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4.10 WORKER HEALTH AND SAFETY

This section summarizes the health and safety issues that may be encountered during the construction and operation of the Quail Brush Generation Station (Project or Quail Brush), a nominal 100 MW intermediate/peaking load facility operating up to 3,800 hours per year using natural gas-fired reciprocating engine technology.

4.10.1 Affected Environment

The Project will consist of the construction and operations of 11 natural gas-fired Wartsila reciprocating engine generator sets and associated equipment. The proposed Project will be constructed over a 18-month period. The proposed Project will consist of the power plant and access road, the SDG&E utility switchyard, the 230kV gen tie, and the 8-inch natural gas pipeline lateral. The Project is located south of the Sycamore Landfill in the eastern part of the City of San Diego (Figure 2.1-1).

4.10.2 Environmental Consequences

During Project activities, workers may be exposed to construction and plant operation safety hazards. Hazard analyses have been prepared for both construction and operations that identify the hazards anticipated and the safety programs that would be developed and implemented to mitigate and appropriately manage those hazards. The hazard analysis prepared for construction activities is outlined in Table 4.10-1; the hazard analysis prepared for plant operations is outlined in Table 4.10-2.

4.10.2.1 Construction Impacts

Table 4.10-1 lists construction activities and associated hazards along with the associated program designed to reduce the occurrence of each hazard.

Table 4.10-1 Construction Hazard Analysis

Activity	Hazard	Control
Motor vehicle and heavy equipment use	Employee injury and property damage from collisions between people and equipment	Motor Vehicle and Heavy Equipment Safety Program
Forklift operation	Employee injury and property damage from collisions between people and equipment	Forklift Operation Program
Trenching and excavation	Employee injury and property damage from the collapse of trenches and excavations	Excavation/Trenching Program
Use of cranes and derricks	Property damage from falling loads; employee injuries from falling loads; and injuries and property damage from contact with crane derrick	Crane and Material Handling Program
Working with flammable and combustible liquids	Employee injury and property damage from Fires/Spills	Fire Protection and Prevention Program; Housekeeping and Material Handling and Storage Program

4.10 Worker Health and Safety

Activity	Hazard	Control
Hot Work (including cutting and welding)	Employee injury and property damage from fire; exposure to fumes during cutting and welding; ocular exposure to ultraviolet and infrared radiation during cutting and welding	Hot Work Safety Program; Respiratory Protection Program; Employee Exposure Monitoring Program; Personal Protective Equipment Program
Inspection and maintenance of temporary systems used during construction activities	Employee injury and property damage from contact with hazardous energy sources (electrical, thermal, mechanical, etc.)	Electrical Safety Program; Personal Protective Equipment Program
Working on electrical equipment and systems	Employee contact with live electricity and energized equipment	Electrical Safety Program; Personal Protective Equipment Program
Exposure to hazardous waste	Personnel who are working with or have the potential to be exposed to contaminated soil, groundwater, or debris during construction	Hazardous Waste Program; Personal Protective Equipment Program
Confined space entry	Employee injury from physical and chemical hazards	Permit-Required Confined-Space Entry Program
General construction activity	Employee injury from hand and portable power tools	Hand and Portable Power Tool Safety Program; Personal Protective Equipment Program
General construction activity	Employee injury/property damage from inadequate walking and work surfaces	Back Injury Prevention Program; Personal Protective Equipment Program; Scaffolding/Ladder Safety Program; Articulating Boom Platforms Program
General construction activity	Employee exposure to occupational noise	Personal Protective Equipment Program; Hearing Conservation Program
General construction activity	Employee injury from improper lifting and carrying of materials and equipment	Back Injury Prevention Program; Injury and Illness Prevention Program
General construction activity	Employee exposure to various hazards; reporting of hazardous conditions during construction	Hazard Communication Program; Respiratory Protection Program; Personal Protective Equipment Program; Air Monitoring Program
General construction activity	Heat and cold stress	Heat and Cold Stress Monitoring and Control Program
Construction and testing of high-pressure steam and air systems	Employee injury and property damage due to failure of pressurized system components or unexpected release of pressure	Pressure Vessel and Pipeline Safety Program; Electrical Safety Program
Munitions and Explosives of Concern (MEC)	Employee injury and property damage due to MEC	Digital Geophysical Mapping Plan

Notes:

The hazards and hazard controls provided are generic to construction activities. During various phases of construction, a hazard analysis will be performed to evaluate the hazards and develop appropriate controls.

4.10.2.2 Operations Impacts

Table 4.10-2 lists operation activities and associated hazards with the associated program designed to reduce the occurrence of each hazard.

Table 4.10-2 Operations Hazard Analysis

Activity	Hazard	Control
Motor vehicle and heavy equipment use	Employee injury and property damage from collisions between people and equipment	Motor Vehicle and Heavy Equipment Safety Program
Forklift operation	Employee injury and property damage from collisions between people and equipment.	Forklift Operation Program
Trenching and excavation	Employee injury and property damage from the collapse of trenches and excavations	Excavation/Trenching Program
Use of cranes and derricks	Property damage from falling loads; employee injuries from falling loads; and injuries and property damage from contact with crane derrick	Crane and Material Handling Program
Working with flammable and combustible liquids	Employee injury and property damage from Fires/Spills	Fire Protection and Prevention Program; Housekeeping and Material Handling and Storage Program
Hot Work (including cutting and welding)	Employee injury and property damage from fire; exposure to fumes during cutting and welding; ocular exposure to ultraviolet and infrared radiation during cutting and welding	Hot Work Safety Program; Respiratory Protection Program; Employee Exposure Monitoring Program; Personal Protective Equipment Program
Troubleshooting and maintenance of plant systems and general operational activities	Employee injury and property damage from contact with hazardous energy sources (electrical, thermal, mechanical, etc.)	Electrical Safety Program; Personal Protective Equipment Program
Working on electrical equipment and systems	Employee contact with live electricity and energized equipment	Electrical Safety Program; Personal Protective Equipment Program
Confined space entry	Employee injury from physical and chemical hazards	Permit-Required Confined-Space Entry Program
General plant operation activities	Employee injuries from hand and portable power tools	Hand and Portable Power Tool Safety Program; Personal Protective Equipment Program
General plant operation activities	Employee injury and property damage from inadequate walking and work surfaces	Back Injury Prevention Program; Personal Protective Equipment Program; Scaffolding/Ladder Safety Program; Articulating Boom Platforms Program
General plant operation activities	Employee overexposure to occupational noise	Hearing Conservation Program; Personal Protective Equipment Program
General plant operation activities	Employee injury from improper lifting and carrying of materials and equipment	Back Injury Prevention Program; Injury and Illness Prevention Program

Activity	Hazard	Control
General plant operation activities	Employee injury and property damage from unsafe driving	Safe Driving Program
General plant operation activities	Employee overexposure to hazardous gases, vapors, dusts, liquids, and fumes	Hazard Communication Program; Respiratory Protection Program; Personal Protective Equipment Program; Employee Exposure Monitoring Program; Air Monitoring Program
General plant operation activities	Reporting and repair of hazardous conditions	Hazard Communication Program; Respiratory Protection Program; Personal Protective Equipment Program; Air Monitoring Program
General plant operation activities	Heat and cold stress	Heat and Cold Stress Monitoring and Control Program
General plant operation activities	Ergonomic injuries	Ergonomic Awareness Program
Maintenance and repair of high-pressure steam and air systems	Employee injury and property damage due to failure of pressurized system components or unexpected release of pressure	Pressure Vessel and Pipeline Safety Program; Electrical Safety Program
Munitions and Explosives of Concern (MEC)	Employee injury and property damage due to MEC	Digital Geophysical Mapping Plan

4.10.3 Health and Safety Programs

To protect the safety and health of workers during the construction and operations of the proposed Project, health and safety programs will be implemented to mitigate hazards and comply with applicable regulations. Periodic audits will be performed by qualified individuals to determine whether proper work practices are being used to mitigate hazardous conditions and to evaluate regulatory compliance. The following subsections contain information on the anticipated content of the health and safety programs.

The health and safety programs will emphasize comprehensive training to ensure that employees recognize and understand how to protect themselves from potential hazards during this Project. Each of the safety procedures developed to control and mitigate potential site hazards will require some form of training. Training will be delivered in various ways, depending on the requirements of Cal-OSHA standards, the complexity of the task, the characteristics of the workforce, and the degree of risk associated with each of the identified hazards.

The following subsections contain information on the anticipated content of the health and safety programs. Tables 4.10-3 outlines the health and safety programs that will be used to protect construction personnel. Tables 4.10-4 summarizes the safety training courses that will be provided to both construction and operations personnel. Table 4.10-5 provides the health and safety programs that will be used to protect operations personnel.

4.10.3.1 Construction Health and Safety Programs

The construction health and safety programs will be developed and implemented during construction of the proposed Project, as outlined in Table 4.10-3.

Table 4.10-3 Construction Health and Safety Programs

Health and Safety Program	Program Elements Outline
Injury and Illness Prevention	<ul style="list-style-type: none"> • Philosophy and safety commitment • Safety leadership and responsibilities • Accountability • Specific core safety processes (see Construction Safety Programs later in this section) • Employee communication • Planning “job hazard analysis and pre-task” • Compliance with work rules and safe work practices • Measurement of compliance and effectiveness of prevention methods • Communication of performance and implementation of necessary improvements • Training and other communication requirements
Emergency Action Plan	<ul style="list-style-type: none"> • Fire and emergency reporting procedures • Response actions for accidents involving personnel and or property • Bomb threats • Site assembly and emergency evacuation route procedures • Natural disasters response • Reporting and notification procedures for emergencies; contacts, including offsite and local authorities • Alarm and communication systems • Spill response, prevention, and control action plan • Emergency response equipment • Emergency personnel (response team) responsibilities and notification roster • Training requirements
Personal Protective Equipment	<ul style="list-style-type: none"> • Personal protective devices • Head protection • Eye/face protection • Body protection • Hand protection • Foot protection • Skin protection • Fall protection • High-voltage protection • Respiratory protection • Hearing protection • Hazard analysis • Training

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Health and Safety Program	Program Elements Outline
Fire Protection and Prevention	<ul style="list-style-type: none"> • General requirements • Housekeeping and proper material storage • Employee alarm/communication system • Portable fire extinguishers • Fixed firefighting equipment • Fire control and containment • Flammable and combustible liquid storage • Use of flammable and combustible liquids • Dispensing and disposal of flammable liquids • Service and refueling areas • Training
Construction Safety Programs	
<i>Motor Vehicle and Heavy Equipment Safety</i>	<ul style="list-style-type: none"> • Operation and maintenance of vehicles • Inspection • Personal protective equipment (PPE) • Training
<i>Forklift Operation</i>	<ul style="list-style-type: none"> • Trained and certified operators • Fueling operations • Safe operating parameters • Training
<i>Excavation/Trenching Safety</i>	<ul style="list-style-type: none"> • Shoring, sloping, and benching requirements • Cal-OSHA permit requirements • Inspection • Air monitoring • Access and egress
<i>Fall Protection</i>	<ul style="list-style-type: none"> • Evaluation of fall hazards • Protection devices • Training
<i>Scaffolding/Ladder Safety</i>	<ul style="list-style-type: none"> • Construction and inspection of equipment • Proper use • Training
<i>Articulating Boom Platforms</i>	<ul style="list-style-type: none"> • Inspection of equipment • Load ratings • Safe operating parameters • Operator training
<i>Crane Safety</i>	<ul style="list-style-type: none"> • Certified and licensed operators • Inspection of equipment • Load ratings • Safe operating parameters • Training
<i>Hazard Communication</i>	<ul style="list-style-type: none"> • Labeling requirements • Storage and handling • Material Safety Data Sheets (MSDS) • Chemical inventory • Training

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Health and Safety Program	Program Elements Outline
<i>Hazardous Waste</i>	<ul style="list-style-type: none"> • Evaluation of hazard • Training • Air monitoring • Medical surveillance • Health and Safety Plan (HSP) preparation
<i>Hot Work Safety</i>	<ul style="list-style-type: none"> • Welding and cutting procedures • Fire watch • Hot work permit • PPE • Training
<i>Employee Exposure Monitoring</i>	<ul style="list-style-type: none"> • Exposure evaluation • Monitoring requirements • Reporting of results • Medical surveillance • Training
<i>Electrical Safety</i>	<ul style="list-style-type: none"> • Grounding procedure • Lock-out/tag-out (LO/TO) procedures • Overhead and underground utilities • Utility clearance • Training
<i>Permit-Required Confined-Space Entry</i>	<ul style="list-style-type: none"> • Air monitoring and ventilation requirements • Rescue procedures • LO/TO and blocking, blinding, and blanking requirements • Permit completion • Training
<i>Hand and Portable Power Tool Safety</i>	<ul style="list-style-type: none"> • Guarding and proper operation • Training
<i>Housekeeping and Material Handling and Storage</i>	<ul style="list-style-type: none"> • Storage requirements • Walkways and work surfaces • Equipment handling requirements • Training
<i>Heat Stress and Cold Stress Safety</i>	<ul style="list-style-type: none"> • Monitoring requirements • Prevention and control • Training
<i>Hearing Conservation</i>	<ul style="list-style-type: none"> • Identifying high-noise environments • Exposure monitoring • Medical surveillance requirements • Hearing-protective devices • Training
<i>Back Injury Prevention</i>	<ul style="list-style-type: none"> • Proper lifting and material handling procedures • Training
<i>Safe Driving</i>	<ul style="list-style-type: none"> • Inspection and maintenance • Training
<i>Pressure Vessel and Pipeline Safety</i>	<ul style="list-style-type: none"> • Line-breaking program • Equipment inspection and maintenance • Blocking, bleeding, and blanking • Training

Health and Safety Program	Program Elements Outline
<i>Respiratory Protection</i>	<ul style="list-style-type: none"> • Selection and use • Storage • Fit testing • Medical requirements • Inspection and repair • Training
<i>Digital Geophysical Mapping Plan</i>	<ul style="list-style-type: none"> • Digital Geophysical Mapping survey of the construction footprint • Work plan • Health and safety plan

Injury and Illness Prevention Program

This program will meet the California Division of Occupational Safety and Health Administration (Cal-OSHA) Injury and Illness Prevention (IIPP) requirements, which include:

- A written Code of Safety Practices that relates to construction activities;
- Identification of the person or persons responsible for implementing the program;
- Posting of the Code of Safe Practices at a conspicuous location at each job site office or providing it to each supervisor, who shall have it readily available;
- A system for identifying workplace hazards that includes inspections;
- A system of verifying employee and contractor compliance;
- “Toolbox” or “tailgate” meetings that supervisors conduct with employees to discuss job hazards and mitigation measures;
- Methods of communicating with employees that encourage employees to expose unsafe activities; and
- Procedures for correcting unsafe conditions.

Pressure Vessel and Pipeline Safety Program

- Line-breaking policy
- Equipment inspection and maintenance
- Blocking, bleeding, and blanking
- Communication
- Training

Safe Driving Program

- Inspection and maintenance
- Training

4.10.4 Safety Training Programs

To ensure that employees recognize and understand how to protect themselves from potential hazards during this Project, comprehensive training programs for construction and operation will be implemented. Each of the safety procedures developed to control and mitigate potential site hazards will require some form of training. Training will be delivered in various ways, depending on the requirements of Cal-OSHA standards, the complexity of the task, the characteristics of the workforce, and the degree of risk associated with each of the identified hazards. Tables 4.10-3 and 4.10-4 summarize the safety training programs that will be provided to construction and operations personnel, respectively.

Table 4.10-4 Construction Training Courses

Training Course	Target Employees
Injury and Illness Prevention	All
Emergency Action Plan	All
Personal Protective Equipment	All
Motor Vehicle and Heavy Equipment Safety	Employees working on, near, or with heavy equipment or vehicles
Forklift Operation	Employees operating forklifts
Excavation/Trenching Safety	Employees involved with trenching or excavation
Fall Protection	Employees working at heights greater than 6 feet or required to use fall protection
Scaffolding/Ladder Safety	Employees required to erect or use scaffolding
Articulating Boom Platforms	Employees required to use articulating boom platforms
Crane Safety	Employees supervising or performing crane operations
Hazard Communication	Employees handling or working with hazardous materials
Hazardous Waste	Employees handling or excavating hazardous waste
Hot Work Safety	Employees performing hot work
Employee Exposure Monitoring	All
Electrical Safety	Employees performing LO/TO or working on systems that require LO/TO activities; employees required to work on electrical systems and equipment, or use electrical equipment and cords
Permit-Required Confined-Space Entry	Employees required to supervise or perform confined-space entry activities
Hand and Portable Power Tool Safety	Employees that will be operating hand and portable power tools
Housekeeping and Material Handling and Storage	All
Heat Stress and Cold Stress Safety	Employees that are exposed to temperature extremes
Hearing Conservation	All
Back Injury Prevention	All
Safe Driving	Employees supervising or driving motor vehicles
Pressure Vessel and Pipeline Safety	Employees supervising or working on pressurized systems or equipment
Respiratory Protection	All employees required to wear respiratory protection

4.10.4.1 Operations Health and Safety Programs

Upon completion of construction and commencement of operations at the Project facility, the construction safety and health program will transition into an operations-oriented program reflecting the hazards and controls required during facility operation.

Overview of Operations Health and Safety Programs

The topics that will be included in the Operations Health and Safety Program are outlined in Table 4.10-5.

Table 4.10-5 Operations Health and Safety Programs

Health and Safety Program	Program Elements Outline
Injury and Illness Prevention	<ul style="list-style-type: none"> • Personnel with the responsibility and authority for implementing the plan • Safety and health policy • Work rules and safe work practices • System for ensuring that employees comply with safe work practices • Employee communications • Identification and evaluation of workplace hazards • Methods and/or procedures for correcting unsafe or unhealthy conditions, work practices, and work procedures in a timely manner based on the severity of the hazards • Specific safety procedures (see Plant Operation Safety Program) • Training and instruction
Emergency Action Plan	<ul style="list-style-type: none"> • Emergency escape procedures and emergency escape route assignments • Procedures to be followed by employees who remain to operate critical plant operations before they evacuate • Procedures to account for all employees after emergency evacuation has been completed • Rescue and medical duties for those employees performing rescue and medical duties • Fire and emergency reporting procedures • Alarm and communication system • Personnel to contact for information on plan contents • Response procedure for ammonia release • Training requirements
Personal Protective Equipment	<ul style="list-style-type: none"> • Hazard analysis and prescription of PPE • Personal protective devices • Head protection • Eye and face protection • Body protection • Hand protection • Foot protection • Skin protection • Sanitation • Safety belts and life lines for fall protection • Protection for electric shock

4.10 Worker Health and Safety

Health and Safety Program	Program Elements Outline
	<ul style="list-style-type: none"> • Medical services and first aid/bloodborne pathogens • Respiratory protective equipment • Hearing protection • Training
Fire Protection and Prevention	<ul style="list-style-type: none"> • General requirements • Fire hazard inventory, including ignition sources and mitigation • Housekeeping and proper materials storage • Employee alarm/communication system • Portable fire extinguishers • Fixed firefighting equipment • Fire control • Flammable and combustible liquid storage • Use of flammable and combustible liquids • Dispensing and disposal of liquids • Training • Personnel to contact for information on plan contents
Plant Operation Safety Programs	
<i>Motor Vehicle and Heavy Equipment Safety</i>	<ul style="list-style-type: none"> • Operation and maintenance of vehicles • Inspection • Personal Protective Equipment • Training
<i>Forklift Operation</i>	<ul style="list-style-type: none"> • Trained and certified operators • Fueling operations • Safe operating parameters • Training
<i>Excavation/Trenching Safety</i>	<ul style="list-style-type: none"> • Shoring, sloping, and benching requirements • Cal-OSHA permit requirements • Inspection • Air monitoring • Access and egress
<i>Fall Protection</i>	<ul style="list-style-type: none"> • Evaluation of fall hazards • Protection devices • Training
<i>Scaffolding/Ladder Safety</i>	<ul style="list-style-type: none"> • Construction and inspection of equipment • Proper use • Training
<i>Articulating Boom Platforms Program</i>	<ul style="list-style-type: none"> • Inspection of equipment • Load ratings • Safe operating parameters • Operator training
<i>Crane and Material Handling Safety</i>	<ul style="list-style-type: none"> • Certified and licensed operators • Inspection of equipment • Load ratings • Safe operating parameters • Training
<i>Hazard Communication</i>	<ul style="list-style-type: none"> • Labeling requirements • Storage and handling • MSDS • Chemical inventory • Training

4.10 Worker Health and Safety

Health and Safety Program	Program Elements Outline
<i>Hot Work Safety</i>	<ul style="list-style-type: none"> • Welding and cutting procedures • Fire watch • Hot work permit • Personal Protective Equipment • Training
<i>Employee Exposure Monitoring</i>	<ul style="list-style-type: none"> • Exposure evaluation • Monitoring requirements • Reporting of results • Medical surveillance • Training
<i>Electrical Safety</i>	<ul style="list-style-type: none"> • Grounding procedure • LO/TO procedures • Overhead and underground utilities • Utility clearance • Training
<i>Permit-Required Confined-Space Entry</i>	<ul style="list-style-type: none"> • Air monitoring and ventilation requirements • Rescue procedures • LO/TO and blocking, blinding, and blanking requirements • Permit completion • Training
<i>Hand and Portable Power Tool Safety</i>	<ul style="list-style-type: none"> • Guarding and proper operation • Training
<i>Housekeeping and Material Handling and Storage</i>	<ul style="list-style-type: none"> • Storage requirements • Walkways and work surfaces • Equipment handling requirements • Training
<i>Heat Stress and Cold Stress Safety</i>	<ul style="list-style-type: none"> • Monitoring requirements • Prevention and control • Training
<i>Hearing Conservation</i>	<ul style="list-style-type: none"> • Identifying high-noise environments • Exposure monitoring • Medical surveillance requirements • Hearing protective devices • Training
<i>Back Injury Prevention</i>	<ul style="list-style-type: none"> • Proper lifting and material handling procedures • Training
<i>Safe Driving</i>	<ul style="list-style-type: none"> • Inspection and maintenance • Training
<i>Pressure Vessel and Pipeline Safety</i>	<ul style="list-style-type: none"> • Line-breaking policy • Equipment inspection and maintenance • Blocking, bleeding, and blanking • Communication • Training
<i>Respiratory Protection Program</i>	<ul style="list-style-type: none"> • Selection and use • Storage • Fit testing • Medical requirements • Inspection and repair • Training

Health and Safety Program	Program Elements Outline
<i>Workplace Ergonomics</i>	<ul style="list-style-type: none"> • Identification of personnel at risk • Evaluation of personnel • Workplace and job activity modifications • Training

Injury and Illness Prevention Program

As required by 8 CCR Section 3203, the operations injury and illness prevention plan will contain the Cal-OSHA IIPP requirements, including:

- Identity of the person(s) with authority and responsibility for implementing the program;
- A system for verifying that employees comply with safe and healthful work practice;
- A system for communicating with employees in a readily understandable form;
- Procedures for identifying and evaluating workplace hazards including inspections to identify hazards and unsafe conditions;
- Methods for correcting unhealthy/unsafe conditions in a timely manner - when the hazard is discovered and/or when there is an imminent danger;
- A training program for:
 - Establishing the program initially;
 - New, transferred, or promoted employees;
 - New processes and equipment; and
 - Supervisors
- Methods of documenting inspections and training and maintaining records for three years.

4.10.5 Fuel Handling and Fire Suppression

Fuel handling systems are described in Chapter 2.0, Project Description. Fuel utilized onsite will be natural gas, which will power the gas turbines and the black-start generator. Natural gas will be delivered to the plant site as described in Section 2.3.5, Fuel System. Diesel fuel will be stored onsite for the emergency firewater pump in a 250-gallon aboveground tank located within secondary containment. The reciprocating engine lube oil reservoirs and turbine generating equipment oil systems will be monitored in the power plant control room, which will contain both visual and auditory alarms in the event of a breach or system failure.

Power plant operators will perform and document routine SPCC inspections. Appropriate personnel will be trained for SPCC annually. Training will include, but not be limited to, applicable oil pollution control regulations, rules and regulations regarding operation and maintenance of equipment to prevent discharges of oil and spill response procedures. Infrequently, tank trucks will deliver diesel fuel and lubricating oil. Spills during the filling process will be avoided by the following design features and precautions:

- Fuel delivery vendors are required to use licensed vehicles designed for the purpose.
- Fuel delivery vendors will utilize couplings designed to fully contain products during transfer.
- Drivers will be required to be present and provide constant attention during the fuel transfer process.
- All flanges and connections are to be checked for leakage prior to the truck's departure.
- All transfer piping from the diesel fuel storage tank will be aboveground.
- Operating personnel will regularly observe aboveground valves and piping, tile conditions of flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, and locking or securing of valves and metal surfaces.
- Problem areas will be noted for investigation/repair, as appropriate.

Project fire protection systems include a water system, CO₂ fire suppression systems for the natural gas-fired reciprocating engines, and portable fire extinguishers. The plant's fire protection water system will be supplied from a 600,000 gallon dedicated fire water tank located on the plant site. One diesel-driven fire pump, with a capacity of 500 gallons per minute will deliver water to the fire protection water-piping network. A second, electric motor-driven pump and a small capacity jockey pump, will maintain pressure in the piping network.

The piping network will be configured in a loop so that a piping failure can be isolated with shutoff valves without interrupting the supply of water to a majority of the loop. The piping network will supply fire hydrants located at various locations around the plant site and also will supply a sprinkler system in the operations building and at each of the generating unit transformers. The CO₂ fire suppression system provided for each natural gas-fired reciprocating engines will include a CO₂ storage tank, CO₂ piping and nozzles, fire detection sensors, and a control system. Upon detection and automated confirmation of the existence of a fire, the control system will automatically shut down the combustion turbine, turn off ventilation fans, close ventilation openings, and release CO₂. Portable fire extinguishers of appropriate sizes and types will be located throughout the plant site.

The proposed plant site falls within Engine District 34, City of San Diego Fire-Rescue Department. The city of San Diego Fire Department fire station #39 serves the proposed Project (San Diego Fire-Rescue Department website 2011). Fire Station #39 was placed in service in June 1976 and serves the Tierrasanta neighborhood and surrounding area. The station is located at 4949 La Cuenta Drive and has a fire fighter/medic staff of 39.

The proposed plant site is located in a Very High Fire Hazard Severity Zone by the City of San Diego Fire-Rescue Department (Official Very High Fire Hazard Severity Zone Map, Grid Tile 30, 2009), which is based on the physical conditions that create a likelihood that an area will burn over a 30 to 50-year period without considering modifications such as fuel reduction efforts. The Project will adhere to structural requirements for new buildings located in the Very High Fire Hazard Severity Zone specified under Chapter 7A of the 2007 California Building Code for structures. Measures will also be implemented to ensure compliance with the City of San Diego Municipal Code that regulates brush management and requires creation of two Brush Management Zones with specific requirements. The Code was amended in October 2005 to make these Zones total 100 feet of defensible space from structures within the zone. These

include areas either natural or man-made, where material capable of allowing a fire to spread unchecked has been thinned, removed, and/or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur. When the full brush management zone(s) cannot be provided, the Project will obtain alternative means of equivalent fire protection as required by the Fire-Rescue Department. Criteria for brush management purposes are determined by the Fire-Rescue Department based upon the structure's proximity to native or naturalized vegetation and extent of the fuel load.

4.10.6 Cumulative Impacts

The list of cumulative projects is presented in Section 4.17. The purpose of this section is to identify past, present, and reasonably foreseeable actions in the Project area that could affect the same resources as those of the Project and provide the following analysis:

- Determine if the impacts of the Project and the other actions would overlap in time or geographic extent.
- Determine if the impacts of the Project would interact with, or intensify, the impacts of the other actions.
- Identify any potentially significant cumulative impacts.

Each project near the proposed Project will be responsible for complying individually with applicable worker health and safety requirements. Moreover, the potential worker health and safety hazards during construction or operation of the Project will not affect potential worker health and safety hazards at the other projects. Therefore, no cumulative impacts on worker health or safety are expected as a result of the Project.

4.10.7 Mitigation Measures

The CEC standard conditions and the Health and Safety Programs described in Section 4.10.3 provide appropriate mitigation and compliance conditions that enable worker safety compliance with all applicable LORS in a manner that results in no significant environmental impacts.

WORKER SAFETY-1: The Project owner will prepare a Project Construction Health and Safety Program with the following elements:

- Illness and Injury Prevention Program
- Emergency Action Plan / Program
- Personal Protective Equipment Program
- Fire Protection and Prevention Program
- Construction Safety Programs

WORKER SAFETY-2: The Project owner will prepare a Project Operations Health and Safety Program with the following elements:

- Illness and Injury Prevention Program
- Emergency Action Plan / Program
- Personal Protective Equipment Program
- Fire Protection and Prevention Program
- Operations Safety Programs

4.10.8 Laws, Ordinances, Regulations, and Standards

A summary of LORS pertaining to worker safety is provided in Table 4.10-6. The Project will be in compliance with applicable LORS during Project construction and operation. Through training and safety programs described herein, the Project will maintain compliance with all applicable LORS for worker safety. Self-auditing will be conducted periodically, as required.

4.10.9 Agencies and Agency Contacts

Several agencies are involved to ensure protection of worker health and safety. Agency contacts relative to worker health and safety and fire are shown in Table 4.10-7.

Table 4.10-7 Agencies and Agency Contacts for Worker Health and Safety

Agency	Name	Title	Phone	Email	Mailing Address
Cal/OSHA Consultation Services, San Diego Region, Hazard Identification and Regulatory Enforcement	William Obert	Area Manager	(619) 767-2060	n/a	7575 Metropolitan Drive, Suite 204 San Diego, CA 92108
Cal/OSHA Enforcement, San Diego Region, Complaint Investigation	Luis Mireles	District Manager	(619) 767-2280	n/a	7575 Metropolitan Drive, Suite 207 San Diego, CA 92108
City of San Diego, Fire-Rescue Department, Fire Prevention Bureau	n/a	New Construction - Inspection Scheduling	(619) 446-5440	Sdfd @sandiego.gov	1010 2nd Avenue, # 300 San Diego, CA 92101-4903

Table 4.10-6 Applicable LORS and Compliance for Worker Health and Safety

Jurisdiction	Authority	Agency	Requirements	Compliance	AFC Section
Federal	Occupational Health and Safety Act of 1970, 29 U.S. Code (USC), sections 651 et seq.; 29 CFR 1910 et seq.	Fed-OSHA & Cal-OSHA	Meet the minimum occupational safety and health standards for general industry in the United States.	Implement safety/training programs	4.10.4.1, 4.10.5
	Occupational Health and Safety Act of 1970, 29 USC, sections 651 et seq.; 29 CFR 1926 et seq.	Fed-OSHA & Cal-OSHA	Meet the minimum occupational safety and health standards for general construction in the United States,	Implement safety/training programs	4.10.3.2, 4.10.5
	Department of Labor, Safety and Health Regulations for Construction, Contract Work Hours and Safety Standards Act, §333; 40 USC §327 et seq.	Fed-OSHA & Cal-OSHA	Meet employee health and safety standards for construction activities. Requirements addressed in CCR, Title 8, General Construction Safety Orders, Chapter 4, Subchapter 4.	Implement construction health and safety programs	4.10.5, 4.10.3.1 4.10.3.2
	Uniform Fire Code, Articles 4, 79, 80	San Diego Fire-Rescue Department Fire Prevention Bureau	Meet requirements for use of flammable and combustible liquids (Article 79) and for the storage and handling of hazardous materials (Article 80).	Follow Uniform Fire Code guidance	4.10.6
	National Fire Protection Association	City of San Diego Fire-Rescue Department Fire Prevention Bureau	Meet standards necessary to establish a reasonable level of safety and property protection from hazards created by fire and explosion.	Install fire prevention and suppression design and equipment	4.10.3.1, 4.10.3.2 ,4.10.4

4.10 Worker Health and Safety

Jurisdiction	Authority	Agency	Requirements	Compliance	AFC Section
State	CCR, Title 8, Title 24	Cal-OSHA	Meet requirements for a safe and hazard-free working environment. Requirements include General Industry Safety Orders, General Construction Safety Orders, Electrical Safety Orders	Implement of construction and operations health and safety programs	4.10.3.1, 4.10.3.2, 4.10.4
	CCR, Title 22, Sections 66264.16 and 66270.14	California Department of Health Services	Meet requirements for personnel training and recordkeeping	Implement of health and safety training programs	4.10.3.1, 4.10.3.2, 4.10.4
Local	County Fire Code –San Diego County Code of Regulatory Ordinances, Title 3, Division 5, Chapter 3	City of San Diego Fire-Rescue Department Fire Prevention Bureau	Comply with rules and regulations regarding flammable materials and other fire hazards	Implement Fire Protection Plan	4.10.3.1, 4.10.3.2 ,4.10.4
Industry	Uniform Fire Code, Article 80	City of San Diego Fire-Rescue Department Fire Prevention Bureau	Addresses prevention, control and mitigation of dangerous conditions related to storage dispensing uses, and handling of various hazardous materials		

4.10.10 Required Permits and Permitting Schedule

Table 4.10-8 lists applicable permits related to the protection of worker health and safety for the Project certification. The activities covered and application requirements to obtain each permit are provided. All permits noted in Table 4.10-8 may be obtained from any Cal-OSHA district or field office as needed. Notification requirements are listed as 24 hours because the permits may be required at several points in the construction of the plant or during operations; no specific permitting schedule is provided.

Table 4.10-8 Permits for Worker Health and Safety

Permit or Approval	Schedule	Applicability	Contact
Trenching and excavation permit	Submit completed permit application to any Cal-OSHA district or field office prior to commencing construction	Trenches and excavations of more than 5 feet that personnel are required to enter, or Construction of buildings, structures, scaffolding, or falsework more than 3 stories high, or Demolition of any building or structure or dismantling of scaffolding or falsework more than 3 stories high	Cal/OSHA, San Diego Region
Construction Demolition	Submit completed permit application to any Cal-OSHA district or field office prior to commencing construction	Construction of demolition of buildings, structures 3 feet or higher	Cal/OSHA, San Diego Region
Scaffolding	Submit completed permit application to any Cal-OSHA district or field office prior to commencing construction	Scaffolding 36 feet or higher, erection or dismantling	Cal/OSHA, San Diego Region
Permit to erect a fixed tower crane	Submit completed permit application to any Cal-OSHA district or field office at least 24 hours prior to initiation of activity	Required to erect, climb, or dismantle fixed tower cranes, Completion of erection of tower crane and commencement of operation, climbing of the tower crane, or dismantling of the tower crane	Cal/OSHA, San Diego Region
Pressure vessel, unfired or fired	Submit completed permit application to Cal-OSHA Pressure Vessel Unit	Pressure vessels covered by the Unfired and Fired Pressure Vessel Safety Orders require a permit to operate	Cal-OSHA pressure vessel unit

DATA ADEQUACY WORKSHEETS

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	4.10.1, 4.10.2, 4.10.3, 4.10.4, 4.10.5		
Appendix B (g) (11) (A)	A description of the safety training programs which will be required for construction and operation personnel.	4.10.4		
Appendix B (g) (11) (B)	A complete description of the fuel handling system and the fire suppression system.	4.10.5		
Appendix B (g) (11) (C)	Provide draft outlines of the Construction Health and Safety Program and the Operation Health and Safety Program, as follows: Construction Health and Safety Program: * Injury and Illness Prevention Plan (8 Cal. Code Regs., § 1509); * Fire Protection and Prevention Plan (8 Cal. Code Regs., § 1920); * Personal Protective Equipment Program (8 Cal. Code Regs., §§ 1514-1522) Operation Health and Safety Program: * Injury and Illness Prevention Program (8 Cal. Code Regs., § 3203); * Fire Prevention Plan (8 Cal. Code Regs., § 3221); * Emergency Action Plan (8 Cal. Code Regs., § 3220); Personal Protective Equipment Program (8 Cal. Code Regs., §§ 3401-3411).	4.10.3		

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	4.10.6		
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	4.10.7		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	4.10.7		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	4.10.8		