and lead-based paint were detected in a variety of building materials and structures. The pre-demolition asbestos and lead-based paint survey report is included as Appendix G.1.

The below table references the potential hazardous materials that may be used and/or stored onsite once the Project is in operation.

Table 4-38 Hazardous Materials Proposed for Use and Storage On-site at the Grayson Repowering Project

Material	Purpose	Average Usage/Day	Maximum Quantity on Site	Storage Type
CONSTRUCTION				
Acetylene	Welding	As needed	270 cubic feet	Cylinder
Antifreeze 50/50 (ethylene glycol)	Antifreeze and corrosion inhibitor	Small periodic use based upon level	100 gallons	Contained within equipment and extra stored in 5-gallon containers
Argon	Welding	As needed	270 cubic feet	Cylinder
Diesel fuel # 2 (ultra-low sulfur)	Construction vehicles and equipment - fuel	30 gallons	1,000 gallons	Contained within construction equipment and 50-gallon portable tank
Motor oil	Construction vehicles and equipment	1 gallon	125 gallons	55-gallon drums
Oily rags, oil absorbent generated during normal construction activities	Routine construction waste products	5 gallons	110 gallons	55-gallon drums
Transmission fluid	Construction vehicles and equipment	As needed	300 gallons	Vehicles' transmissions
Unleaded gasoline	Construction vehicles and equipment - fuel	20 gallons	2,000 gallons	Contained within equipment (vehicles) and 50-gallon portable tank
Used and waste lube oil during Combustion	Commissioning		220 gallons	55-gallon drums

Material	Purpose	Average Usage/Day	Maximum Quantity on Site	Storage Type
Turbine Generator and Steam Turbine Generator lube oil flushes				
Waste fluids (i.e. motor oil, transmission fluid, hydraulic fluid, and antifreeze)	Routine maintenance of vehicles and equipment	5 gallons	100 gallons	55-gallon drums
Waste oil filters	Commissioning		110 gallons	55-gallon drums
Waste paint, thinners, and solvents	Routine construction waste products	<0.5 gallons	55 gallons	55-gallon drums
Waste welding materials	Waste material from welding activities associated with construction	5 gallons	110 gallons	55-gallon drum
OPERATIONS				
Acetylene	Welding	As needed	270 cubic feet	Cylinder
Ammonia hydroxide (19%) $NH_4(OH)$ (aqueous ammonia)	Control of NOx emissions through SCR; and control of steam cycle pH	1,350 gallons	24,000 gallons	Two aboveground tanks (one existing for Unit 9)
Ammonium bifluroridem (NH_4HF_2)	Chemical cleaning of Heat Recovery Steam Generator	As needed	Temporary only	Portable vessel
Antifreeze 50/50 (ethylene glycol)	Emergency generator coolant	<0.1 gallons	50 gallons	Contained within equipment and extra stored in 5 gallon containers
Anti-scalent (e.g. Avista Vitec 300)	Prevent scale in reverse osmosis membranes	0.5 gallons	330 gallons	Tote
Anti-foam (e.g. SJC, Inc. Foampress 1)	Cooling tower foam control	<0.5 gallons	110 gallons	55 gallon drums
Argon	Welding	As needed	270 cubic feet	Cylinder
Citric acid	Chemical cleaning of Heat Recovery Steam Generator, feed water systems	As needed	Temporary only	Portable vessel
Detergents (various)	Equipment cleaning	As needed	220 gallons	55 gallon drums

Material	Purpose	Average Usage/Day	Maximum Quantity on Site	Storage Type
Dielectric fluid	Transformer insulating medias	N/A – replaced based on periodic oil analysis	35,000 gallons	Contained within equipment
Diesel fuel #2 (ultra-low sulfur)	Emergency generator fuel	15 gallons per month for periodic testing	500 gallons	Tank, Steel tank
Diesel engine oil	Emergency generator lubricating oil	<0.1 gallons	25 gallons	Contained within equipment and extra stored in 5 gallon containers
Dispersant/corrosion inhibitor (e.g. SJC, Inc. Sanacor 2301A, 2653)	Scale/corrosion control (cooling tower, circulating water, closed loop cooling	1.5 gallons	800 gallons	Totes (2 – 400 gallon totes)
EDTA chelant	Chemical cleaning of Heat Recovery Steam Generator, feed water systems	As needed	Temporary only	Portable vessel
Gas turbine cleaning fluid	Periodic cleaning of combustion turbine	1 gallon	165 gallons	55 gallon drums
Gear oil (e.g. Mobilegear 600 XP 150)	Lubrication for cooling tower gearboxes	1 gallon	230 gallons	Contained within equipment and extra stored in containers
Hydrochloric acid (HCl)	Chemical cleaning of Heat Recovery Steam Generator and piping systems	As needed	Temporary only	Portable vessel
Hydraulic oil (e.g. Mobil Jet Oil 254)	Hydraulics/lubrication of combustion and steam turbine - generators	N/A – replaced based on periodic oil analysis	14,000 gallons	Contained within equipment and extra stored in drums
Natural gas	Fuel for power generation	20 million standard cubic feet per day	N/A – None stored on site	Contained within equipment and piping
Nitrogen	Transformers, purging gas lines, laying up Heat Recovery Steam Generator	As needed	275 cubic feet	Cylinder

Material	Purpose	Average Usage/Day	Maximum Quantity on Site	Storage Type
Non – oxidizing biocide (isothiazolone solution) (e.g. SJC, Inc. A-102)	Cooling tower algaecide control	<0.2 gallons	550 gallons	2 – 275 gallon totes
Oxygen - gaseous	Welding	As needed	275 cubic feet	Cylinder
Paint	Touchup of painted surfaces	As needed	10 gallons	Can
Propane	Miscellaneous heating activities	10 pounds	75 pounds	Cylinder
Sodium bisulfite (38%) (e.g. Avista AntiChlor 427)	Reduce oxidizer in reverse osmosis feed to protect the reverse osmosis membranes	1 gallon	330 gallons	Portable vessel
Sodium carbonate (Soda ash)	Spill neutralization	As needed	400 pounds	Bags
Sodium hypochlorite (12% Solution)	Cooling tower and raw water storage tank biological control	50 gallons	3,500 gallons	Aboveground storage tank and tote
Sodium hydroxide (NaOH) (50% Solution)	Ion exchanger (demineralizer) regenerate (water treatment)	1.5 gallons	400 gallons	Tote
Sodium nitrate $NaNO_2$	Chemical cleaning of Heat Recovery Steam Generator	As needed	Temporary only	Portable vessel
Sulfur hexafluoride (SF6)	Switchyard breaker insulating medium	N/A – Small periodic use based upon pressure	6,000 pounds	Contained within equipment
Sulfuric acid (93%)	Cooling tower pH control: and water treatment ion exchanger (demineralizer) regenerate (water treatment)	40 gallons	4,000 gallons	Aboveground storage tank (3,500 gallons) and 400-gallon tote
Sulfuric acid (lead-acid batteries)	Battery electrolyte – Emergency generator batteries	Small periodic use based upon level	500 gallons	Contained within equipment
Synthetic oil (e.g. Mobil Jet Oil 254)	Lubrication of simple cycle combustion turbines	N/A – replaced based on periodic oil analysis	400 gallons	Contained within equipment and extra stored in 55-gallon drum

Material	Purpose	Average Usage/Day	Maximum Quantity on Site	Storage Type
Tri-sodium phosphate (Na_3PO_4) (e.g. SJC, Inc. – 8359-DI)	Heat Recovery Steam Generator water pH control	0.2 gallons	55 gallons	55-gallon drum

4.6.2 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The storage and use of hazardous materials at the Grayson Power Plant site 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 as well as to protect facility workers and the surrounding community from exposure to hazardous materials. The LORS related to hazardous materials are listed in Table 4-39.

Table 4-39 Applicable Federal, State, Local LORS for Hazards

LORS	Administering Agency
Federal	
Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act	US Environmental Protection Agency (USEPA)
Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act	USEPA
Clean Water Act/Spill Prevention, Control, and Countermeasure Rule	USEPA
Clean Air Act/Chemical Accident Prevention Provisions	USEPA
Other Regulations – Code of Federal Regulations	USEPA
Occupational Safety and Health Act	Occupational Safety and Health Administration (OSHA); Administered by Cal-OSHA
State	
Hazardous Materials Release Response Plans and Inventory Act of 1985	California Environmental Protection Agency (CalEPA)
Hazardous Waste Control Act	CalEPA
Unified Hazardous Waste and Hazardous Materials Management Regulatory Program	CalEPA; City of Glendale Fire Department (acting as CUPA)
Asbestos & Lead – California Code of Regulations	Cal-OSHA
Local	
City of Glendale General Plan, Safety Element	City of Glendale
Asbestos Emissions from Demolition/Renovation Activities	South Coast Air Quality Management District (Rule 1403)
City of Glendale Fire Department, Certified Unified Program Agency (CUPA) for the City of Glendale	City of Glendale

Federal LORS

Federal Toxic Substances Control Act/Resource Conservation and Recovery Act/Hazardous and Solid Waste Act

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the USEPA to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as "Superfund," were enacted by Congress on December 11, 1980. This law (42 United States Code [USC] 103) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA establishes requirements concerning closed and abandoned hazardous waste sites, provides for liability of persons responsible for releases of hazardous waste at these sites, and establishes a trust fund to provide for cleanup when no responsible party can be identified. CERCLA also enables the revision of the National Contingency Plan (NCP). The NCP (Title 40, Code of Federal Regulations [CFR], Part 300) provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

Clean Water Act/Spill Prevention, Control, and Countermeasure Rule

The Clean Water Act (CWA) (33 USC 1251 et seq., formally known as the Federal Water Pollution Control Act of 1972) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of waters of the United States. As part of the CWA, the USEPA oversees and enforces the Oil Pollution Prevention regulation contained in 40 CFR 112, which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend, and implement spill prevention, control, and countermeasure (SPCC) plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total aboveground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "Navigable Waters" of the United States.

Clean Air Act/Chemical Accident Prevention Provisions

Regulations (40 CFR Part 68) under the Clean Air Act (CAA) are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store a Threshold Quantity (TQ) or greater of listed regulated substances to develop a Risk Management Plan (RMP), including hazard assessments, prevention programs 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. Aqueous ammonia is a listed substance and its TQ for solutions of 20 percent and greater is 20,000 pounds of solution.

Other Regulations

Other federal regulations overseen by the USEPA relevant to hazardous materials and environmental contamination include 40 CFR Parts 100 to 149 -- Water Programs, 40 CFR Parts 239 to 259 -- Solid Wastes, and 40 CFR Parts 260 to 279 -- Hazardous Waste. These regulations designate hazardous substances under the CWA; determine the reportable quantity for each substance that is designated as hazardous; and establish quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration's (OSHA's) mission is to ensure the safety and health of U.S. workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. The OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. OSHA standards are listed in 29 CFR 1910. 29 CFR 1926.62 addresses safety and health regulations for construction involving lead. 29 CFR 1910.1001 and 1926.1101 address asbestos exposure for general industry and for the construction industry respectively.

State LORS

Hazardous Materials Release Response Plans and Inventory Act of 1985

The Hazardous Materials Release Response Plans and Inventory Act, also known as the Business Plan Act, requires businesses using hazardous materials to prepare a plan that describes their facilities, inventories, emergency response plans, and training programs. Hazardous materials are defined as unsafe raw or unused materials that are part of a process or manufacturing step. They are not considered hazardous waste. Health concerns pertaining to the release of hazardous materials, however, are similar to those relating to hazardous waste.

Hazardous Waste Control Act

The Hazardous Waste Control Act created the state hazardous waste management program, which is similar to but more stringent than the federal RCRA program. The act is implemented by regulations contained in Title 26 CCR, which describes the following required aspects for the proper management of hazardous waste:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

These regulations list more than 800 materials that may be hazardous and establish criteria for identifying, packaging, and disposing of such waste. Under the Hazardous Waste Control Act and Title 26, the generator of hazardous waste must complete a manifest that accompanies the waste from generator to transporter to the ultimate disposal location. Copies of the manifest must be filed with the California Department of Toxic Substances and Control (DTSC).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill 1082 (1993) created the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program), which requires the administrative consolidation of six hazardous materials and waste programs (Program Elements) under one agency, a Certified Unified Program Agency (CUPA). The Program Elements consolidated under the Unified Program are as follows:

- Hazardous Waste Generator and On-site Hazardous Waste Treatment Programs (i.e., Tiered Permitting);
- Aboveground Petroleum Storage Tank Program;
- Hazardous Materials Release Response Plans and Inventory Program (i.e., Hazardous Materials Disclosure or "Community-Right-To-Know");
- California Accidental Release Prevention Program (Cal ARP);
- UST Program; and
- Uniform Fire Code Plans and Inventory Requirements.

The Unified Program is intended to provide relief to businesses in complying with the overlapping and sometimes conflicting requirements of formerly independently managed programs. The Unified Program is implemented at the local government level by CUPAs. Most CUPAs have been established as a function of a local environmental health or fire department. Some CUPAs have contractual agreements with another local agency, a participating agency, which implements one or more Program Elements in coordination with the CUPA.

Cal ARP is the Federal Risk Management Plan Program with additional state requirements, including an additional list of regulated substances and thresholds. While the federal program does not regulate the use of aqueous ammonia under a 20% concentration, Cal ARP regulates the use of aqueous ammonia with a concentration of 1% or greater if a threshold quantity of 500 pounds of ammonia is reached.

Asbestos and Lead– California Code of Regulations

In California, potential asbestos exposure in construction is regulated when construction, alteration, repair, maintenance, renovation or demolition of structures, substrates, or portions thereof contain asbestos [8 CCR §1529 (a)(1)(C)]. Additionally, in California, materials containing greater than one-tenth of one percent (>0.1%) asbestos by weight are regulated as asbestos-containing construction materials.

The State of California, Title 17, Division 1, and Chapter 8 (herein referred to as "Title 17") pertains to all public and residential buildings in California. Pursuant to Title 17 and USEPA regulations, lead-based paint is defined as paint or other surface coatings containing an amount of lead equal to or greater than one milligram per square centimeter (1.0 mg/cm2) or more than half of one percent [>0.5% or 5,000 parts per million(ppm)] by weight. Title 17 also defines a lead hazard as deteriorated lead-based paint, disturbing lead-based paint or presumed lead-based paint without containment, or any other nuisances which may result in persistent or quantifiable lead exposure. Additionally, worker exposure to materials containing lead during construction work is regulated by 8 CCR §1532.1(a). These regulations require worker protection during construction "…where lead or materials containing lead are present."

Local LORS

City of Glendale General Plan, Safety Element

The Glendale General Plan, Safety Element includes the following policies applicable to hazardous materials:

Goal 5: Reduce threats to the public health and safety, and to the environment, from hazardous materials.

Policy 5-1 The City shall strive to reduce the potential for residents, workers, and visitors to Glendale to being exposed to hazardous materials and wastes.

South Coast Air Quality Management District Rule 1403, Asbestos Emissions from Demolition/Renovation Activities

This rule applies to any demolition or renovation activity and the associated disturbance of asbestos containing material. The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM). The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials (ACWM).

Certified Unified Program Agency (CUPA) for the City of Glendale

Starting on January 1, 2013, all CUPA-regulated businesses are required by law (Assembly Bill 2286) to submit business information electronically through the California Environmental Reporting System (CERS). Instead of printing and submitting your forms on paper, Glendale businesses are required to establish an account with CERS and file their information related to CUPA elements electronically.

Glendale Fire Department has the responsibility to administer and enforce all six Program Elements of the Unified Program, along with the Industrial Waste Program, as well as, the Uniform Fire Code. The six Program Elements that are consolidated under the Unified Program are:

- Hazardous Waste Generation and On-site Treatment
- Underground Storage Tank Program (UST)
- Above Ground Storage Tanks - Spill Prevention Control and Countermeasure Plan (SPCC)
- Hazardous Materials Release Response Plans and Inventories
- California Accidental Release Program (CalARP)
- Uniform Fire Code and Hazardous Materials Management Plan

4.6.3 ENVIRONMENTAL IMPACTS

4.6.3.1 Methodology

There are three phases of the Project that will handle, store, or use hazardous materials: 1.) Decommissioning and Demolition of Existing Facilities; 2.) Construction of New Facilities; and 3.) Operation of the Repowered Power Plant. Potential impacts from each of these three phases are described in this section.

Thresholds of Significance

As described in the Grayson Repowering Project Initial Study, only two criteria from Appendix G of the CEQA Guidelines related to Hazards and Hazardous Materials were determined to result in potentially significant impacts (City of Glendale, 2016a). Other criteria from Appendix G of the CEQA Guidelines related to Hazards and Hazardous Materials were determined to result in less than significant impacts or no impacts. Therefore, only the two criteria determined to result in potentially significant impacts from the Initial Study will be discussed in this analysis.

Based on Appendix G of the GEQA Guidelines, implementation of the Project would result in a significant adverse impact on the environment related to hazards and hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal 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.

4.6.4 PROJECT IMPACTS

Threshold: ***Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?***

Decommissioning and Demolition

As described in the Project Description, above- and below-ground facilities associated with the majority of power production and ancillary facilities would be demolished and removed from the Project site. Prior to demolition, hazardous materials stored in equipment and buildings would be removed and disposed offsite in accordance with regulatory requirements. Structures and equipment containing asbestos or lead based paint would be decontaminated or encapsulated prior to demolition and removed from the site and disposed in accordance with regulatory requirements.

Soil contaminated with petroleum hydrocarbons may be encountered during subsurface demolition activities based on soil sampling surveys and analysis. Although it is unlikely to encounter groundwater during demolition activities, volatile organic compounds found in groundwater samples indicates that soil may be contaminated with volatile organics and could be encountered during subsurface demolition activities. Excavation, handling, and transport of contaminated soil and ground water has the potential to impact workers and the public if not handled and contained properly.

Level of Significance before Mitigation:

Potentially Significant Impact

Mitigation Measures:

HAZ-1: Prior to demolition of facilities associated with the Grayson Repowering Project, hazardous materials stored onsite and not required for continued operation of the facility shall be inventoried, packaged, removed, and disposed in accordance with a Hazardous Materials Management Plan prepared by the demolition contractor and submitted to the City for review and approval prior to initiating demolition activities.

HAZ-2: Buildings or equipment to be demolished containing lead based paint or asbestos shall be either decontaminated or encapsulated prior to removal from the Project site and disposed in accordance with an Asbestos and Lead Paint Management Plan prepared by the demolition contractor and submitted to the City for review and approval prior to initiating demolition activities.

HAZ-3: Contaminated soil encountered during demolition activities shall be handled, removed, and disposed in accordance with regulatory requirements and the Project's Soil Management

Level of Significance after Mitigation:

Less than Significant Impact with Mitigation

Construction

Hazardous materials used during construction of the Project will include gasoline, diesel fuel, motor oil, hydraulic fluid, solvents, cleaners, sealants, welding flux, various lubricants, paint, and paint thinner. The types of paint to be used will be dictated by the types of equipment and structures that must be coated and by manufacturer specifications.

The quantities of hazardous materials that will be used onsite during construction will be limited to the quantities required to complete construction of the Project. The potential exists for fuels, oil, and grease to drip from construction equipment. The volume of incidental drips of petroleum products is not anticipated to require clean up or disposal of hazardous materials. Spills of fuel may occur during onsite refueling operations if refueling operations are not conducted properly. It is not anticipated that spills related to refueling operations would be large and would be limited to the immediate area and cleaned up at the time of the spill using spill kits stationed on the fuel truck. It is unlikely that the volume of refueling spills will travel beyond the immediate area of the spill and impact offsite receptors.

Level of Significance before Mitigation:

Potentially Significant Impact

Mitigation Measures:

HAZ-4: Hazardous materials used during construction shall be limited to the quantities required for construction and shall be stored and handled in accordance with regulatory requirements.

HAZ-5: Utility trucks and refueling trucks operating onsite shall have a spill kit onboard at all times. Small spills of petroleum products or other hazardous materials during construction operations shall be reported to the Construction Supervisor and a Spill Response form completed with a description of the type and quantity of the spill accompanied by photographs and a description of the disposition of the spill material. Hazardous spill material shall be disposed according to regulatory requirements. In the event of a large spill of hazardous materials equal to or above reportable quantities federal, state, and local reporting requirements shall be followed.

Level of Significance after Mitigation:

Less than Significant Impact with Mitigation

Operation

A list of hazardous materials anticipated to be used during the operation of the Project is provided in Table 4-38. The types and quantities of hazardous materials anticipated to be used and stored onsite during operation of the Project is consistent with the types and quantities of hazardous materials currently used and stored onsite. Use, storage, handling, disposal, and reporting of these hazardous materials is anticipated to be consistent with current practices and regulatory requirements. Therefore, no impacts are anticipated.

Level of Significance before Mitigation:

Less than Significant Impact

Mitigation Measures:

No mitigation is required

Level of Significance after Mitigation:

Less than Significant Impact

Threshold: ***Would the Project 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?***

Operation

The Grayson Power Plant currently uses 19-percent aqueous ammonia solution in the Selective Catalytic Reduction process to control NOx emissions from generation equipment. The 19-percent aqueous ammonia is stored in a 12,000-gallon capacity above ground storage tank. The tank is surrounded by a secondary concrete containment structure that measures 38.5 feet long, 13.5 feet wide and 4.5 feet deep. The secondary containment structure can hold the entire contents of the tank, plus rain water accumulation. The Project would maintain the existing 19-percent aqueous ammonia tank and would add a second tank of the same volume and containment system.

An offsite consequence analysis was performed for the accidental release of aqueous ammonia using the U.S. Environmental Protection Agency approved SLAB[10] dispersion model. The analysis assumed the complete failure of the storage tank, the immediate release of the contents of the tank and the formation of an evaporating pool of aqueous ammonia within the secondary containment structure. Under this scenario, evaporative emissions of ammonia would be subsequently released into the atmosphere. The dispersion and transport of these emissions into the atmosphere would be subject to meteorological conditions at the time of the release. To be conservative, worst-case meteorological data were used in the offsite consequence analysis pursuant with U.S. Environmental Protection Agency's Risk Management Program Guidance for Offsite Consequence Analysis (EPA, 2009).

To further provide a conservative analysis of potential offsite consequences of an ammonia release, a concentration of 75 parts per million ammonia has been adopted as the applicable significance threshold. The 75 parts per million threshold is considered by the California Energy Commission to be the concentration the public could be exposed to during a one-time event without experiencing serious adverse effects. For comparison, the Occupational Safety and Health Administration's Immediately Dangerous to Life and Health concertation for ammonia is 300 ppm and U.S. Environmental Protection Agency's Accidental Release Prevention Program Toxic Endpoint concentration for ammonia is 200 ppm. As it relates to the Project, a concentration of ammonia exceeding 75 parts per million beyond the property boundary of the power plant would be considered a potentially significant impact. The nearest property boundary is approximately 70 feet from the nearest ammonia tank. The Offsite Consequence Analysis for Ammonia is included in Appendix G.2.

[10] The SLAB model treats denser-than-air releases by solving the one-dimensional equations of momentum, conservation of mass, species, and energy, and the equation of state. SLAB handles release scenarios including ground level and elevated jets, liquid pool evaporation, and instantaneous volume sources.

The results of the offsite consequence analysis for the worst-case release of ammonia indicate that the 75 parts per million concentration would extend 528 feet from the ammonia tank/release. This distance would extend beyond the Grayson Power Plant eastern property boundary and is considered a potentially significant impact.

Level of Significance before Mitigation:

Potentially Significant Impact

Mitigation Measures:

HAZ-6: The surface area of the proposed and existing ammonia tank containment systems shall be effectively reduced by 90 percent or greater through the installation and maintenance of three-inch diameter high density polyethylene balls or similar method.

Level of Significance after Mitigation:

Less than Significant Impact with Mitigation Incorporated