

7.7 WORKER SAFETY AND HEALTH

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This section describes the injury and illness prevention programs that will be established and implemented during construction and operation of the proposed San Gabriel Generating Station (SGGS). The purpose of these programs is to protect human health and capital resources, and minimize the potential for workplace injuries and illnesses at the facility. The development and implementation of these programs will also ensure compliance with applicable laws, ordinances, regulations, and standards (LORS), as established by the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA), California Health and Safety Code, and the Uniform Fire Code (UFC).

The following sections provide a description of the workplace and the anticipated workplace hazards, define the crucial safety programs and related safety training programs, present the applicable LORS, and identify local safety agency contacts and permit requirements.

7.7.1 Workplace Description

The SGGS includes the construction and operation of a combined cycle, natural gas-fired power generation facility and ancillary support structures to be constructed primarily within the existing Reliant Energy Etiwanda Generating Station (EGS) property in Rancho Cucamonga, San Bernardino County, California. The EGS site is approximately 60 fenced acres located approximately 1 mile east of Interstate 15 (I-15) and approximately 1.5 miles north of Interstate 10 (I-10) (see Figure 2.2-1 in Chapter 2, Facility Description and Location). The SGGS will consist of the following primary components:

- Two natural gas-fired combustion turbine generators (CTGs);
- One steam turbine generator;
- Two supplemental fired heat recovery steam generators (HRSGs);
- One air cooled condenser unit;
- Interconnection to the future SCE 525-kV Rancho Vista substation/switchyard south of the SGGS, and
- Ancillary support facilities.

Figure 2.3-1 depicts the overall site arrangement. Figures 7.7-1 and 7.7-2 show the locations of fire protection systems and emergency equipment, and the locations and quantities of hazardous and toxic materials used at the plant, respectively.

7.7.2 Occupational Safety and Health

Construction, operation, and maintenance activities associated with the SGGS may expose workers to physical and chemical hazards. Potential worker exposure to these hazards will be minimized through adherence to appropriate engineering design criteria, implementation of appropriate administrative procedures, use of personal protective equipment, and compliance with applicable health and safety LORS.

Potential hazards that workers may be exposed to while working on SGGS are presented in Table 7.7-1. Formal health and safety procedures and programs will be established and implemented for construction and operations to control the various hazards and provide for a safe workplace.

The site-specific injury and illness prevention programs and safety training programs, which are intended to protect worker health and safety during construction and operation of the proposed project, are described in the following sections.

**Table 7.7-1
Construction, Operation, and Maintenance Hazard Analysis
(Page 1 of 2)**

| Activity | Exposure Potential | Potential Hazard | Control Strategies |
|----------------------------------|---------------------------|--|---|
| Heavy Equipment Operation | C, O, M | Employee injury and property damage from collisions with workers and/or facility equipment. | Implement heavy equipment safety program, ensure that equipment is routinely inspected and operators are properly trained. |
| Trenching and Excavation | C, M | Employee injury and property damage from collapse of trenches and excavations or contact with underground utilities. | Implement an excavation and trenching safety program, ensure operators are properly trained. Require digging permits prior to initiating excavation or trenching. |
| Work at Elevation | C, O, M | Employee injury due to falls from the same level and elevated work areas. | Implement a fall protection program that requires fall protection systems whenever unprotected work is performed at heights greater than 6 feet. |
| General Project Work | C, O, M | Employee injury resulting from a slip, trip, or fall. | Maintain good housekeeping, adequate lighting, compliant stairways, and railings. |
| Crane and Derrick Operation | C, M | Employee injuries and property damage due to falling loads. | Implement hoisting and rigging safety program, inspect equipment routinely and ensure that operators are properly trained. |
| Hot Work | C, O, M | Employee injuries and property damage due to fire or explosion. | Implement fire protection and prevention program, require Hot Work permits, ensure that welders, pipe fitters, etc., are properly trained. |
| Working with Combustible Liquids | C, O, M | Employee injuries and property damage due to fire or explosion. | Implement fire protection and prevention program that includes proper procedures for the proper storage and use of flammable or combustible liquids. |
| Concrete/Forms Work | C | Employee injuries due to work at height, slips, trips, and falls. | Wear fall protection when working at height, protect exposed rebar, and maintain good housekeeping. |

**Table 7.7-1
Construction, Operation, and Maintenance Hazard Analysis
(Page 2 of 2)**

| Activity | Exposure Potential | Potential Hazard | Control Strategies |
|--|---------------------------|---|---|
| Electrical Work | C, O, M | Employee injuries due to contact with energized parts. | Implement energy control program, including LO/TO of energized sources. |
| Materials Handling | C, O, M | Employee injuries due to improper lifting. | Train employees in proper lifting techniques. |
| Confined Space Entries | C, M | Employee injuries due to suffocation, exposure to toxic materials, engulfment, etc. | Implement a confined space program, including permit procedures and air monitoring requirements. |
| Compressed Gas Storage | C, O, M | Employee injuries and equipment damage due to explosive release of pressure. | Implement a compressed gas safety program, including procedures for proper use and storage. |
| Power Tool Use | C, O, M | Employee injuries due to improper use, or use of damaged power tools. | Implement procedures for inspecting power tools before operation and train employees on the proper use and care of power tools. |
| Working with or near hazardous or toxic materials | C, O, M | Employee injuries due to exposure to hazardous and/or toxic materials. | Implement hazard communication program and exposure control procedures, including engineering controls, administrative controls, and PPE for activities that may expose employees to hazardous/toxic materials. |
| Working with or near noisy equipment | C, O, M | Employee overexposure to noise. | Implement a hearing conservation program to include identifying high noise activities and sources, sound level monitoring, and PPE. |
| Working with or near exposed machinery | C, O, M | Employee injuries from entanglement in rotating or moving equipment. | Develop and implement machine guarding equipment LO/TO procedures. |
| C = Construction Phase O = Facility Operations M = Facilities Maintenance LO/TO = Lockout/tagout PPE = personal protective equipment | | | |

7.7.3 Injury and Illness Prevention Programs

Prior to beginning construction activities, the architectural and engineering (A&E) firm and construction contractor, in conjunction with Reliant, will develop a site-specific construction injury and illness prevention program. At a minimum, this program will be consistent with the requirements established in Reliant Energy's Plant Operations Incident Prevention Manual (2006). When the construction of the proposed project is complete, Reliant will implement a site-specific injury and illness prevention program for operations and maintenance activities, consistent with their existing injury and illness prevention program currently in place at their EGS site and at their other power generation facilities.

7.7.3.1 Construction Injury and Illness Prevention Programs

Consistent with Cal/OSHA's policy on multi-employer work sites, each employer will be responsible for the health and safety of their own employees. Periodic health and safety audits will be conducted by SGGS to verify contractor and subcontractor compliance with contractual health and safety obligations.

Construction Safety Program. The overall written construction safety program will include provisions to ensure compliance with Cal/OSHA's Injury and Illness Prevention Program (IIPP) requirements (California Code of Regulations [CCR] Title 8, Section 1509) and will include:

- A written Code of Safe Practices that relates to construction operations;
- Identification of the person or persons responsible for implementing the construction safety program;
- Posting of the Code of Safe Practices at a conspicuous location at the job site office, and providing it to each supervisor, who shall have it readily available;
- A description of the system for identifying workplace hazards, including work place inspections, job hazard analysis, and written hazard assessments;
- Periodic meetings with employee representatives, supervisors, and management to discuss safety issues, including compliance assessments, accidents, injuries, and new or modified health and safety procedures;
- A system for ensuring employee and subcontractor compliance;
- Routine "tool box" or "tailgate" safety meetings conducted with employees and supervisors;
- A system for promoting employees' feedback and suggestions for improving workplace safety;
- Procedures for promptly correcting unsafe conditions;
- Identification of safety training and experience requirements for specific work activities; and
- Posting of requirements such as access to medical and exposure records, log and summary of occupational injuries and illnesses, and emergency phone numbers.

Construction Personal Protective Equipment Program. Contractor employees will use personal protective equipment (PPE) during construction as specified in the construction PPE program. Required PPE shall be identified through hazard assessment and general industry standards. The specific PPE ensemble required for each job task will be specified in the job hazard analysis (JHA) for that task. The use of PPE for site activities includes, but is not limited to, the items described in Table 7.7-2. All PPE worn on

site will comply with Cal/OSHA and/or American National Standards Institute (ANSI) requirements. Respiratory protection will be included in the PPE program. Employees will not be allowed to perform tasks that require the use of respiratory protection until they have properly completed a medical evaluation, respirator fit-testing, and training on the proper use, limitations, and care of respirators.

| Table 7.7-2 Protective Equipment Guide (Page 1 of 2) | | |
|---|---|--|
| Body Area | Hazards | Recommended Protection |
| Eyes/Face | Low-velocity flying particles | Safety glasses with side shields |
| | High-velocity chips and sparks | Impact goggles or safety glasses with full face shield |
| | Corrosive liquid splash during transfer | Splash proof goggles and face shield |
| | Welding – injurious light rays | Welding hood with appropriate eye filter lenses |
| Head/Ears | General overhead hazards, overhead rigging, material handling, maintenance, and general construction operations | Nonconductive hard hat |
| | Noise exposure | Ear plugs or muff |
| Respiratory System | Low-hazard inert dust | Nuisance dust mask |
| | Welding fumes | Respirator with HEPA cartridge |
| | Low concentration solvent vapors | Air-purifying respirator with organic vapor cartridges |
| | Acid or base mists | Air-purifying respirator with appropriate acid/base cartridges |
| | High-concentration dusts or toxic vapors, gases | Air line respirator or self-contained breathing apparatus |
| | Oxygen deficient atmospheres, immediately dangerous to life and health concentrations of vapors, gases | Self-contained breathing apparatus |
| Hands and Arms | Handling rough or sharp objects | Leather gloves |
| | Handling hot objects | Insulated gloves |
| | Using solvents | Appropriate chemical-resistant synthetic gloves |
| Feet and Legs | General wear for light handling | Safety shoes |
| | Handling heavy objects | Steel-toed safety shoes |
| | Using brush hooks or scythes | Shin guards |
| | Working with corrosive liquids | Chemical resistant safety boots |
| | Underground work | Synthetic safety toe boots |

| Table 7.7-2 Protective Equipment Guide (Page 2 of 2) | | |
|---|---|---|
| Body Area | Hazards | Recommended Protection |
| Trunk and Full Body | Normal work attire | Cotton pants and shirt |
| | Hot or corrosive liquids | Chemical-resistant apron or full body suit |
| | Punctures, impact, or cuts | Canvas or leather kickback apron or metal mesh apron |
| Fall Protection/Rescue | Working from elevated structure or platform without standard railings | Full body safety harness and lanyard |
| | Vessel (confined space) entry | Full body safety harness and lifeline or wristlets and lifeline |
| | Suspended scaffolds | Full body safety harness/lanyard |
| HEPA = high-efficiency particulate air filter | | |

Construction Exposure Monitoring Program. An exposure monitoring program will be developed to evaluate potential employee exposures to hazardous/toxic materials. Potential exposures will be identified during the task-specific JHAs. Air monitoring may be conducted if necessary to evaluate the potential for employee exposures to the contaminants of concern. Airborne exposures will be controlled through the implementation of engineering controls, administrative controls, or PPE. Air monitoring will also be required in support of other safety programs, including confined space entry, hot work permits, and emergency response. Noise monitoring will also be performed as necessary during the construction phase to evaluate potential employee noise exposures.

Construction Emergency Action Plan. An emergency action plan (EAP) will be developed specifically for the construction phase of the proposed project. The construction EAP will designate responsibilities and actions to be taken in the event of an emergency at the proposed project site. All employees working at the site will be trained on the contents of the program. The construction EAP will include:

- Emergency roles and responsibilities,
- Rescue and medical duties,
- Training,
- Emergency notification procedures, and
- Egress routes and assembly points.

Construction Written Safety Programs. Additional written safety programs that will be established for the construction phase include, but are not limited to:

- Hazard communication program;
- Confined space program;
- Control of hazardous energy program (Lock Out/Tag Out);
- Hearing conservation program;
- Respiratory protection program;
- Blood-borne pathogens control program;
- Injury and accident reporting and investigation program;
- Ergonomics program;
- Emergency response program, including first aid and medical services;
- Smoking policy;

- General housekeeping, material handling, and storage procedures;
- Vehicle and traffic procedures;
- Elevated work procedures;
- Heavy equipment procedures;
- Hot work procedures;
- Heat stress procedures;
- Fall protection program;
- Electrical safety program;
- Crane and hoist procedures;
- Compressed gas and air handling procedures;
- Subcontractor safety programs;
- Equipment inspection programs;
- Supervisor safety and health orientations;
- Excavation and trenching program; and
- Hazard Identification Team and Safety Marshal program.

7.7.3.2 Operations and Maintenance Injury and Illness Prevention Programs

Upon completion of construction and startup of proposed project and implementation of routine operations, the construction injury and illness prevention programs will transition into an operations-oriented program that reflects the hazards and controls necessary during routine operations and maintenance of SGGS. The Applicant will use existing injury and illness prevention programs that are established at similar power generation facilities they operate throughout the United States as templates for the SGGS site-specific program. The SGGS program will reflect any unique hazards specifically associated with maintenance and operation of this facility.

Program outlines for the operations safety programs that will be implemented are provided below, including Injury and Illness Prevention Plan, Fire Protection and Prevention Plan, Emergency Action Plan, Hazardous Material Management Program, and PPE Program.

Injury and Illness Prevention Plan. The primary mitigation measures for worker hazards during normal plant operation and maintenance are contained in the IIPP, as required by 8 CCR, Section 3203. The written IIPP designates an individual who is responsible for implementing the program. It also describes safety training and procedures for tracking safety training. JHAs identify safety hazards related to work tasks and establish procedures for avoiding, correcting, reporting, and notifying employees of these hazards.

The IIPP contains the following information and procedures:

- Identity of the person(s) with authority and responsibility for implementing the program;
- A system for ensuring that employees comply with safe and healthy work practices;
- A system for facilitating employer-employee communications regarding safety;
- 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;
- An employee training program that includes:
 - introducing the program;
 - training of new, transferred, or promoted employees;
 - training on new processes and equipment;
 - supervisors training; and
 - evaluation of contractor training.
- Methods of documenting inspections and training, and for maintaining appropriate records.

Emergency Action Plan. In addition to the incorporation of various safety and environmental features and design measures to minimize emergencies and their effects on public and worker safety, the SGGGS will have a site-specific EAP. The outline for the operations EAP is provided in Table 7.7-3; this EAP will address potential emergencies, including chemical releases, fires, bomb threats, pressure vessel ruptures, aqueous ammonia releases, and other catastrophic events. It will describe evacuation routes, alarm systems, points of contact, assembly areas, responsibilities, and other actions to be taken in the event of an emergency. The plan will include a layout map, a fire extinguisher list, and a description of arrangements with local emergency response agencies for responding to emergencies.

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|-----|---|------|--------------------------------------|
| 1.0 | Introduction | 4.7 | Emergency Plant Shutdown |
| | 1.1 Purpose | 4.8 | Site Security |
| | 1.2 Scope | 4.9 | Emergency Medical Treatment and |
| 2.0 | Responsibilities | | First Aid |
| | Emergency Response Coordinator | 4.10 | Decontamination |
| | Alternate Emergency Evacuation Coordinator | 4.11 | Documentation and Recordkeeping |
| | Safety Coordinator | 4.12 | News Media |
| | Position Description Assignments | 4.13 | Emergency Notification List |
| | Construction/Facility Manager | 4.14 | Emergency Telephone Numbers List |
| | Construction/Facility Supervisor | 5.0 | Reference Procedures |
| | Operators | 5.1 | Evacuation Plan |
| | Health and Safety Manager | 5.2 | Emergency Equipment Locations |
| | Security | 5.3 | Fire Extinguisher Locations |
| 3.0 | Response and Notification Plan (Points of Contact) | 5.4 | Security |
| | 3.1 Supervisor/Emergency Coordinator | 5.5 | Accident Reporting and Investigation |
| | 3.2 Health and Safety Manager | 5.6 | Lockout/Tagout |
| 4.0 | Response Procedures | 5.7 | Hazard Communication |
| | 4.1 Evacuation Routes and Procedures | 5.8 | Spill Containment and Reporting |
| | 4.2 Accidents Involving Serious Injury and/or Death | 5.9 | First Aid and Medical Response |
| | 4.3 Fire | 5.10 | Respiratory Protection |
| | 4.4 Hazardous Waste or Chemical Spills | 5.11 | Personal Protective Equipment |
| | 4.5 Earthquake | 5.12 | Sanitation |
| | 4.6 Bomb Threat | 5.13 | Work Site Inspection |

Hazardous Materials Management Program. As described in Section 7.12, Hazardous Materials Handling, several chemicals will be stored and used during operation of the proposed project. The storage and handling of chemicals will follow applicable LORS to minimize risk to workers and the surrounding community. Chemicals will be identified and stored in appropriate chemical storage facilities. Bulk chemicals will be stored in aboveground storage tanks; other chemicals will be stored in their delivery containers. Chemical storage and chemical feed areas will be surrounded by temporary or permanent containment or curbing to contain leaks and spills. The containment areas will be sized to hold an appropriate volume (considering the potential for the local hazard contingencies) as designated by a California-registered Professional Engineer.

Safety showers and eyewash stations will be provided in or adjacent to chemical storage and use areas in accordance with 8 CCR, Section 5162 requirements (within 50 feet, or 10 seconds of travel time). Standard

PPE for use during chemical handling activities will be provided. Standard PPE will be readily available for use during minor chemical spill containment and cleanup activities by plant personnel. Adequate supplies of absorbent material will also be available onsite for minor spill cleanup. A hazardous material emergency response team, trained in managing the accidental release of the chemicals used and stored at the plant, will be available through contract. Emergency contact numbers will be available to summon assistance from these contractors and notify local agencies. These procedures will be detailed in the EAP.

Personal Protective Equipment Program. PPE requirements for work at SGGs will be identified during the job hazard analyses process. The PPE requirements will be developed and incorporated into the site-specific injury and illness prevention program. The PPE program will include the following:

- Hazard analysis and prescription of PPE,
- Personal protective devices,
- Head protection,
- Eye and face protection,
- Body protection,
- Hand protection,
- Foot protection,
- Sanitation,
- Safety belts and life lines,
- Protection for electric shock, and
- Respiratory protective equipment.

Operations and Maintenance Written Safety Program. The SGGs will use the written safety programs that have been developed and implemented to address hazards that are identified with operation and maintenance of electric generating stations. These programs will be made components of the overall operations and maintenance injury and illness prevention program for the proposed plant. These programs include, but are not limited to, the following:

- Blood-Borne Pathogens Control Program,
- Hazard Communication Program,
- Hearing Conservation Program
- Hazardous Energy Control Program,
- Confined Space Entry Program,
- Safe Work Practices Program,
- Ergonomics Program,
- General Facility Safety Procedures:
 - Compressed Gas Safety Procedures,
 - Heavy Equipment Safety Procedures,
 - Hand Tools and Equipment Guarding Procedures,
 - Hoist and Rigging Safety Procedures,
 - Slips, Trips, and Falls Prevention Procedures, and
 - Hot Work Safety Procedures,
- Fall Protection Program,
- Contractor Safety Program, and
- Risk Management Plan (RMP).

7.7.4 Safety Training Programs

To ensure that employees recognize and understand how to protect themselves from hazards that will exist at the SGGs, comprehensive training programs for construction and operations personnel will be

implemented. The following sections provide an overview of the training programs that will be required for workers at SGGS.

7.7.4.1 Construction Safety Training Program

Workers participating in the construction phase of the proposed project will participate in applicable training programs designed to protect themselves and others from injuries while working at the site. All construction personnel will be required to attend a basic site safety orientation training course. Additional training will be provided to each individual based specifically on their job responsibilities or craft for those requirements where previous satisfactory training cannot be documented. All training courses will be documented and attendance records will be maintained at the local job site trailer. Table 7.7-4 provides an overview of the training programs that will be available to construction personnel.

7.7.4.2 Operation and Maintenance Safety Training Programs

Operations and maintenance employees assigned to the proposed project will be given instructions regarding their responsibility for the safe conduct of their work. These instructions will be given at the time the employee is first hired and as an ongoing training program of hazard recognition and avoidance. Employees will also be instructed in the safety procedures pertinent to their employment tasks. Safe working conditions, work practices, and protective equipment requirements will be communicated in the following manner:

- A new, promoted, or transferred employee will receive safety training orientation;
- Safety meetings will be held with employees;
- “Toolbox/tailgate” safety meetings will be conducted periodically (at least every 10 working days) for each crew. General safety topics and specific hazards that may be encountered will be discussed. Comments and suggestions from all employees will be encouraged;
- A monthly staff safety meeting will be held for supervisors;
- Hazard communication training, including California Proposition 65 warnings and discharge prohibitions, will be conducted as necessary when new hazardous materials are introduced to the workplace;
- Material safety data sheets will be available as required for all appropriate chemicals;
- A bulletin board with required postings and other information will be maintained at the plant site; and
- Warning signs (e.g., hazardous waste storage area, confined space area) will be posted in hazardous areas that comply with applicable regulations (i.e., bilingual, font size).

Safety training will be provided to each new employee as described below:

- A list of safe work rules for the SGGS facility will be explained to each new employee;
- A copy of the applicable Safe Work Practices will be given to each new employee. The provisions will be incorporated into training for the qualifications programs so that employees may fully understand what the protective provisions mean;

| Table 7.7-4 Construction Training Program | |
|---|---|
| Training Course | Target Employees |
| Site Safety Orientation | All |
| Injury and Illness Prevention Plan | All |
| Emergency Action Plan | All |
| PPE Program | All |
| Heavy Equipment Safety Program Forklift Operator Training | Employees working on, near, or with heavy equipment |
| Trenching and Excavation Safety Program | Employees working on or near trenches or excavations. |
| Fall Protection Program | Employees required to work at elevation (> 6 feet). |
| Scaffolding Safety Program | Employees required to erect or use scaffolding |
| Hoisting and Rigging Safety Program | Employees responsible for performing and/or supervising hoisting and rigging. |
| Crane Safety Program | Employees supervising or performing crane operations |
| Flammable and Combustible Liquid Storage and Handling | Employees responsible for the handling and storage of flammable or combustible liquids or gases |
| Hot Work Permits | Employees performing hot work |
| Hazardous Energy Control (Lockout/Tagout) | Employees performing lockout/tagout |
| Electrical Safety | Employees required to work on electrical systems and equipment |
| Permit Required Confined Space Entry | Employees required to supervise or perform confined space entry |
| Hand and Portable Power Tool Safety | All |
| Housekeeping Policy and Program | All |
| Hearing Conservation | All |
| Safe Lifting Program | All |
| Safe Driving Program | Employees supervising or driving motor vehicles |
| Hazard Communication | All |
| Pressure Safety | Employees supervising or working on pressurized systems or equipment |
| Line Breaking Safety | Employees performing general maintenance or working on pressurized systems or equipment |
| Respiratory Protection Program | All employees required to wear respiratory protection |
| Fire Prevention Program | All |
| Emergency Action Plan | All |
| HAZWOPER/First Responder | Employees working around hazardous materials or waste |

- The Hazard Communication Program and requirements for personal protection for the types of hazards that may be encountered at the SGGGS facility site will be explained and documented;
- Unusual hazards that are found onsite will be explained in detail to each new employee, including any specific requirements for personal protection; and
- Safety requirements for the new employee's specific job assignment will be explained by the foreman upon initial assignment and upon any reassignment.

Table 7.7-5 provides an overview of the training programs that will be available to operations and maintenance personnel.

Contractors. An element of the Operations and Maintenance Safety Training Program includes addressing compliance with contractor safety while on site. Contractors will be provided with a list of potential job safety hazards for their assigned activity by a foreman, including safety rules, chemical exposure hazards, physical hazards, and personal protection equipment. Contractors will also be invited to attend "tailgate" safety meetings.

7.7.5 Fire Protection

The fire suppression and protection procedures as they pertain to construction and operation of the proposed project are presented in Section 7.7.5.1. Section 7.7.5.2 presents a detailed description of fire protection systems that will be installed at SGGGS.

7.7.5.1 Construction Fire Suppression and Prevention

Onsite Construction Fire Suppression and Prevention. The proposed project will rely on both onsite fire protection systems and local fire protection services. The contractor will develop a Fire Protection and Prevention Plan to be followed throughout all phases of construction and will provide the specified fire-fighting equipment. The fire protection and prevention program will address each of the following requirements:

- General requirements,
- Responsibilities,
- Housekeeping,
- Employee alarm/communication system,
- Portable fire extinguishers,
- Fixed fire fighting equipment,
- Fire control,
- Combustible ground growth,
- Flammable and combustible liquid storage,
- Use and handling of flammable and combustible liquids,
- Dispensing and disposal of flammable and combustible liquids,
- Servicing and refueling areas, and
- Training.

During construction, portions of the facility fire-suppression system will be placed in service as soon as practicable to provide early fire protection. The fire-protection systems for the facility are described in Section 2.5.10. Construction fire prevention procedures will be developed in accordance with applicable regulations (8 CCR, Section 1620 et seq.) and will be followed as necessary to prevent construction-related fires. Special emphasis will be given to operations involving open flames, such as welding, metal cutting, and brazing. Hot work permits will be required for specific activities that present the potential for fire, and personnel involved in such operations will receive appropriate training by the contractor. In addition, a fire watch, using the appropriate class of extinguishers or other equipment, will be maintained during hot work operations. Site personnel will not be expected to fight fires past the incipient stage.

| Table 7.7-5 Operations and Maintenance Training Program | |
|--|---|
| Training Course | Target Employees |
| Site Safety Orientation | All |
| Injury and Illness Prevention Plan | All |
| Emergency Action Plan | All |
| PPE Program | All |
| Trenching and Excavation Safety Program | Employees performing or supervising trenching or excavation work |
| 100% Fall Protection Program | Employees required to use fall protection |
| Hoisting and Rigging Safety Program | Employees responsible for the oversight or conduct of hoisting and rigging |
| Forklift Operator Training | Employees working on, near, or with forklifts |
| Crane Safety Program | Employees supervising or performing crane operations |
| Flammable and Combustible Liquid Storage and Handling | Employees responsible for the handling and storage of flammable or combustible liquids or gases |
| Hot Work Permits | Employees performing hot work |
| Hazardous Energy Control (Lockout/Tagout) | Employees performing lockout/tagout |
| Electrical Safety | Employees required to work on electrical systems and equipment |
| Permit Required Confined Space Entry | Employees required to supervise or perform confined space entry |
| Hand and Portable Power Tool Safety | All |
| Housekeeping Policy and Program | All |
| Hearing Conservation | All |
| Safe Lifting Program | All |
| Safe Driving Program | Employees supervising or driving motor vehicles |
| Hazard Communication | All |
| Pressure Safety | Employees supervising or working on pressurized systems or equipment |
| Line Breaking Safety | Employees performing general maintenance or working on pressurized systems or equipment |
| Relief Valve Maintenance and Testing | Employees performing maintenance or testing of relief valves |
| Respiratory Protection Program | All employees required to wear respiratory protection |
| Fire Prevention Program | All |
| Fire Protection Program | All |
| HAZWOPER/First Responder | Employees working with hazardous materials or waste |

Materials brought on site by contractors must conform to contract requirements, insofar as flame resistance or fireproof characteristics are concerned. Specific materials in this category include fuels, paints, solvents, plastic materials, lumber, paper, boxes, and crating materials. Specific attention will be given to compressed gases and storage of fuels, solvents, and paint.

Elements of the onsite fire-suppression system during construction will consist of portable and fixed fire-fighting equipment. Portable fire-fighting equipment will consist of fire extinguishers and small hose lines in conformance with Cal/OSHA and the National Fire Protection Association (NFPA). Periodic fire prevention inspections will be conducted by the contractor's safety representative.

Fire extinguishers will be inspected monthly and replaced immediately if defective or in need of recharge. All fire-fighting equipment will be located to allow for unobstructed access to the equipment and will be conspicuously marked. A temporary or permanent water supply, of sufficient volume, duration, and pressure to operate the required fire-fighting equipment, will be provided. Combustible materials will be controlled in covered roll-off dumpsters. Designated, approved flammable materials storage areas and flammable materials storage containers will be provided with adequate fire prevention systems.

Offsite Construction Fire Suppression Support. The SGGs onsite fire-suppression system will be supported by the City of Rancho Cucamonga Fire Department (RCFD). The RCFD will provide backup assistance and support to SGGs in the event of a construction-related fire. The nearest fire station is located in Rancho Cucamonga, approximately 4 miles from the facility. Response time is estimated to be approximately 5 minutes. The local fire response units will be provided information regarding the type and location of potential fire hazards at the site. This information will be included in emergency response planning.

7.7.5.2 Operations Fire Suppression and Prevention

Fire protection at the proposed project site will include measures relating to safeguarding human life, preventing personnel injury, preserving property, and minimizing down time due to fire or explosion (National Safety Council, 1992). It will principally involve physical arrangements, such as sprinkler systems, water supplies, and fire extinguishers. Fire protection measures will include measures to prevent the inception of fires. Of concern are adequate exits, fire-safe construction, reduction of ignition sources, and control of fuel sources.

The SGGs facility is the fire protection responsibility of the RCFD. As such, fire-suppression systems will be subject to review and approval by the RCFD, which will have final approval responsibility. In addition, facilities will be designed by a California-Registered Fire Protection Engineer, and fire protection equipment will be installed and maintained in accordance with applicable NFPA standards and recommendations (National Fire Protection Association, 1994).

The RCFD representative will perform the final inspection of the proposed project when construction is complete. In addition, the RCFD will conduct periodic fire and life safety inspections thereafter, including reviewing and approving programs for regular equipment inspections and servicing and for the training of employees in fire protection procedures. In addition, the project's insurance carrier will provide annual inspections by a fire protection specialist. Servicing of the fixed carbon dioxide (CO₂) and portable fire extinguishers will be conducted by a licensed contractor.

The overall fire prevention and protection program for the facility will be designed and implemented to protect both personnel and property. The program will specifically address:

- Names and/or job titles responsible for maintaining equipment and accumulation of flammable or combustible material control,
- Procedures in the event of fire,
- Fire alarm and protection equipment,
- System and equipment maintenance,
- Perimeter fire buffer maintenance,
- Monthly inspections,

- Annual inspections,
- Fire-fighting demonstrations and training, and
- Housekeeping practices.

Fire Suppression. The following fire-suppression systems are proposed:

- **Carbon Dioxide Fire Protection System.** This system will protect the CTG and appropriate accessory equipment compartments from fire. The system will have fire detection sensors in all appropriate compartments that warrant such protection.
- **Fire Hydrants/Hose Stations.** Water for the new power plant facilities' fire protection systems will be provided by interconnecting the new plant underground fire loop with the existing plant fire loop. A new 10-inch, high-density polyethylene (HDPE) fire water line will be added between the existing plant fire pumps, located in the southwest corner of the reclaimed water basin, and the combined cycle plant area to ensure that there is sufficient underground fire loop capacity to supply the requirements of the new plant. This line will be primarily routed from the east side of the existing plant along the existing entrance road to the north of the MWD aqueduct right-of-way. The new fire water line will be routed along with the new natural gas and reclaimed water pipelines being installed for the combined cycle plant.

The existing plant fire pumps, which include a motor-driven pump, diesel engine-driven pump, and jockey pump, will supply fire water to the new combined cycle power plant as well as the existing EGS. Hydraulic calculations will be performed to demonstrate that the underground fire protection loop has sufficient capacity to provide all the required fire-fighting water required for the existing EGS and the new combined cycle power plant.

Fire-suppression equipment supplied by the piping network will include fire hydrants at intervals necessary to provide coverage to all parts of the power plant, sprinkler systems in the administration building, control building, and warehouse, and hose reels located strategically throughout the plant.

- **Sprinkler System.** This system will provide protection to portions of the common services buildings.
- **Smoke Detectors, Combustible Gas Detectors, and Fire Extinguishers.** These will be provided at all locations having potential fire hazards due to the presence of combustible liquids, solids, or other highly flammable materials, and where major property damage could result. Extinguishers will be located at Uniform Fire Code-approved intervals throughout the facility as directed by the local fire inspector, and will be selected for the appropriate class of service.

Water will be used as the primary extinguishing agent. Chemical and gas extinguishing agents (permanently installed or in portable extinguishers) will be provided in special hazard areas where water would be ineffective or harmful to the equipment being protected.

7.7.6 Laws, Ordinances, Regulations, and Standards

The LORS applicable to worker safety and health are summarized in Table 7.7-6. California is one of 23 states that operates its own occupational safety and health program. As such, Cal/OSHA regulations will be administered at this site because the regulations are at least as stringent as those regulations enacted by the federal OSHA. The proposed project will operate in accordance with all laws, ordinances, regulations, and standards applicable to worker health and safety. Construction, operation and maintenance of the SGGS will be performed in conformance with the LORS as presented in Table 7.7-6. Effective development and implementation of the safety plans and programs described in this section, and implementation of an ongoing, comprehensive safety assessment program will ensure compliance with the established health and safety regulations.

| Table 7.7-6 Applicable Worker Safety and Health Laws, Ordinances, Regulations, and Standards (Page 1 of 6) | | | |
|---|--|--|---|
| Administering Agency | Applicable LORS | Requirement/Compliance | AFC Section |
| California Occupational Safety and Health Act 1973 | Title 8, CCR | The Act establishes the Cal/OSHA and establishes minimum safety and health standards for work operations occurring in the state. | 7.7 |
| | 8 CCR, Section 339 | Requires listing of hazardous chemicals relating to the Hazardous Substance Information and Training Act. | 7.7.3.1, 7.7.3.2, 7.7.4.1, 7.7.4.2 |
| | 8 CCR, Section 450 et seq. – 560 et seq. | Establishes safety orders for pressurized vessels, including air tanks, anhydrous ammonia, and general safe work practices. | 7.7.3.2 |
| | 8 CCR, Section 750 et seq. | Establishes safety orders of work with high pressure steam. | 7.7.3.2 |
| | 8 CCR, Construction Safety Orders (Sections 1500 et seq. – 1938 et seq.) | Establishes safety orders for construction work. | 7.7.3.1 |
| | 8 CCR, Sections 1508 et seq. – 1527 et seq. | Requirements for IIPP, PPE, and general site safety. | 7.7.3.1 |
| | 8 CCR, Sections 1528 et seq. – 1537 et seq. | Requirements for controlling exposures to hazardous air contaminants. | 7.7.3.1 |
| | 8 CCR, Sections 1539 et seq. – 1547 et seq. | Requirements for excavations and trenching. | 7.7.3.1 |
| | 8 CCR, Sections 1590 et seq. – 1596 et seq. | Requirements for earth moving and haulage. | 7.7.3.1 |
| | 8 CCR, Sections 1597 et seq. – 1599 et seq. | Requirements for vehicles, traffic control, flaggers, barricades, and warning signs. | 7.7.3.1 |
| | 8 CCR, Sections 1604 et seq. – 1605 et seq. | Requirements for construction hoists. | 7.7.3.1 |
| | 8 CCR, Sections 1620 et seq. – 1635 et seq. | Requirements for railings, ramps, stairs, access and egress, openings in floors, roofs and walls, and temporary floors. | 7.7.3.1 |

| Table 7.7-6 Applicable Worker Safety and Health Laws, Ordinances, Regulations, and Standards (Page 2 of 6) | | | |
|---|--|---|--------------------|
| Administering Agency | Applicable LORS | Requirement/Compliance | AFC Section |
| California Occupational Safety and Health Act 1973 (continued) | 8 CCR, Sections 1635 et seq. – 1667 et seq. | Requirements for scaffolding. | 7.7.3.1 & 7.7.3.2 |
| | 8 CCR, Sections 1669 et seq. – 1678 et seq. | Requirements for safety belts, nets, and ladders. | 7.7.3.1 & 7.7.3.2 |
| | 8 CCR, Sections 1680 et seq. – 1708 et seq. | Requirements for saws, powder-actuated tools, miscellaneous tools, and equipment. | 7.7.3.1 & 7.7.3.2 |
| | 8 CCR, Sections 1709 et seq. – 1722 et seq. | Requirements for steel reinforcing, concrete pouring, and structural steel erection operations. | 7.7.3.1 |
| | 8 CCR, Sections 1760 et seq. | Electrical requirements for construction work. | 7.7.3.1 |
| | 8 CCR, Sections 1920 et seq. – 1938 et seq. | Requirements for construction-related fire protection and prevention. | 7.7.5.1 |
| | 8 CCR, Electrical Safety Orders (Sections 2299 et seq. – 2974 et seq.) | Establishes safety orders for installation of low- and high-voltage electrical systems. | 7.7.3.1 |
| | 8 CCR, General Industry Safety Orders (Sections 3200 et seq. – 6184 et seq.) | Establishes safety orders for general industry work, including operations and maintenance. | 7.7.3.2 |
| | 8 CCR, Sections 3200 et seq. – 3583 et seq. | Requirements for IIPP, PPE, and general site safety. | 7.7.3.2 |
| | 8 CCR, Sections 3620 et seq. – 3920 et seq. | Requirements for mobile equipment operation. | 7.7.3.2 |
| | 8 CCR, Sections 3940 et seq. – 4647 et seq. | Requirements for power transmission equipment, rotating equipment, moving parts points of operation, etc. | 7.7.3.2 |
| | 8 CCR, Sections 4794 et seq. – 4884 et seq. | Requirements for compressed gases and gas systems for cutting and welding. | 7.7.3.2 |

| Table 7.7-6 Applicable Worker Safety and Health Laws, Ordinances, Regulations, and Standards (Page 3 of 6) | | | |
|---|---|--|----------------------------|
| Administering Agency | Applicable LORS | Requirement/Compliance | AFC Section |
| California Occupational Safety and Health Act 1973 (continued) | 8 CCR, Sections 4850 et seq. – 4853 et seq. | Requirements for electric welding. | 7.7.3.2 |
| | 8 CCR, Sections 4884 et seq. – 5049 et seq. | Requirements for cranes and other hoisting equipment. | 7.7.3.2 |
| | 8 CCR, Sections 5094 et seq. – 5100 et seq. | Requirements for control of excessive noise exposure and ergonomic hazards. | 7.7.3.2 |
| | 8 CCR, Sections 5139 et seq. – 5223 et seq. | Requirements for the control of hazardous substances, including Hazard Communication program requirements. | 7.7.3.2 |
| | 8 CCR, Sections 5615 et seq. – 5629 et seq. | Requirements for the control of hazards from flammable liquids, gases, and vapors. | 7.7.3.2 |
| | 8 CCR, Sections 6150 et seq. – 6184 et seq. | Requirements for fire protection and prevention. | 7.7.5.2 |
| | 8 CCR, Part 6 | Provides health and safety requirements for working with tanks and boilers. | 7.7.3.2 |
| Federal Occupational Safety and Health Administration ¹ | 29 CFR 1926 | Contains federal health and safety regulations pertaining to construction activities. | 7.7.3.1 |
| | 29 CFR 1910 | Contains federal health and safety regulations pertaining to general industry. | 7.7.3.2 |
| California Health and Safety Code | Section 25500 et seq. (LaFollette Bill) | Requires that every new or modified facility that handles, treats, stores, or disposes of more than the threshold quantity of any of the listed acutely hazardous materials prepare and maintain a Risk Management Plan. | 7.12, 7.7.3.1, and 7.7.3.2 |
| | Sections 25500 et seq. – 25541 et seq. | Requires the preparation of a Hazardous Material Business Plan that details emergency response plans for a hazardous materials emergency at the facility. | 7.12 |

| Table 7.7-6 Applicable Worker Safety and Health Laws, Ordinances, Regulations, and Standards (Page 4 of 6) | | | |
|---|--|---|---------------------|
| Administering Agency | Applicable LORS | Requirement/Compliance | AFC Section |
| City of Rancho Cucamonga Fire Protection District | UFC, Article 80 | Requires the prevention, control, and mitigation of dangerous conditions related to storage, dispensing, use, and handling of hazardous materials and information needed by emergency response personnel. | 7.12 |
| | NFPA 10: Portable Fire Extinguishers | Requirements for the selection, placement, inspection, maintenance, and employee training for portable fire extinguishers. | 7.7.4 and 7.7.5 |
| | NFPA 12: Carbon Dioxide Fire Extinguishing Systems | Requirements for the installation and use of carbon dioxide extinguishing systems. | 7.7.5 |
| | NFPA 13 & 13A: Sprinkler Systems | Guidelines for selection, installation, maintenance, and testing of fire sprinkler systems. | 7.7.5 |
| | NFPA 14: Standpipe and Hose Systems | Guidelines for the selection and installation of standpipe and hose fire protection systems. | 7.7.5 |
| | NFPA 15: Water Spray Fixed Systems | Guidelines for selection and installation of fixed water spray systems. | 7.7.5 |
| | NFPA 22: Water Tanks and Private Fire Protection | Requirements for water tanks that are used for private fire protection. | 7.7.5 |
| | NFPA 24: Installation of Private Fire Service Mains and their Appurtenances | Requirements for installation of private fire service mains and appurtenances. | 7.7.5 |
| | NFPA 26: Supervision of Valves Controlling Water Supplies | Provides guidance for installation and supervision of valves used to control water supplies. | 7.7.5 |
| | NFPA 30: Flammable and Combustible Liquids | Requirements for storage, transfer, and use of flammable and combustible liquids. | 7.7.3.1 and 7.7.3.2 |
| NFPA 37: Stationary Combustion Engines and Gas Turbines | Provides fire protection requirements for the installation and use of combustion engines and gas turbines. | 7.7.5 | |

| Table 7.7-6 Applicable Worker Safety and Health Laws, Ordinances, Regulations, and Standards (Page 5 of 6) | | | |
|---|---|--|---------------------|
| Administering Agency | Applicable LORS | Requirement/Compliance | AFC Section |
| City of Rancho Cucamonga Fire Protection District | NFPA 50A: Gaseous Hydrogen Systems | Provides fire protection requirements for hydrogen systems. | 7.7.5 |
| | NFPA 54: National Fuel Gas Code | Provides fire protection requirements for the use of fuel gas. | 7.7.5 |
| | NFPA 70, 70B & 70E: National Electric Code | Guidance on the safe selection and work practices associated with the design, installation, construction, and maintenance of electrical systems. | 7.7.3.1 and 7.7.3.2 |
| | NFPA 71: Installation, Maintenance and use of Central Station Signaling Systems | Provides requirements for the installation, maintenance, and use of central station signaling systems. | 7.7.5 |
| | NFPA 72A, 72E & 72F: Local Protective Signaling System, Automatic Fire Detection System, Emergency Voice/Alarm Communication System | Provides requirements for the design, installation, use, and maintenance of local protective signaling systems, automatic fire detection systems, and emergency communication systems. | 7.7.5 |
| | NFPA 78: Lightning Protection Code | Provides requirements for lightning protection. | 7.7.3.1 |
| | NFPA 80: Fire Doors and Windows | Provides requirements for fire doors and windows. | 7.7.3.1 |
| | NFPA 90A: Installation of Air Conditioning and Ventilation Systems | Provides guidance for the installation of air conditioning and ventilation systems. | 7.7.3.1 |
| | NFPA 101: Life Safety, Fire in Buildings and Structures | Requirements for the design and construction of means of egress from structures. | 7.7.3.1 |
| | NFPA 291: Fire Flow Testing and Marking of Hydrants | Requirements for flow testing and marking of fire hydrants. | 7.7.3.2 |
| NFPA 1962: Care, Maintenance and Use of Fire Hoses | Requirements for the care, use, and maintenance of fire hoses, connections, and nozzles. | 7.7.3.2 | |

| Table 7.7-6 Applicable Worker Safety and Health Laws, Ordinances, Regulations, and Standards (Page 6 of 6) | | | |
|---|---|--|--------------------|
| Administering Agency | Applicable LORS | Requirement/Compliance | AFC Section |
| City of Rancho Cucamonga Building and Safety Department | ANSI/ASME Boiler and Pressure Vessel Code | Provides specifications and requirements for boilers and pressure vessels. | 7.7.3 |
| | ANSI, B31.2, Fuel Gas Piping | Provides specifications and requirements for fuel gas piping. | 7.7.3.1 |
| <p>Note:</p> <p>¹ Cal/OSHA has primary jurisdiction for worker health and safety in California. These regulations are provided for reference purposes and apply as referenced in Cal/OSHA regulations.</p> <p>ANSI/ASME = American National Standards Institute/American Society for Mechanical Engineers Cal/OSHA = California Occupational Safety and Health Commission CCR = California Code of Regulations CFR = Code of Federal Regulations IIPP = Injury, illness, prevention program NFPA = National Fire Protection Association PPE = personal protective equipment UFC = Uniform Fire Code</p> | | | |

7.7.7 Involved Agencies and Agency Contacts

Agency contacts regarding worker health and safety at the SGGS facility are as follows:

| Issue | Agency/Address | Contact/Title | Telephone |
|--------------------------|--|---|-----------------------------------|
| Fire protection | San Bernardino County Fire Department Hazardous Materials Division 620 South E Street San Bernardino, CA 92415-0153 | Peter Brierty, Fire Marshall; Joe Ashbaker, Supervisor | (909) 356-3805, (909) 386-8401 |
| Building permits | City of Rancho Cucamonga, Building and Safety Department 10500 Civic Center Drive, Rancho Cucamonga, CA 91730 | William Makshanoff, Building Official, Building and Safety Department | (909) 477-2710 |
| Worker health and safety | San Bernardino Cal/OSHA District Office 464 W. 4th St., Ste. 332, San Bernardino, CA 92401 | Andy Morita, District Manager | (909) 383-4321 |
| Pressure vessel permit | Cal/OSHA Santa Ana Pressure Vessel Unit District Office 2000 East McFadden Avenue, Suite 215, Santa Ana, CA 92705 | Gary Teel, Senior Safety Engineer | (714) 567-7208 |

7.7.8 Permits Required and Permit Schedule

| Responsible Agency | Permit/ Approval | Schedule |
|---|---|---|
| Any Cal/OSHA district or field office | <p>Trenching and Excavation Permit</p> <p>Required for the following:</p> <ul style="list-style-type: none"> • Trenches and excavations more than 5 feet into which personnel are required to enter or adjacent to structures • Construction of buildings, structures, scaffolding, or falsework more than three stories high <p>Demolition of any building, structure, or the dismantling of scaffolding or falsework more than three stories high</p> | Submit completed permit application to any Cal/OSHA district or field office prior to commencing construction; submit at least 24 hours prior to “trigger event.” |
| Any Cal/OSHA Administration district or field office | <p>Permit for the erection of a fixed tower crane</p> <p>Required for the following:</p> <ul style="list-style-type: none"> • Erection, • Climbing, and • Dismantling of fixed tower cranes <p>Notifications to the Cal/OSHA must be made at least 24 hours prior to the initiation of the following activities:</p> <ul style="list-style-type: none"> • Completion of erection and commencement of operation • Climbing of the tower crane • Dismantling of the tower crane | Submit completed permit application to any Cal/OSHA district or field office; submit at least 24 hours prior to “trigger event.” |
| Santa Ana Pressure Vessel Unit District Office, Cal/ OSHA | Pressure Vessel Permit | 30 days prior to operation |
| Cal/OSHA = California Occupational Safety and Health Administration | | |

7.7.8.1 Permitting Agencies

The table above provides a list of applicable permits related to the protection of worker health and safety applicable to the proposed project. Provided for each permit are the activities covered and application requirements to obtain the permit.

7.7.8.2 Permitting Contacts

All permits noted in the table above may be obtained from the Cal/OSHA district office, which for work places in San Bernardino County is located in San Bernardino, California ((909) 383-4321).

7.7.8.3 Permitting Schedule

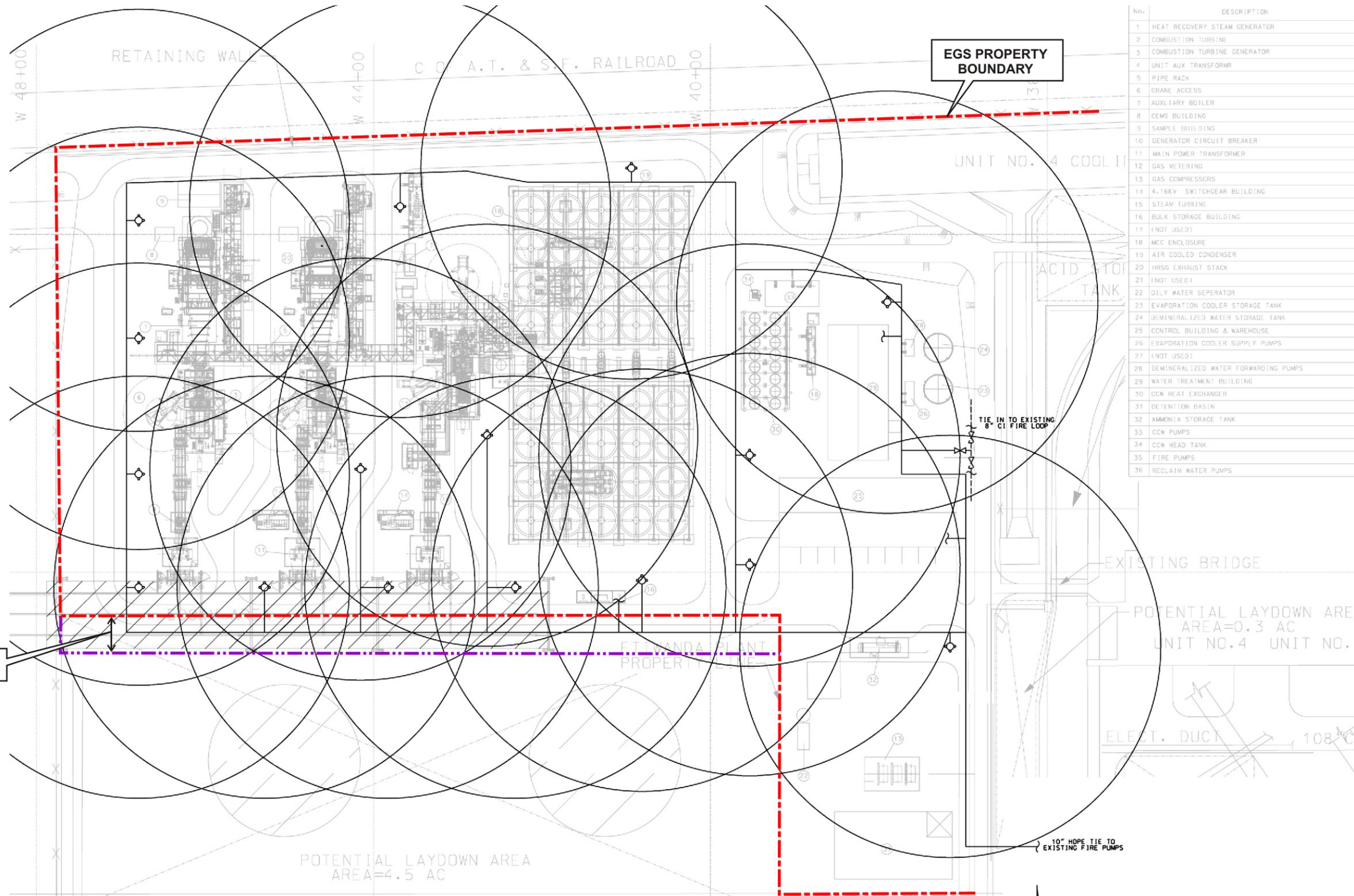
Permits listed above are supplied on an as-needed basis by any Cal/OSHA district or field office. Notification requirements are listed as “within 24 hours of a permit triggering event”; therefore, a specific permitting schedule is not provided because the permits may be required at variable times during the construction of the plant or during operations.

7.7.9 References

National Fire Protection Association, 1994. *A Compilation of NFPA Codes, Standards, Recommended Practices and Guides*. Quincy, Massachusetts.

National Safety Council, 1992. *Accident Prevention Manual*. Volume 2, Chapter 6, Fire Protection, pp. 1324-1386.

Reliant Energy, Inc., 2006. *Plant Operations Incident Prevention Manual*.



| No. | DESCRIPTION |
|-----|--------------------------------------|
| 1 | HEAT RECOVERY STEAM GENERATOR |
| 2 | COMBUSTION TURBINE |
| 3 | COMBUSTION TURBINE GENERATOR |
| 4 | UNIT AUX TRANSFORMER |
| 5 | PIPE RACK |
| 6 | CRANE ACCESS |
| 7 | AUXILIARY BOILER |
| 8 | CEMS BUILDING |
| 9 | SAMPLE BUILDING |
| 10 | GENERATOR CIRCUIT BREAKER |
| 11 | MAIN POWER TRANSFORMER |
| 12 | GAS METERING |
| 13 | GAS COMPRESSORS |
| 14 | 4.16KV SWITCHGEAR BUILDING |
| 15 | STEAM TURBINE |
| 16 | BULK STORAGE BUILDING |
| 17 | (NOT USED) |
| 18 | MCC ENCLOSURE |
| 19 | AIR COOLED CONDENSER |
| 20 | HRSG EXHAUST STACK |
| 21 | (NOT USED) |
| 22 | DILY WATER SEPERATOR |
| 23 | EVAPORATION COOLER STORAGE TANK |
| 24 | DEMINERALIZED WATER STORAGE TANK |
| 25 | CONTROL BUILDING & WAREHOUSE |
| 26 | EVAPORATION COOLER SUPPLY PUMPS |
| 27 | (NOT USED) |
| 28 | DEMINERALIZED WATER FORWARDING PUMPS |
| 29 | WATER TREATMENT BUILDING |
| 30 | CCW HEAT EXCHANGER |
| 31 | DETENTION BASIN |
| 32 | AMMONIA STORAGE TANK |
| 33 | CCW PUMPS |
| 34 | CCW HEAD TANK |
| 35 | FIRE PUMPS |
| 36 | RECLAIM WATER PUMPS |

40-ft Easement

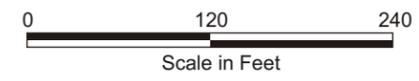
EGS PROPERTY BOUNDARY

TIE IN TO EXISTING 8" CI FIRE LOOP

10" HDPE TIE TO EXISTING FIRE PUMPS

POTENTIAL LAYDOWN AREA
AREA=4.5 AC

POTENTIAL LAYDOWN ARE
AREA=0.3 AC
UNIT NO.4 UNIT NO.



FIRE PROTECTION AND EMERGENCY RESPONSE EQUIPMENT

San Gabriel Generating Station
San Gabriel Power Generation, LLC
Rancho Cucamonga, California



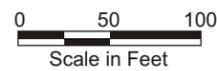
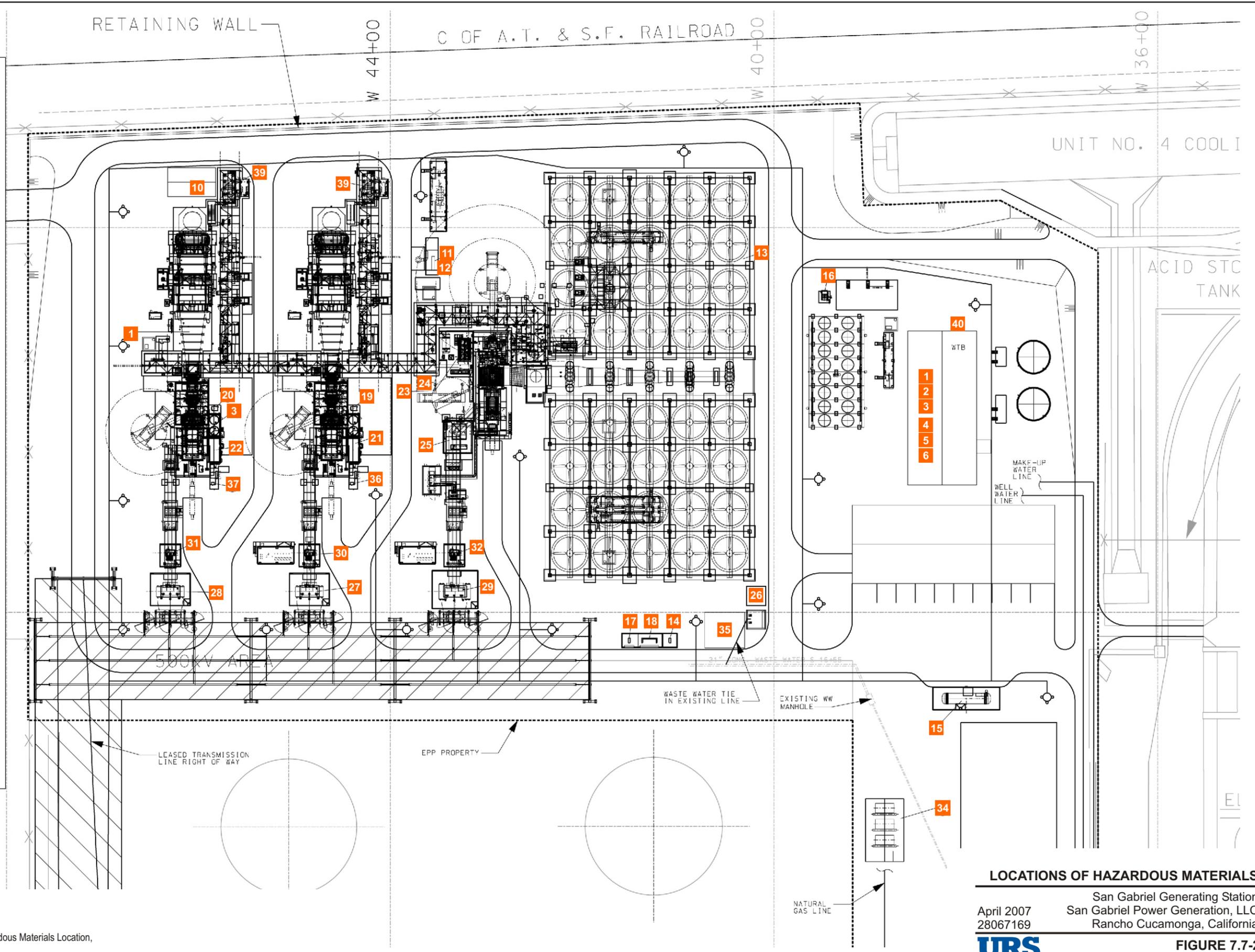
REPLACEMENT FIGURE 7.7-1

Source:
Sargent & Lundy, General Arrangement Fire Protection,
Drawing No. GA-06fp (Rev. 0), 02/27/07 (ga-06fp.dgn)

LEGEND

NO. STORAGE AREAS

- 1 SODIUM HYDROXIDE (CAUSTIC) 25% SOLUTION - 400 GAL. PLASTIC TOTE
- 2 PERMATREAT PC-191 (ANTISCALANT) - 400 GAL. PLASTIC TOTE
- 3 NALCO 8103 (POLYELECTROLYTE) - 200 GAL. PLASTIC TANK
- 4 SODIUM HYPOCHLORITE 10% SOLUTION - 500 GAL. PLASTIC TANK
- 5 NOT USED
- 6 SULFURIC ACID 66 BE - 550 GAL. PLASTIC TOTE
- 7 NALCO 7408 CHLORINE SCAVENGER (BISULFITE) - 400 GAL. ALUMINUM TOTE
- 8 NOT USED
- 9 NOT USED
- 10 ELIMIN-OX (OXYGEN SCAVENGER) - 400 GAL. PLASTIC TOTE
- 11 TRISODIUM PHOSPHATE - 100 GAL. PLASTIC DAY TANK
- 12 ELIMIN-OX (OXYGEN SCAVENGER) - 100 GAL. PLASTIC DAY TANK
- 13 ACC STORAGE (SULFURIC ACID, SODIUM BISULFITE, SODIUM HYPOCHLORITE)
- 14 BULK STORAGE (PERMATREAT, CAUSTIC, ELIMIN-OX, TRISODIUM PHOSPHATE, POLYELECTROLYTE)
- 15 AMMONIA 29.4% - 15,000 GAL. BULK STORAGE TANK
- 16 67% DEMIN WATER - 33% PROPYLENE GLYCOL - 1,500 GAL. STEEL TANK
- 17 HAZARDOUS WASTE STORAGE - MISCELLANEOUS DRUMS OF WASTE
- 18 OIL STORAGE AREA - 55 GAL. MISCELLANEOUS CARBON STEEL DRUMS (-20 DRUMS)
- 19 COMBUSTION TURBINE 1 HYDRAULIC RESERVOIR - 100 GAL. TANK
- 20 COMBUSTION TURBINE 2 HYDRAULIC RESERVOIR - 100 GAL. TANK
- 21 COMBUSTION TURBINE 1 LUBE OIL RESERVOIR - 3,600 GAL. TANK
- 22 COMBUSTION TURBINE 2 LUBE OIL RESERVOIR - 3,600 GAL. TANK
- 23 STEAM TURBINE LUBE OIL RESERVOIR - 4,500 GAL. TANK
- 24 DIRTY LUBE OIL TANK - 6,600 GAL. TANK
- 25 SEAL OIL TANKS - 1,404 GAL. LUBE OIL
- 26 OIL/WATER SEPARATOR - 4,000 GAL. TANK
- 27 MAIN POWER TRANSFORMER 1 - 12,478 GAL. TRANSFORMER OIL
- 28 MAIN POWER TRANSFORMER 2 - 12,478 GAL. TRANSFORMER OIL
- 29 STEAM TURBINE MAIN POWER TRANSFORMER - 19,661 GAL. TRANSFORMER OIL
- 30 UNIT AUXILIARY TRANSFORMER 1 - 1,779 GAL. TRANSFORMER OIL
- 31 UNIT AUXILIARY TRANSFORMER 2 - 1,779 GAL. TRANSFORMER OIL
- 32 UNIT AUXILIARY TRANSFORMER 3 - 1,779 GAL. TRANSFORMER OIL
- 33 NOT USED
- 34 GAS COMPRESSOR LUBE OIL (TBD GALLONS)
- 35 COMPRESSED HYDROGEN, CARBON DIOXIDE, AND NITROGEN BOTTLE STORAGE AREA (TBD GALLONS)
- 36 CT1 FIRE PROTECTION SKID (LP CO2) - 6 TON TANK
- 37 CT2 FIRE PROTECTION SKID (LP CO2) - 6 TON TANK
- 38 WELDING GASES (ARGON, OXYGEN, AND ACETYLENE) - 14 BOTTLES
- 39 CEMS GASES CO₁, O₂ & NO_x
- 40 CITRIC ACID 50% SOLUTION - 55 GAL. DRUM



Source:
Sargent & Lundy, General Arrangement Chemical & Hazardous Materials Location,
Drawing No. GA-06-4 Rev. 0, 03-12-2007 (ga-haz.dgn)

LOCATIONS OF HAZARDOUS MATERIALS

San Gabriel Generating Station
San Gabriel Power Generation, LLC
Rancho Cucamonga, California



FIGURE 7.7-2