

## **5.17 WORKER SAFETY**

This chapter addresses safety and health issues and describes or outlines systems and procedures that will be implemented to provide occupational safety and health protection for the El Segundo Power Redevelopment (ESPR) Project, including any aspects of the on-site pipelines under the applicant's control. The applicant understands and will comply with all applicable worker health and safety laws, ordinances, regulations and standards (LORS). All elements of the Title 8 California Code of Regulations (CCR), General Industry Safety Orders (GISO), Construction Safety Orders (CSO), and Electrical Safety Orders (ESO), with special attention paid to Section 3203, Injury and Illness Prevention Program, are addressed. Section 5.17.1 describes the affected environment relative to worker health and safety. Worker safety programs are already in place and will be updated to reflect facility changes. An outline of the principal components of the health and safety programs to be implemented in each stage of construction is presented in Section 5.17.2, Environmental Consequences. Section 5.17.4 addresses compliance with LORS. Lastly, Section 5.17.5 presents references.

### **5.17.1 Affected Environment**

The ESPR project entails the demolition of the existing power blocks of Units 1 and 2 and construction and operation of a combined cycle natural gas fired cogeneration facility with ancillary facilities including pipelines. Maps depicting the physical plant layout are presented as Figures 3.1-1 and 3.1-5. Descriptions of the facility fire protection and safety features are presented in Section 3.4.10 and shown on Figure (e.g., firewater skid). The locations of hazardous materials and toxic chemicals are listed in Tables 3.4.6-1 and 3.4.6-2, and are keyed to Figure 3.2-1, 3.4-2A and 3.4-2B. Information on project waste-streams is presented in Section 3.4.6.3, including Table 3.4.6-3.

#### **Health and Safety Plans**

ESGS is an operating facility with existing plans and programs. Existing plans will be modified to accommodate construction of ESPR and operation of the changed facility. Key existing plans are included in Appendix N. In this section proposed plans are discussed in terms of changes to existing plans.

The demolition, construction and operation of the ESPR Project, including power plant pipelines, may involve worker exposure to potential hazards such as:

- Slips/trips/falls
- Lacerations or contusions
- Hazardous materials and hazardous wastes

- Ergonomic illnesses
- Electrical equipment
- Noise
- Harmful dusts, fumes, mists, vapors, etc.
- Extremely hot gases and steam
- Fire
- Pressurized vessels and confined spaces
- Natural gas and other fuels
- Hand and portable power tools
- Heavy construction equipment and vehicles.

## **5.17.2 Environmental Consequences**

### **5.17.2.1 Facility Impacts**

**5.17.2.1.1 Occupational Health and Safety.** Construction, operation, and maintenance activities may expose workers to the hazards identified in Table 5.17-1. Accidents during these activities may affect worker health and safety. These potential health and safety impacts are avoided through adherence to appropriate engineering design criteria and administrative controls, use of applicable personal protective equipment and compliance with all applicable health and safety laws, ordinances and standards. The programs, regulations, and preventive measures intended to control potential worker health and safety impacts associated with these hazards are described in the remainder of this section. This encompasses a comprehensive health, safety, and fire prevention program that enforces safe and healthful practices and implements an accident/injury prevention program intended to ensure healthful and safe operations at the facility.

Environmental Site Assessments have been conducted at the site to evaluate the property conditions defined by the project. The results of the studies have identified the potential presence of hazardous substances or petroleum products that may impact the property. The health and safety plan for worker safety during the construction of the project will address potential hazardous substances in soil and groundwater.

**Construction Safety Program.** During demolition and construction, the applicant (or construction and/or demolition contractor) will ensure compliance with the Construction Safety Program, and all federal, state, and local health standards that pertain to worker health and safety.

TABLE 5.17-1

**POTENTIAL WORKER HAZARDS DURING  
FACILITY CONSTRUCTION AND OPERATION**

<b>Activity</b>	<b>Potential Hazard</b>
<b><u>Facility Construction</u></b>	
Elevated work	Slips/trips/falls
Welding	Flash burns, explosion, thermal burns, toxic welding fumes
Excavations	Excavation/trench wall collapse, spoil movement, oxygen deficiency, buildup of toxic gases, fumes, vapors, dusts or mists, wet exposures, crushing hazards, confined spaces, potentially contaminated soil/waste.
Cement/forms work	Slips/trips/falls, protruding objects, caustics, punctures, and lacerations
Equipment operation	Noise exposure, vehicle accidents, load hazards; induced current
Transmission lines/ transformer station	Slips/trips/falls, electrocution, flash burns
Painting	Paint solvents, paint vapors, chemical burns, fire/explosion, slips/trips/falls
Abrasive blasting	Dust, flying particles, pressure vessels, noise
Powered hand tools	Noise, dust, flying particles, cuts, amputation, crushing
Fueling	Fire and explosion, environmental contamination
<b><u>Facility Operations</u></b>	
Generation enclosure	High voltage
Operations building	High voltage, repetitive trauma
Cooling unit	Slips/trips/falls, noise, wet exposure, chemical exposure
Transformer	Electrical (i.e., electrocution and flash burns)
Gas compressor	Flammable, noise, temperature, rotating equipment, pressure
Compressed gas storage	Fire and explosion
Chemical storage	Chemical splashes, burns, reactions, gases, vapors, and fumes
Machinery, general	Noise, temperature extremes, rotating equipment, electrocution

**Construction Injury and Illness Prevention Program.** The existing written Construction Safety Program meets the California Occupational Safety and Health Administration's (Cal-OSHA) Injury and Illness Prevention Program (IIPP) requirements. The IIPP includes:

- A written Code of Safe Practices that relates to construction operations
- 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, including inspections

- Periodic meetings of supervisors by management to discuss safety problems and accidents
- System of ensuring employee and subcontractor compliance
- “Toolbox” or “tailgate” meetings conducted by supervisors with employees
- Methods of communicating with employees that encourage employees to expose unsafe activities
- Procedures for correcting unsafe conditions.

**Code of Safe Practices and Written Safety Programs.** A Code of Safe Practices will be developed for all work sites. Written safety programs that will be implemented in conjunction with the Code of Safe Practices may include:

- First-aid/blood-borne pathogen procedures
- Confined space entry procedures
- Electrical equipment procedures
- Lock out/tag out procedures
- Hearing Conservation Program
- Personal protective equipment fit-testing procedures
- Respiratory Protection Program
- Hazard Communication Program
- Recordkeeping procedures
- Injury and accident reporting and recording procedures
- Emergency Response Plan
- Fire Protection and Prevention Plan
- Medical record access procedures
- Housekeeping, material handling and storage procedures
- Vehicle and traffic procedures
- Ladder and scaffolding procedures
- Heavy equipment procedures
- Small tools and shop equipment procedures
- Welding and cutting procedures
- Crane and hoist procedures
- Compressed gas and air handling procedures
- “Toolbox/tailgate” safety meetings

- Subcontractor safety programs
- Equipment inspection program
- Bomb threat procedure
- Security program
- Supervisor safety and health orientation
- Excavation and trenching program
- Hazard identification team and safety marshal programs
- Project work procedures as developed.

**Personal Protective Equipment (PPE) Program.** Employees will be required to use Cal-OSHA-required PPE. Required PPE shall be approved and distinctly marked to facilitate identification. The type of PPE required for each job task will be evaluated and described as part of the job safety analysis for that task. The use of PPE for construction includes the items described in Table 5.17-2.

A respiratory protection program complying with 8 CCR, Section 5144, GISO, requirements will be developed, including respirator training, fit testing, monitoring, selection, etc. The work atmosphere will be tested/sampled per established protocols.

**Fire Protection and Prevention Plan.** The ESPR Project will rely on both onsite fire protection systems and local fire protection services. A Fire Protection and Prevention Plan will be developed and followed throughout all phases of construction the specified fire fighting equipment will be provided.

During construction, the permanent facility fire protection system will be placed in service as early as practicable. An interim fire protection system will be in place during construction until the permanent system is completed. The fire protection systems for the ESPR Project site are described in Section 3.4.10. Construction fire regulations in 8 CCR, Section 1620 et seq. will be followed as necessary to prevent construction fires. Applicable local fire requirements include:

TABLE 5.17-2

## BASIC PROTECTIVE EQUIPMENT GUIDE

<b>Body Area</b>	<b>Hazards</b>	<b>Recommended Protection</b>
<b>Eyes/Face</b>	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	Splashproof goggles and face shield
	Breaking into an acid storage system	Acid hood
	Welding - injurious light rays	Welding hood with appropriate eye filter lenses
<b>Head/Ears</b>	General wear, overhead rigging, material handling, maintenance and general construction operations	Hard hat
	High noise level	Ear plugs or muff
<b>Respiratory System</b>	Low-hazard inert dusts	Dust mask
	Low concentration solvent vapors	Cartridge-type organic vapor respirator
	Acid mists	Cartridge-type acid mist respirator
	High-concentration dusts or vapors Oxygen deficiencies or gases	Air line respirator Self-contained breathing apparatus
<b>Hands and Arms</b>	Handling rough or sharp objects	Leather gloves
	Handling hot objects	Insulated gloves
	Using solvents	Impervious synthetic gloves
<b>Feet and Legs</b>	General wear for light handling Handling heavy objects	Safety toe shoes Metatarsal safety shoes
	Using brush hooks or scythes	Shin guards
	Working with corrosive liquids	Safety toe boots
	Underground work	Safety toe synthetic boots
<b>Trunk and Full Body</b>	Hot or corrosive liquids	Synthetic apron
	Punctures, impact, or cuts	Canvas or leather kickback apron or metal mesh apron
	Breaking acid containers	Full body suit made of appropriate materials
<b>Fall Protection/Rescue</b>	Working from elevated structure of platform without standard railings	Safety belt and lanyard
	Vessel entry	Harness and lifeline or wristlets and lifeline
	Suspended scaffolds	Lifeline, safety belt/lanyard

- 1998 Edition of California Fire Code and all applicable National Fire Protection Association (NFPA) standards (24 CCR Part 9)
- Uniform Fire Code Standards
- California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.).

Special attention will be paid to operations involving open flames, such as welding, and use of flammable materials. Personnel involved in such operations will have appropriate training. A fire watch, utilizing appropriately classed extinguishers or other equipment, will be maintained during hazardous work operations. Site personnel will not be expected to fight fires past the incident stage. The local responding fire officials will be given information on the site hazards and the location of these hazards, and the information will be included in the emergency response planning.

Materials brought onsite 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 is paid to compressed gas, fuel, solvent, and paint storage.

Onsite fire prevention during demolition and 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 NFPA for the potential types of fire from demolition and construction activities. Periodic fire prevention inspections will be conducted by the contractor's safety representative.

Fire extinguishers will be inspected routinely and replaced immediately if defective or needing recharge. All fire-fighting equipment will be conspicuously located and marked with unobstructed access. A temporary or permanent water supply, of sufficient volume, duration or pressure to operate the required fire fighting equipment shall be provided as combustible materials accumulate. Designated, approved flammable storage areas and flammable containers shall be used with adequate fire control services.

**TABLE 5.17-3**

**LOCATION OF POTENTIAL WORKER HAZARDS AT THE  
EL SEGUNDO GENERATING STATION (OPERATIONAL PHASE)**

<b>Location</b>	<b>Acid<sup>1</sup></b>	<b>Flammable Material</b>	<b>Hazardous Material</b>	<b>High Voltage</b>	<b>Noise<sup>2</sup></b>	<b>Pressure Vessel</b>	<b>Pressurized Gas Cylinders</b>	<b>Rotating Equipment</b>	<b>High Temperature</b>
Control Room	X			X					
Maintenance Shop/Warehouse		X	X		X			X	
CTG/HRSG <sup>3</sup>	X	X	X		X	X			
Switchyards			X	X					
Stacks							X		
Oil-Water Separator									
Deareator									X

<sup>1</sup> Acid - Areas containing acids (sulfuric acid in batteries or sulfuric acid for pH control).

<sup>2</sup> Noise - Area requiring noise protection.

<sup>3</sup> CTG - combustion turbine generator; HRSG - heat recovery steam generator.

**5.17.2.1.2 Plant Operational Safety Program.** The locations of potential worker hazards during the operational phase are listed in Table 5.17-3. Employee safety programs have already been implemented for the existing ESGS facility. These programs will include regular employee education and training in safe work practices for general and particular task areas; communication of hazards in accordance with federal and state standards; accident and incident evaluations; administrative safety procedures; emergency response; fire prevention and fire response; and maintenance of safety performance data. All operations personnel have been provided with written safety guidance. All construction safety programs and procedures that apply to facility operations will be incorporated into the plant operational safety program. All safety programs will be updated to reflect changes in work practices resulting from the ESPR project.

**IIPP.** The primary mitigation measures for worker hazards during construction and operation are contained in the IIPP, which is required by 8 CCR, Section 3203. The written IIPP contains the following information:

- 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 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 when there is an imminent danger
- A training program for:
  - establishing the program initially
  - new, transferred, or promoted employees
  - new processes and equipment
  - supervisors
- Methods of documenting inspections and training and maintaining records for 3 years.

The IIPP designates a safety representative who is responsible for implementing the program. It also describes safety training for new employees and procedures for tracking safety training. The IIPP provides job hazard assessments (JHAs) for each job. The JHA identifies

safety hazards of each work task and establishes procedures for avoiding, correcting, reporting, and notifying employees of these hazards.

**Written Safety Program.** The IIPP is used in conjunction with other written safety programs. These programs include the following:

- Emergency Response Procedure
- Fire Protection and Prevention Plan
- Hazard Communication Plan
- Hearing Conservation Program
- Lock Out/Tag Out Procedure Safety Tagout Procedure
- Materials Safety and Handling Procedures
- Confined Space Entry Procedure
- Code of Safe Practices for Equipment and Operation
- Eye and Face Protection
- Good Housekeeping
- Preventing Slips, Trips, and Falls.

These programs are reviewed annually to determine if they are affected by any new regulations and to determine the effectiveness of their implementation. Other written programs or plans may relate to worker safety in that they enable work to be performed in a safe manner. These include standard operating procedures, worker qualifications programs, and site security.

**Safety Training Programs.** All construction and operation employees are given instructions regarding their responsibility for safe conduct of their work. These instructions are given in part at the time the employee is first hired and as an ongoing training program of hazard recognition and avoidance.

Employees are instructed in the safety regulations pertinent to their employment tasks. Safe working conditions, work practices, and protective equipment requirements are communicated in the following manner:

- New, promoted, or transferred employees receive safety training orientation.
- Weekly safety meetings are held with employees.
- “Toolbox/tailgate” safety meetings are conducted periodically for each crew. General safety topics and specific hazards that may be encountered are discussed. Comments and suggestions from all employees are encouraged.

- A monthly staff safety meeting is held for supervisors.
- Hazard communication training is conducted as new hazardous materials are introduced to the workplace.
- A bulletin board with required postings and other information is maintained at the plant site.
- Warning signs are posted in hazardous areas.

Safety training is provided to each new employee as described below:

- A list of safe work rules for the ESPR Project is explained to each new employee.
- A copy of the applicable Safe Work Practices is given to each new employee. The provisions are incorporated into training for the qualifications programs so that employees may fully understand what the protective provisions mean.
- The Hazard Communication Program and other applicable training and requirements for personal protection for the types of hazards that may be encountered at the ESPR Project site is explained to employees. This training is documented.
- Unusual hazards that are found onsite are explained in detail to each new employee, including any specific requirements for personal protection
- Safety requirements for the new employee's specific job assignment is explained by the foreman upon initial assignment and upon any reassignment.

**Personal Protective Program.** Personal protective clothing and equipment is used during specified work operations. Each employee is provided the following information pertaining to the protective clothing and equipment:

- Proper use and maintenance.
- When the protective clothing and equipment are to be used.
- Benefits and limitations.
- When and how the protective clothing and equipment are to be replaced.

- Each employee is checked for proper fit and to see if they are medically capable of wearing the equipment.

All safety equipment meets NIOSH or ANSI standards and has all required markings, numbers, or certificates of approval.

Table 5.17-2 contains a list of the basic protective equipment that is used at the ESGS.

**Chemical Storage.** Several new chemicals will be stored and used during construction and operation of the ESPR Project. The storage, handling, and use of all chemicals will follow applicable LORS. All chemicals will be identified by Chemical Abstract Service number and stored in appropriate chemical storage facilities. Bulk chemicals are stored in above-ground storage tanks, except for aqueous ammonia, which is stored in an underground storage tank. 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 are sized to hold an appropriate volume (considering the potential for the local hazard contingencies) as designated by a California registered Professional Engineer. At a minimum, this volume equals the full contents of the largest single tank plus sufficient freeboard for precipitation from a 25-year, 24-hour storm event in the case of outdoor storage tanks.

Safety showers and eyewash stations are provided in or adjacent to chemical storage and use areas. Typical safety gear for the exposure are provided in a readily available location for plant personnel for use during chemical minor spill containment and cleanup activities. A hazardous material emergency response team, trained in the handling of these chemicals and what to do in cases of chemical spills or accidental releases, will be available to the ESPR Project through contract. Adequate supplies of absorbent material are stored onsite for minor spill cleanup. Emergency contact numbers are available to obtain assistance from spill response teams and for notification of local agencies. These and other procedures are detailed in the plant operations manual.

**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 ESPR Project has a site specific Emergency Action Plan. A typical Emergency Action Plan outline is provided in Table 5.17-4. The Emergency Action Plan is designed to address potential emergencies, including chemical releases, fires, bomb threats, pressure vessel ruptures, aqueous ammonia releases and other catastrophic events. It describes evacuation routes, warning devices, points of contact, assembly areas, responsibilities, and other actions to be taken in the event of an emergency. The plan has a layout map, a fire extinguisher list, and describes arrangements with local emergency

response agencies for responding to emergencies. The Emergency Response Plan is used in conjunction with the IIPP.

**Fire Prevention Plan.** Fire protection at the ESPR Project plant site includes measures relating to safeguarding human life, preventing personnel injury, preservation of property and minimizing downtime due to fire or explosion (National Safety Council, 1992). It involves physical arrangements, such as sprinkler systems, water supplies and fire extinguishers. Fire protection measures include fire prevention 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 Fire Prevention Plan provides for fire protection practices including routine inspections of the ESPR Project plant by the designated safety representative. It requires prompt action to correct situations deemed to be a fire hazard. It identifies fire fighting equipment and systems at the plant as well as methods to safely store flammable and combustible materials. Facilities have been designed by a California Registered Fire Protection Engineer and fire protection equipment is installed and maintained in accordance with all applicable NFPA standards and recommendations (NFPA, 1994). A fire reporting protocol (depending on the size of the fire) and an investigation protocol are detailed in the Fire Protection and Prevention Plan.

The comprehensive onsite fire protection system and procedures are designed and implemented to protect both personnel and property. A Program Fire Protection Station Order have been developed to address:

- Procedures in the event of fire
- Fire alarm and protection equipment
- Monthly inspections
- Annual inspections
- Fire fighting demonstrations.

**TABLE 5.17-4****SAMPLE EMERGENCY RESPONSE PLAN OUTLINE**

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

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

- **Carbon Dioxide Fire Protection System.** This system protects the combustion turbine, its generator, and its accessory equipment compartments from fire. The system will have fire detection sensors in all compartments.
- **Deluge Spray System.** This system provides fire protection to the generator transformers (outdoor design) and auxiliary power transformer in the event of fire. The deluge system is fed by the firewater storage and supply system.
- **Fire Hydrants/Hose Stations.** This system will supplement the plant fire protection system. Water will be supplied from the plant underground fire water/domestic water system. These will be located at the required interval spacing.
- **Sprinkler System.** This system will provide protection to the administration and maintenance 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 strategically located at code-approved intervals throughout the facility and 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.

The ESPR Project onsite fire suppression systems will be backed up by fire suppression support from the City of El Segundo Fire Department. Both fire and emergency service are provided by the City of El Segundo Fire Department out of Station 1 located at 314 Main Street with an estimated response time of 3 to 5 minutes and Fire Station 2 located at 2161 El Segundo Blvd with an estimated response time of 8 to 10 minutes. Firewater will be supplied from the firewater distribution system as described in Section 3.4.10, Facility Fire Protection and Safety Fixtures.

### **5.17.3 Stipulated Conditions**

As a means of cooperating with the CEC and establishing a conciliatory relationship, and an open efficient AFC process that allows the Commission to utilize its resources in the most efficient manner possible, ESPR expresses a willingness to stipulate to and accept the

following CEC standard general conditions as promulgated by the CEC that apply to the issue area of worker safety and fire protection.

**SAFE-1: Create and Submit Required Safety Programs for Construction.** Project owner shall submit a copy of the Project Construction Safety and Health Program as follows: Construction Injury and Illness Prevention Program; Construction Fire Protection and Prevention Plan; and the Personal Protective Equipment Program.

**Protocol:** The Construction Injury and Illness Prevention Program and the Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders. The Construction Fire Protection and Prevention Plan shall be submitted to the City of El Segundo Fire Department for review and acceptance.

**Verification:** At least 30 days prior to the start of construction, or a date agreed to by the Construction Project Manager, the project owner shall submit to the CPM, a copy of the Project Construction Safety and Health Program, incorporating Cal-OSHA's Consultation Service comments, and a letter from the City of El Segundo Fire Department, stating that they have reviewed and accepted the Construction Fire Protection and Prevention Plan and the Personal Protective Equipment Program.

**SAFE-2: Create and Submit Required Safety Programs for Operation.** Project owner shall submit a copy of the Project Operation Safety and Health Program containing the following: Operation Injury and Illness Prevention Program; Emergency Action Plan; Operation Fire Protection Plan; and the Personal Protective Equipment Program.

**Protocol:** The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal-OSHA) Consultation Service, for review and comment concerning compliance of the program with all applicable Safety Orders.

**Verification:** At least 30 days prior to the start of operation, the project owner shall submit to the CPM a copy of the final version of the Project Operation Safety & Health Program. It shall incorporate Cal-OSHA Consultation Service comments and a letter from the City of El Segundo Fire Department stating that they have reviewed and accepted the specified elements of the proposed Operation Safety and Health Plan.

The project owner shall notify the CPM that the Project Operation Safety and Health Program (Injury and Illness Prevention Plan, Fire Protection Plan, Emergency Action Plan, and

Personal Protective Equipment requirements), including all records and files on accidents and incidents, is present on-site and available for inspection.

**SAFE-3: Exterior Lighting in Compliance.** The project owner shall design and install all exterior lighting to meet the requirements contained in the Visual Resources Conditions of Certification and in accordance with the American National Standards Practice for Industrial Lighting, ANSI/IES-RP-7.

**Verification:** Within 60 days after construction is completed, the project owner shall submit a statement to the CPM that the illuminance contained in ANSI/IES RP-7 were used as a basis for the design and installation of the exterior lighting.

#### **5.17.4 Mitigation Measures**

Environmental consequences related to worker safety are not foreseen, therefore additional measures beyond those proposed herein are not necessary.

#### **5.17.5 Applicable Laws, Ordinances, Regulations, and Standards**

The following LORS are applicable or potentially applicable to the proposed project in the context of the public and occupational safety and health protection measures addressed in Sections 5.16 (Public Health) and 5.17 (Worker Safety). LORS applicable or potentially applicable in the particular context of transmission line safety and nuisance concerns are identified in Sections 4.0 and 5.18 of this AFC. Other LORS serving generally to promote worker and public safety and health are identified within section 3.0 (Project Design and Construction); and 5.14 (Hazardous Materials and Waste Management). LORS applicable to worker safety are summarized in Table 5.17-5.

##### **5.17.5.1 Federal**

**Occupational Safety and Health Act of 1970 (OSHA), 29 USC §651 et seq.; 29 CFR §§1910 et seq.; and 29 CFR §1926 et seq.** The authority establishes occupational safety and health standards (§1910) [i.e., permissible exposure limits for toxic air contaminants (§1910.100), electrical protective equipment requirements (§1910.137), electrical workers safety standards (§1910.269), and the requirement that information concerning the hazards associated with the use of all chemicals is transmitted from employers to employees (§1910.1200)] and safety and health regulations for construction (§1926). Subpart I of §1910 and Subpart E of §1926 address personal protective equipment.

Under the Operational Status Agreement of October 5, 1989 between the Federal Occupational Safety and Health Administration (OSHA) and the California Department of

Industrial Relations, Division of Occupational Safety and Health (DOSH), the state resumed full enforcement responsibility for most of the relevant federal standards and regulations, (55 Fed. Reg. 18610 (July 12, 1990); 29 CFR §1952.172). Federal OSHA has retained concurrent enforcement jurisdiction with respect to certain federal standards including standards relating to hazardous materials at 29 CFR §1910.120 (*Id.*)

The administering agencies for the above authority are the Fed-OSHA and the DOSH (or Cal-OSHA).

**Department of Labor, Safety and Health Regulations for Construction Promulgated Under §333 of the Contract Work Hours and Safety Standards Act, 40 USC 327 et seq.**

The code establishes safety and health regulations for construction. The requirements for this regulation are all addressed in Title 8 California Code of Regulations, Chapter 4, Subchapter 4, General Construction Safety Orders.

The administering agencies for the above authority are Fed-OSHA and DOSH (or Cal-OSHA).

**Uniform Fire Code, Article 80.** The article includes provisions for storage and handling of hazardous materials. Considerable overlap exists between this code and Chapter 6.95 of the Health and Safety Code. However, the fire code does contain independent provisions regarding fire protection and neutralization systems for emergency venting (§80.303, D, Compressed Gases). Other articles that may be applicable include Article 4, Permits, and Article 79, Flammable and Combustible Liquids.

The administering agency for the above authority is the City of El Segundo Fire Department.

**National Fire Protection Association.** Prescribes minimum requirements necessary to establish a reasonable level of fire safety and property protection from the hazards created by fire and explosion. The standards apply to the manufacture, testing and maintenance of the equipment.

The administering agency for the above authority is the City of El Segundo Fire Department.

## **Compliance**

ESGS, as an operating power plant complies with all federal LORS. Construction and operation of the new facility will continue this compliance by updating the appropriate plans and policies as well as by measure described in 5.17.1, 5.17.2 and 5.17.3.

### **5.17.5.2 State**

**8 CCR.** These authorities prescribe general occupational safety and health regulations and standards in addition to the construction and industrial safety regulations, standards, and orders identified within the engineering categories addressed in Section 5.17, Worker Safety, of this AFC. Applicable sections of 8 CCR, Chapter 4, Subchapter 7 and 24 CCR, will be complied with. Topics of concern are provided in Table 7.4-2. Specifically, 8 CCR §§1509 (Construction and 3203 (General Industry) make numerous changes designed to redirect the emphasis of Cal-OSHA towards ensuring that employers have effective work site Illness and Injury Prevention Programs (IIPPs), to focus Cal-OSHA discretionary inspections in the highest hazard industries as determined by worker compensation and other occupational injury data, and to limit the number of follow-up inspections which Cal-OSHA must perform.

**Compliance.** ESGS, as an operating power plant complies with all state LORS. Construction and operation of the new facility will continue this compliance by updating the appropriate plans and policies as well as by measure described in 5.17.1, 5.17.2 and 5.17.3.

### **5.17.5.3 Local**

**City of El Segundo Municipal Code, Title 6, Chapter 6.21.** Provides for the implementation of the hazardous material inventory and emergency response program.

**Compliance.** ESGS, as an operating power plant complies with all local LORS. Construction and operation of the new facility will continue this compliance by updating the appropriate plans and policies as well as by measure described in 5.17.1, 5.17.2 and 5.17.3.

### **5.17.5.4 Agencies and Agency Contacts**

Agencies with jurisdiction to issue applicable permits and/or enforce LORS related to worker safety are shown in Table 5.17-6.

TABLE 5.17-5

## LORS APPLICABLE TO WORKER SAFETY

LORS	Applicability	Conformance (section)
<b>Federal</b>		
Occupational Health & Safety Act of 1970 (OSHA), 29 USC 651 <i>et seq.</i> ; 29 CFR 1910 <i>et seq.</i> ; and 29 CFR 1926 <i>et seq.</i> ,	Meet employee health and safety standards for employer-employee communications, electrical operations, and chemical exposures.	5.17.5.1
Department of Labor, Safety and Health Regulations for Construction Promulgated Under Section 333 of the Contract Work Hours and Safety Standards Act, 40 USC 327 <i>et seq.</i>	Meet employee health and safety standards for construction activities. Requirements addressed by CCR Title 8, General Construction Safety Orders.	5.17.5.1
National Fire Protection Association (See Table 7.4-1 for list of standards).	Meet standards necessary to establish a reasonable level of safety and property protection from the hazards created by fire and explosion.	5.17.5.1
<b>State</b>		
California Code of Regulations, Title 8.	Meet requirements for a safe and hazard-free working environment. Categories of requirements include General Industry Safety Orders, General Construction Safety Orders, Electrical Safety Orders.	5.17.5.2
California Clean Air Act, California Health & Safety Code 39650 <i>et seq.</i>	Meet requirements for Best Available Control Technology to minimize exposure limits to toxic air pollutants and possible risk assessments for carcinogen pollutants.	5.16.4.2
California Public Resources §25523(a); 20 CCR §1752, 1752.5, 2300.2309, and Division 2, Chapter 5, Article 1, Appendix B, Part (I), California Energy Commission (CEC)		5.16.4.2

**TABLE 5.17-5  
(CONTINUED)**

<b>LORS</b>	<b>Applicability</b>	<b>Conformance (section)</b>
California Health and Safety Code §25500 to 25541; 19 CCR §§2720-2734.	Estimate emissions for listed air toxic pollutants and submit inventory to air district for major sources of criteria air pollutants. Follow-up from air district may require a health risk assessment.	5.16.4.2
<b>Local</b>		
City of El Segundo Zoning Ordinance.	Provide safety setbacks as required by El Segundo Fire Department.	
City of El Segundo Municipal Code, Title 6, Chapter 6.21.	Provide implementation of the hazardous material inventory and emergency response program.	5.17.5.3

**TABLE 5.17-6**

**AGENCY CONTACTS**

<b>Agency</b>	<b>Contact</b>	<b>Title</b>	<b>Telephone</b>
City of El Segundo Fire Department	Steve Tsumara, CIH	Environmental Safety Manager	310-414-0929

**5.17.5.5 Applicable Permits**

The permits required for this project are listed in Table 5.17.7. The Hazardous Materials Business Plan will be updated prior to construction and prior to operation.

**TABLE 5.17-7**

**APPLICABLE PERMITS**

<b>Jurisdiction</b>	<b>Potential Permit Requirements</b>
<b>Federal</b>	None required
<b>State</b>	None required
<b>Local</b>	Hazardous Materials Business Plan (currently on file)

### 5.17.5 References

American Conference of Governmental Industrial Hygienists. 1996. Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices.

California Code of Regulations. ND. Title 8. "General Industry Safety Orders, Construction Safety Orders, and High Voltage Electrical Safety Orders".

Code of Federal Regulations. ND. Title 29 Part 1910. "Construction Safety Orders."

ND. Title 29 Part 1926. "General Industry Safety Orders."

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

National Institute for Occupational Safety and Health. 1992. Health Hazard Evaluation Report, U.S. Army Corps of Engineers, Ozark Power Plant, Ozark, Kansas. HETA-92-0243-2377.

1986. Health Hazard Evaluation Report, City of Ames Municipal Power Plant, Ames, Iowa. HETA-86-422-1891.

1985. Health Hazard Evaluation Report, Niagara Mohawk Power Corporation, Lycoming, New York. HETA-85-493-1786.

1983. Health Hazard Evaluation Report, Grand Gulf Nuclear Power Plant, Port Gibson, Mississippi. HETA-83-132-1508.

1978. Health Hazard Evaluation Report, U.S. Army Corps of Engineers, Ozark Power Plant, Ozark, Kansas.

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

Adequacy Issue:	Adequate	Inadequate	DATA ADEQUACY WORKSHEET			Revision No.	0	Date
Technical Area:	<b>Worker Safety</b>		Project:			Technical Staff:		
Project Manager:			Docket:			Technical Senior:		
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.			Sections 5.17.1, 5.17.2.1.1, 5.17.2.1.2, 5.17.3 and 5.17.4				
Appendix B (g) (11) (A)	A description of the safety training programs which will be required for construction and operation personnel.			Section 5.17.2.1.1				
Appendix B (g) (11) (B)	A complete description of the fuel handling system and the fire suppression system.			Section 5.17.2.3 and 5.17-14				
Appendix B (g) (11) (C)	Provide draft outlines of the Construction Health and Safety Program and the Operation Health and Safety Program, as follows:			Sections 5.17.2.1.1 and 5.17.2.1.2				
	Construction Health and Safety Program: * Injury and Illness Prevention Plan (8 Cal. Code Regs., § 1509);			Section 5.17.2.1.1				
	* Fire Protection and Prevention Plan (8 Cal. Code Regs., § 1920);			Section 5.17.2.1.1				
	* Personal Protective Equipment Program (8 Cal. Code Regs., §§ 1514-1522)			Section 5.17.2.1.1				
	Operation Health and Safety Program: * Injury and Illness Prevention Program (8 Cal. Code Regs., § 3203);			Section 5.17.2.1.2				
	* Fire Prevention Plan (8 Cal. Code Regs., § 3221);			Section 5.17.2.1.2				

Adequacy Issue:	Adequate	Inadequate	<b>DATA ADEQUACY WORKSHEET</b>			Revision No.	0	Date	
Technical Area:	<b>Worker Safety</b>		Project:				Technical Staff:		
Project Manager:			Docket:				Technical Senior:		
<b>SITING REGULATIONS</b>	<b>INFORMATION</b>			<b>AFC PAGE NUMBER AND SECTION NUMBER</b>	<b>ADEQUATE YES OR NO</b>	<b>INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS</b>			
	* Emergency Action Plan (8 Cal. Code Regs., § 3220);			Section 5.17.2.1.2					
	* Personal Protective Equipment Program (8 Cal. Code Regs., §§ 3401-3411).			Section 5.17.2.1.2					
Appendix B (h) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, and permits applicable to the proposed project, and a discussion of the applicability of 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;			Section 5.17.5 Table 5.17.2-5					
Appendix B (h) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits 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.			Section 5.10.5.4 Tables 5.17.5.4, 5.17-6 and 5.17-7					
Appendix B (h) (2)	A discussion of the conformity of the project with the requirements listed in subsection (h)(1)(A).			Sections 5.17.2, 5.17.3 and 5.17.4					
Appendix B (h) (3)	The name, title, phone number, and address, if known, of an official within each agency who will serve as a contact person for the agency.			Section 5.17.5.4 Table 5.17-6					
Appendix B (h) (4)	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.			Section 5.17.5.4 Table 5.17-7					

