

## 8.16 WORKER HEALTH AND SAFETY

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This section outlines plans and programs that would be implemented at the Russell City Energy Center (RCEC) and AWT plant to protect the worker health and safety, both during construction and operation. During its construction, the project will provide short-term job opportunities for 277 workers on average and 485 workers at peak construction employment. During its operation, the RCEC is expected to employ approximately 25 people in the RCEC and 6 people in the advanced wastewater treatment (AWT) plant in full-time, on-site positions.

Due to the subject matter, this section follows a slightly different format than other sections in Chapter 8. Instead of a standard discussion of affected environment, followed by the project's environmental consequences and proposed mitigation measures for significant impacts, this section describes the plans and programs that are proposed to protect worker health and safety during construction and operation, then follows with lists of permits required for construction and operation and their issuing agencies. The contractors selected for this project and the operators of the facility will develop specific plans and programs as described.

The analysis presented in this section meets all requirements of the CEC and CAL-OSHA. Section 8.16.1 provides an overview of the proposed RCEC and AWT plant work sites and an explanation of the hazards that may conceivably be encountered during construction and routine operations. Section 8.16.2 outlines the health and safety programs to be implemented at the RCEC. A Fire Protection and Prevention Plan is one of these programs, and Section 8.16.2 discusses the proposed onsite fire suppression system to be used during construction and operation of the RCEC. Section 8.16.3 outlines the safety training programs that Calpine/Bechtel will use to educate workers on hazards and hazard controls. Section 8.16.4 presents applicable laws, ordinances, regulations and standards (LORS). Section 8.16.5 references permit requirements and the schedule to obtain those permits; Section 8.16.6 references agency contacts. At this point, many of the programs presented in Section 8.16 are generic. As the design of the facility proceeds, however, these programs will be updated to reflect current conditions and knowledge. Implementing the programs outlined here will prevent impacts to worker health and safety. No additional mitigation measures will be required.

### 8.16.1 Workplace Description

Workers will potentially be exposed to hazards during construction and routine operations of the RCEC and AWT plant. Section 2.2 of this AFC contains detailed information regarding the power plant layout, conceptual design, and operation. Section 2.3 discusses facility safety design and Section 2.4 discusses facility reliability. These sections are also relevant to worker health and safety.

Table 8.16-1 provides a general hazard analysis that identifies the anticipated hazards to be encountered during construction of both the RCEC and AWT plant. This table also lists health and safety program components that will be implemented to control each hazard. The project's Health and Safety Officer can expand this hazard analysis to greater detail and implement appropriate hazard controls as each task is scheduled to be performed.

Table 8.16-2 provides a hazard analysis that identifies the anticipated hazards and hazard controls for the operation of the RCEC AWT plant during normal operations after construction. While the types of hazards identified in this table are similar to those

**Table 8.16-1. Construction hazard analysis.<sup>1/</sup>**

<b>Activity</b>	<b>Hazard</b>	<b>Control</b>
Heavy equipment use	Employee injury and property damage from collisions between people and equipment	Heavy Equipment Safety Program
Forklift operation	Same as heavy equipment	Forklift operator training
Trenching and excavation	Employee injury and property damage from the collapse of trenches and excavations	Trenching and Excavation Safety Program Use of Excavation Permits per Cal-OSHA
Working at elevated locations	Falls from same level and elevated areas	100% Fall Protection Program Scaffolding Safety Program
Use of cranes or derricks	Property damage from falling loads Employee injuries from falling loads Injuries and property damage from contact with crane or derrick	Obtain Crane permits as required per Cal-OSHA Hoisting and Rigging Safety Program
Working with flammable and combustible liquids	Fire	Flammable and Combustible Liquid Storage and Handling program Fire Prevention Program Fire Protection Program Housekeeping Policy and Program
Working with hazardous materials and hazardous waste	Employee injury due to ingestion, inhalation, dermal contact	HAZWOPER <sup>2</sup> training, as required for hazardous wastes Hazard Communication Program (hazardous substances and information training)
Hot work (including cutting and welding)	Employee injury and property damage from fire Exposure to fumes during cutting and welding Ocular exposure to ultraviolet and infrared radiation during cutting and welding	Hot Work Permit Program Respiratory Protection Program Industrial Hygiene Monitoring Program Personal Protective Equipment (PPE) Program Housekeeping Policy and Program
Troubleshooting and maintenance of plant systems and general construction activities	Employee injury and property damage from contact with hazardous energy sources (electrical, thermal, mechanical, etc.)	Hazardous Energy Control (Lockout/Tagout) Program
Working on electrical equipment and systems	Employee contact with live electricity	Electrical Safety Program PPE Program Hazardous Energy Control (Lockout/Tagout) Program
Confined space entry	Employee injury from physical and chemical hazards	Permit Required Confined Space Entry Program
General construction activities	Employee injuries from hand and portable power tools	Hand and Portable Power Tool Safety Program PPE Program

**Table 8.16-1. (Continued)**

<b>Activity</b>	<b>Hazard</b>	<b>Control</b>
General construction activities	Employee injury and property damage from inadequate walking and work surfaces	Housekeeping Policy and Program
General construction activities	Employee overexposure to occupational noise	Hearing Conservation Program PPE Program
General construction activities	Employee injury from improper lifting and carrying	Safe Lifting Program—Provide adequate material handling equipment
General construction activities	Employee injury and property damage from unsafe driving	Safe Driving Program
General construction activities	Employee overexposure to hazardous gases, vapors, dusts, and fumes	Hazardous Substances and Information Training Program Respiratory Protection Program PPE Program Industrial Hygiene Exposure Monitoring
Construction, testing, troubleshooting, maintenance and repair of high pressure steam and air systems	Employee injury and property damage due to failure of pressurized system components or unexpected release of pressure	Installation of proper relief valves and institution of a relief valve maintenance and testing program Proof testing of pressure system components Pressure Vessel Permit to Operate (Cal-OSHA) as required by 8 CCR 450 Hazardous Energy Control (Lockout/Tagout ) Program Line Breaking Safety Program
<sup>1</sup> The hazard and hazard controls provided are generic to construction activities. As the design and construction of the facility proceeds, these analyses will be updated to reflect current conditions and knowledge. <sup>2</sup> HAZWOPER = Hazardous Waste Operation Emergency Response		

**Table 8.16-2. Operations hazard analysis.<sup>1/</sup>**

<b>Activity</b>	<b>Hazard</b>	<b>Control</b>
Heavy equipment use	Employee injury and property damage from collisions between people and equipment	Heavy Equipment Safety Program
Working at elevated locations	Falls from same level and elevated areas	100% Fall Protection Program Scaffolding Safety Program
Use of cranes or derricks	Property damage from falling loads Employee injuries from falling loads Injuries and property damage from contact with crane or derrick	Obtain Crane permits as required per Cal-OSHA Hoisting and Rigging Safety Program

**Table 8.16-3. (Continued)**

<b>Activity</b>	<b>Hazard</b>	<b>Control</b>
Working with flammable and combustible liquids	Fire	Flammable and Combustible Liquid Storage and Handling program Fire Prevention Program Fire Protection Program Housekeeping Policy and Program
Working with hazardous materials and hazardous waste	Employee injury due to ingestion, inhalation, dermal contact	HAZWOPER <sup>2</sup> training, as required for hazardous wastes Hazard Communication Program (hazardous substances and information training)
Hot work (including cutting and welding)	Employee injury and property damage from fire Exposure to fumes during cutting and welding Ocular exposure to ultraviolet and infrared radiation during cutting and welding	Hot Work Permit Program Respiratory Protection Program Industrial Hygiene Monitoring Program Personal Protective Equipment (PPE) Program Housekeeping Policy and Program
Troubleshooting and maintenance of plant systems and general operation activities	Employee injury and property damage from contact with hazardous energy sources (electrical, thermal, mechanical, etc.)	Hazardous Energy Control (Lockout/Tagout) Program
Working on electrical equipment and systems	Employee contact with live electricity	Electrical Safety Program PPE Program Hazardous Energy Control (Lockout/Tagout) Program
Confined space entry	Employee injury from physical and chemical hazards	Permit Required Confined Space Entry Program
General operation activities	Employee injuries from hand and portable power tools	Hand and Portable Power Tool Safety Program PPE Program
General operation activities	Employee injury and property damage from inadequate walking and work surfaces	Housekeeping Policy and Program
General operation activities	Employee overexposure to occupational noise	Hearing Conservation Program PPE Program
General operation activities	Employee injury from improper lifting and carrying	Safe Lifting Program - Provide adequate material handling equipment
General operation activities	Employee injury and property damage from unsafe driving	Safe Driving Program
General operation activities	Employee overexposure to hazardous gases, vapors, dusts, and fumes	Hazardous Substances and Information Training Program Respiratory Protection Program PPE Program Industrial Hygiene Exposure Monitoring

**Table 8.16-3. (Continued)**

<b>Activity</b>	<b>Hazard</b>	<b>Control</b>
Operation, testing, troubleshooting, maintenance and repair of high pressure steam and air systems	Employee injury and property damage due to failure of pressurized system components or unexpected release of pressure	Installation of proper relief valves and institution of a relief valve maintenance and testing program Proof testing of pressure system components Pressure Vessel Permit to Operate (Cal-OSHA) as required by 8 CCR 450 Hazardous Energy Control (Lockout/Tagout ) Program Line Breaking Safety Program

<sup>1</sup> The hazard and hazard controls provided are generic to operational activities. As the design and construction of the facility proceeds and routine operations are initiated, these analyses will be updated to reflect current conditions and knowledge.

<sup>2</sup> HAZWOPER = Hazardous Waste Operation Emergency Response

identified for construction (Table 8.16-1), workers may encounter these same hazards under different situations during operation than construction. There is considerable duplication between the tables for this reason. A major component of a safety program for normal operations is the development of standard operating procedures that incorporate the elements of the hazard analysis to assure that workers implement the safety measures.

## **8.16.2 Health and Safety Programs**

During construction of both the RCEC and AWT plant a number of programs will be implemented that are designed specifically to mitigate hazards and, in accordance with applicable regulations, to protect the safety and health of the workers. Because the City of Hayward will own and operate the AWT plant, the City will be responsible for implementing the applicable safety programs to protect workers at the AWT plant site during operations, per Cal-OSHA regulations. The following sections outline the content of these programs.

### **8.16.2.1 Construction Health and Safety Program**

The key health and safety programs for project construction include:

- Injury and Illness Prevention Plan
- Fire Protection and Prevention Plan
- Personal Protective Equipment Program
- Construction Written Safety Program

The following are brief outlines of these programs.

#### ***Injury and Illness Prevention Plan***

This plan implements the requirements of the Cal-OSHA program, as specified in Title 8 CCR Section 1509, for construction and includes:

- Responsibility and authority for implementing the plan
- Safety and Health Policy
- Work rules and safe work practices
- Systems for ensuring that employees comply with safe work practices

- Employee communications protocols
- Identification and evaluation of workplace hazards
- Methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures in a timely manner based on the severity of the hazards
- Specific safety procedures (e.g. fall protection, lockout/tagout, respiratory protection)
- Training and instruction

### ***Fire Protection and Prevention Plan***

This plan implements the requirements of the Cal-OSHA occupational health and safety program, as specified in Title 8 CCR Section 1920, and includes:

- General requirements
- Housekeeping requirements
- Employee alarm/communication system
- Portable fire extinguisher placement and operation
- Fixed fire fighting equipment placement and operation
- Fire control methods and techniques
- Hot work (welding, torches, cutting) safety procedures
- Flammable and combustible liquid storage methods
- Flammable and combustible liquids use procedures
- Techniques for dispensing and disposing of liquids
- Methods for servicing and refueling vehicles
- Fire prevention training programs and requirements

The permanent facility fire suppression system will be placed in service as early as practicable during construction. These fire suppression systems are described in Section 2.3.2.1; the fuel handling system is described in Section 2.2.6. Project staff will pay special attention to operations involving open flames, such as welding, and the use of flammable liquids and gases. Project personnel will maintain a fire watch during hazardous or hot work operations, using the appropriate class of extinguishers or other equipment. Site personnel will not be expected to fight fires past the incipient stage.

The onsite construction fire suppression system will include 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 Uniform Fire code Appendices 3A and 3B. The contractor's safety representative will conduct periodic fire prevention inspections. The safety representative will inspect fire extinguishers monthly and replace them 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. Flammable materials will be stored in designated and approved storage areas and storage containers with adequate fire prevention systems available in these areas.

The City of Hayward Fire Department will provide offsite fire suppression support. The closest fire station to the RCEC is City of Hayward Fire Station No. 6, approximately 2 miles away, at 1401 W. Winton Ave, Hayward, CA 94545 (phone (510-293-8616)). The City of Hayward Fire Department would be able to respond to any emergencies at the RCEC very rapidly from this location. The contractor's safety representative will contact the City of Hayward Fire Department prior to construction

to brief the department on planned construction activities and to cooperatively review the project work plans.

### ***Personal Protective Equipment Program***

This RCEC project's program to provide personal protective equipment to construction workers implements the requirements of Cal-OSHA Title 8 CCR Section 1514-1522 and 3401-3411 and includes:

- Head protection equipment (hard hats, etc.)
- Eye and face protection equipment (such as safety glasses)
- Body protection equipment
- Ear plugs
- Hand protection equipment (gloves)
- Foot protection equipment (steel-toed boots)
- Sanitation equipment (hand washing, etc.)
- Safety harnesses and lifelines
- Electric shock protection equipment
- Medical services and first aid equipment
- Respiratory protection equipment (respirators, supplied air equipment)

### ***Construction Written Safety Program***

Calpine/Bechtel will make written safety program procedures available to all workers and regulatory agencies during the life of the project. These written procedures include, but are not limited to:

#### **Organization, Communication, and Record Keeping Procedures:**

- Employer and employee rights and responsibilities under the health and safety programs
- Hazard communication program including hazardous waste control, hazardous material handling, and California Proposition 65
- Recordkeeping procedures
- Injury and accident reporting and recording procedures
- "Toolbox/tailgate" safety meetings
- Supervisor safety and health orientations
- Communications and information programs
- First aid and medical services
- Smoking policy

#### **Work Safety and Emergency Response Programs and Procedures:**

- Confined space entry and rescue procedures
- Electrical equipment safety procedures
- Lockout/tagout procedures
- Hearing conservation and noise control programs
- Bloodborne pathogens program
- Emergency action plan, including evacuation procedure
- Fire prevention and protection plan
- Medical record access procedures

- Housekeeping, material handling and storage procedures
- Welding and cutting procedures
- Crane and hoist procedures
- Project safe work procedures and standard operating procedures
- Subcontractor safety programs
- Security programs
- Excavation and trenching program
- Fall protection
- Inspections
- Sign, tags, and barricades

**Equipment and Equipment Use:**

- Personal protective equipment
- Respiratory protection program including fit-testing procedures.
- Work clothing
- Ventilation requirements
- Ergonomic precautions
- Compressed gas and air handling procedures
- Equipment inspection programs

**8.16.2.2 Operation Health and Safety Program**

After construction, the construction-phase safety and health program will transition into a program that is oriented towards routine project operation. Key health and safety programs for project operation are as follows, outlined below:

- Injury and Illness Prevention Program
- Fire Protection and Prevention Plan
- Emergency Action Plan
- PPE Program

***Injury and Illness Prevention Program***

The Injury and Illness Prevention Plan implements the requirements of the Cal-OSHA program as specified in Title 8 CCR Section 3203 for project operations and includes:

- Responsibility and authority for implementing the plan
- Safety and health Policy
- Work rules and safe work practices
- Systems for ensuring that employee comply with safe work practices
- Employee communication procedures
- Identification and evaluation of workplace hazards
- Methods and/or procedures for correcting unsafe or unhealthy conditions, work practices and work procedures based on the severity of the hazards
- Specific safety procedures (e.g. fall protection, lockout/tagout, respiratory protection)

- Training and instruction plans

### ***Fire Protection and Prevention Plan***

The Fire Protection and Prevention Plan implements the requirements of the Cal-OSHA program, as specified in Title 8 CCR Section 3221, and includes:

- General requirements
- Housekeeping requirements
- Employee alarm/communication system
- Portable fire extinguisher placement and operation
- Fixed fire fighting equipment placement and operation
- Fire control methods and techniques
- Hot work (welding, torches, cutting) safety procedures
- Flammable and combustible liquid storage methods
- Flammable and combustible liquids use procedures
- Techniques for dispensing and disposing of liquids
- Methods for servicing and refueling vehicles
- Fire prevention training programs and requirements

The onsite fire suppression system for project operation will include both portable and fixed fire-fighting equipment. Portable fire fighting equipment will consist of fire extinguishers and hose lines in conformance with Cal-OSHA and the NFPA. The contractor's safety representative will conduct periodic fire prevention inspections. The safety representative will inspect fire extinguishers monthly and replace them immediately if defective or in need of recharge. All fire-fighting equipment will be located strategically to allow for unobstructed access to the equipment and will be conspicuously marked. Flammable materials will be stored in designated and approved storage areas and storage containers with adequate fire prevention systems available in these areas.

Fixed fire suppression systems will include:

- FM 200 fire protection systems, which protect the combustion turbine, generator, and its accessory equipment compartments from fire. The system will have fire detection sensors in all appropriate compartments that warrant such protection.
- Deluge spray systems which provide fire protection to the generator transformers (outdoor design), steam turbine oil system, auxiliary power transformers, and cooling tower in the event of fire.
- Fire hydrants and hose stations that will supplement the plant fire protection system.

The City of Hayward Fire Department will provide offsite fire suppression support. The closest fire station to the RCEC is City of Hayward Fire Station No. 6, approximately 2 miles away, at 1401 W. Winton Ave, Hayward, CA 94545. The City of Hayward Fire Department would be able to respond to any emergencies at the RCEC very rapidly from this location. The contractor's safety representative will contact the City of Hayward Fire Department prior to construction to brief the department on planned construction activities and to cooperatively review the project work plans.

### ***Personal Protective Equipment Program***

This RCEC project's program to provide personal protective equipment to construction workers implements the requirements of Cal-OSHA Title 8 CCR Section 3401-3411 and includes:

- Head protection equipment (hard hats, etc.)
- Eye and face protection equipment (such as safety glasses)
- Body protection equipment
- Ear plugs
- Hand protection equipment (gloves)
- Foot protection equipment (steel-toed boots)
- Sanitation equipment (hand washing, etc.)
- Safety harnesses and lifelines
- Electric shock protection equipment
- Medical services and first aid equipment
- Respiratory protection equipment (respirators, supplied air equipment)

### ***Emergency Action Plan***

The Emergency Action Plan implements the requirements of Cal-OSHA Title 8 CCR Section 3220 and includes:

#### **Organization of Emergency Response:**

- Incident reaction responsibilities
- Incident Command System
- Position description assignments
- Response and notification plan (points of contact)
- Supervisor/Emergency Coordinator role
- Health and Safety Manager role

#### **Communications:**

- Documentation and recordkeeping procedures
- Public relations (news media, etc.) procedures
- Emergency notification list
- Emergency telephone number list
- Emergency equipment locations
- Plant plans and diagrams
- Accident reporting and investigation procedures
- Hazard communication procedures
- Spill containment and reporting procedures
- Releases into the environment and reporting

#### **Hazard Characteristics:**

- Hazardous waste or chemical spill
- Fire

- Earthquake
- Bomb threat
- Pressure vessel release

**Emergency Response Procedures:**

- Response procedures
- Site security measures
- Evacuation routes, assembly areas, and procedures
- Emergency plant shutdown procedures
- Fire response procedures
- Emergency medical treatment and first aid
- Reference procedures
- Decontamination procedures
- Evacuation plan
- Systems and shut down procedures
- Lockout/Tagout procedures
- Accidents involving serious injury and/or death

**Standards and Requirements:**

- Respiratory protection requirements
- Personal protective equipment requirements
- Sanitation requirements
- Inspection requirements

**8.16.3 Safety Training Programs**

For both construction and operation, Calpine/Bechtel will implement comprehensive training programs to ensure that employees recognize and understand how to protect themselves from hazards. Table 8.16-3 (on previous page) provides an overview of training programs that will be provided to personnel.

**8.16.4 Laws, Ordinances, Regulations and Standards (LORS)**

The construction and operation of the RCEC will be conducted in accordance with all LORS. Tables 8.16-5 through 8.16-8 provide an overview of those LORS relating to worker health and safety.

**Table 8.16-4. Construction and operation training program.**

<b>Training Course</b>	<b>Target Employees</b>
Injury and Illness Prevention Plan	All
Emergency Action Plan	All
PPE Program	All
Heavy Equipment Safety Program	Employees working on, near, or with heavy equipment
Forklift Operator Training	Employees working on, near, or with forklifts
Trenching and Excavation Safety Program Use of Excavation Permits per Cal-OSHA	Employees involved with the conduct of trenching or excavation
100% Fall Protection Program	Employees required to use fall protection
Scaffolding Safety Program	Employees required to erect or use scaffolding
Hoisting and Rigging Safety Program	Employees responsible for the oversight or conduct of 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 gasses
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
Hazardous Substances Program (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 around hazardous materials or waste

**Table 8.16-5. Federal LORS.**

<b>Law, Ordinance, Regulation, or Standard</b>	<b>Applicability</b>
Title 29 Code of Federal Regulations (CFR) Part 1910 <sup>1/</sup>	Minimum occupational safety and health standards for general industry in the United States
Title 29 CFR Part 1926 <sup>1/</sup>	Minimum occupational safety and health standards for the United States construction industry

<sup>1/</sup> Primary laws and regulations governing worker health and safety in California are provided in Table 8.16-6. These regulations are for reference and apply as referenced by California occupational safety and health regulations. Where a particular situation is not addressed by those regulations, the CFR will be consulted for guidance.

**Table 8.16-6. State LORS**

<b>Law, Ordinance, Regulation, or Standard</b>	<b>Applicability</b>
California Occupational Safety and Health Act, 1970	The Act establishes minimum safety and health standards for construction and general industry operations in the State of California
8 California Code of Regulations (CCR) 339	Requires list of hazardous chemicals relating to the Hazardous Substance Information and Training Act
8 CCR 450	Addresses the hazards associated with pressurized vessels
8 CCR 750	Addresses hazards associated with high pressure steam
8 CCR 1509	Addresses the requirements for Construction, Accident, and Prevention plans
8 CCR 1509 et seq. and 1684 et seq.	Addresses construction hazards, including head, hand, foot injuries, noise, and electrical shock
8 CCR 1528 et seq. and 3380 et seq.	Requirements for personal protective equipment
8 CCR 1597 et seq. and 1590 et seq.	Requirements addressing the hazards associated with traffic accidents and earth moving
8 CCR 1604 et seq.	Requirements for construction hoist equipment
8 CCR 1620 et seq. and 1723 et seq.	Addresses miscellaneous hazards
8 CCR 1709 et seq.	Requirements for steel reinforcing, concrete pouring, and structural steel erection operations
8 CCR 1920 et seq.	Requirements for fire protection systems
8 CCR 2300 et seq. and 2320 et seq.	Requirements for addressing low voltage electrical hazards
8 CCR 2395 et seq.	Addresses electrical installation requirements
8 CCR 2700 et seq.	Addresses high voltage electrical hazards
8 CCR 3200 et seq. and 5139 et seq.	Requirements for the control of hazardous substances
8 CCR 3203 et seq.	Requirements for operational accident prevention programs
8 CCR 3270 et seq. and 3209 et seq.	Requirements for evacuation plans and procedures
8 CCR 3301 et seq.	Requirements for addressing miscellaneous hazards including hot pipes, hot surfaces, compressed air systems, relief valves, enclosed areas containing flammable or hazardous materials, rotation equipment, pipelines, and vehicle loading dock operations.
8 CCR 3360 et seq.	Addresses requirements for sanitary conditions

**Table 8.16-6. (continued)**

<b>Law, Ordinance, Regulation, or Standard</b>	<b>Applicability</b>
8 CCR 3511 et seq. and 3555 et seq.	Requirements for addressing hazards associated with stationary engines, compressors, portable, pneumatic, and electrically powered tools
8 CCR 3649 et seq. and 3700 et seq.	Requirements for addressing hazards associated with field vehicles
8 CCR 3940 et seq.	Requirements for addressing hazards associated with power transmission, compressed air, and gas equipment
8 CCR 5109 et seq.	Requirements address construction accident and prevention programs
8 CCR 5139 et seq.	Requirements for addressing hazards associated with welding, sandblasting, grinding and spray-coating
8 CCR 5150 et seq.	Requirements for confined space entry
8 CCR 5160 et seq.	Requirements for addressing hot, flammable, poisonous, corrosive, and irritant substances
8 CCR 5192 et seq.	Requirements for conducting emergency response operations
8 CCR 5194 et seq.	Requirements for employee exposure to dusts, fumes, mists, vapors, and gases
8 CCR 5405 et seq., 5426 et seq., 5465 et seq., 5500 et seq., 5521 et seq., 5545 et seq., 5554 et seq., 5565 et seq., 5583 et seq. and 5606 et seq.	Requirements for flammable liquids, gases and vapors
8 CCR 5583 et seq.	Requirements for the design, construction and installation of venting, dikes, valves, and supports
8 CCR 6150 et seq., 6151 et seq., 6165 et seq., 6170 et seq. And 6175 et seq.	Provides fire protection requirements
24 CCR 3 et seq.	Incorporates current addition of Uniform Building Code
8 CCR, Part 6	Provides health and safety requirements for working with tanks and boilers
La Follette Bill (Health and Safety Code Section 25500 et seq.)	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
Health and Safety Code Sections 25500 through 25541	Requires the preparation of a Hazardous Material Business Plan which details emergency response plans for a hazardous materials emergency at the facility

**Table 8.16-7. Local LORS.**

<b>Law, Ordinance, Regulation, or Standard</b>	<b>Applicability</b>
Required by the local fire department:	
Specific hazardous material handling requirements	Provides response agencies with necessary information to address emergencies
Emergency Response Plan	Allows response agency to integrate the RCEC emergency response activities into any response actions
Business Plan	Provides response agency with overview of the RCEC purpose and operations
Risk Management Plan	Provides response agency with a detailed review of risks and hazards located at the RCEC and the mitigation implemented to control the risks or hazards

**Table 8.16-8. Applicable national consensus standards.**

<b>LORS</b>	<b>Applicability</b>
Uniform Fire Code, Article 80	Addresses 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
National Fire Protection Association (NFPA) 10, Standard for Portable Fire Extinguishers	Requirements for the selection, placement, inspection, maintenance and employee training for portable fire extinguishers
NFPA 11, Standard for Low Expansion Foam and Combined Agent Systems	Requirements for installation and use of low expansion foam and combined agent systems
NFPA 11A, Standard for Medium and High Expansion Foam Systems	Requirements for the installation and use of medium and high expansion foam systems
NFPA 12, Standard on Carbon Dioxide Extinguishing Systems	Requirements for installation and use of carbon dioxide extinguishing systems
NFPA 13, Standard for Installation of Sprinkler Systems	Guidelines for the selection and installation of fire sprinkler systems
NFPA 13A, Recommended Practice for the Inspection, Testing and Maintenance of Sprinkler Systems	Guidance for the inspection, testing, and maintenance of sprinkler systems
NFPA 14, Standard for the Installation of Standpipe and Hose Systems	Guidelines for the selection and installation of standpipe and hose systems
NFPA 15, Standard for Water Spray Fixed Systems	Guidelines for the selection and installation of water spray fixed systems
NFPA 17, Standard for Dry Chemical Extinguishing Systems	Guidance for the selection and use of dry chemical extinguishing systems
NFPA 20, Standard for the Installation of Centrifugal Fire Pumps	Guidance for the selection and installation of centrifugal fire pumps
NFPA 22, Standard for Water Tanks for Private Fire Protection	Requirements for water tanks for private fire protection

**Table 8.16-8. (Continued)**

<b>LORS</b>	<b>Applicability</b>
NFPA 24, Standard for the Installation of Private Fire Service Mains and their Appurtenances	Requirements for private fire service mains and their appurtenances
NFPA 26, Recommended Practice for the Supervision of Valves Controlling Water Supplies	Supervision guidance for valves controlling water supplies
NFPA 30, Flammable and Combustible Liquid Code	Requirements for the storage and use of flammable and combustible liquids
NFPA 37, Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines	Fire protection requirements for the installation and use of combustion engines and gas turbines
NFPA 50A, Standard for Gaseous Hydrogen Systems at Consumer Sites	Fire protection requirements for hydrogen systems
NFPA 54, National Fuel Gas Code	Fire protection requirements for the use of fuel gases
NFPA 59A, Standard for the Storage and Handling of Liquefied Petroleum Gases	Requirements for the storage and handling of liquefied petroleum gases
NFPA 68, Guide for Explosion Venting	Guidance in the design of facilities for explosion venting
NFPA 70, National Electric Code	Guidance on the safe selection and design, installation, maintenance and construction of electrical systems
NFPA 70B, Recommended Practice for Electrical Equipment Maintenance	Guidance on electrical equipment maintenance
NFPA 70E, Standard for Electrical Safety Requirements for Employee Workplaces	Employee safety requirements for working with electrical equipment
NFPA 71, Standard for the Installation, Maintenance, and Use of Central Station Signaling Systems	Requirements for the installation, maintenance, and use of central station signaling systems
NFPA 72A, Standard for the Installation, Maintenance and Use of Local Protective Signaling Systems for Guard's Tour, Fire Alarm and Supervisory Service	Requirements for the installation, maintenance and use of local protective signaling systems
NFPA 72E, Standard on Automatic Fire Detection	Requirements for automatic fire detection
NFPA 72F, Standard for the Installation, Maintenance and Use of Emergency Voice/Alarm of Communication Systems	Requirements for the installation, maintenance, and use of emergency and alarm communications systems
NFPA 72H, Guide for Testing Procedures for Local, Auxiliary, Remote Station and Proprietary Protective Signaling Systems	Testing procedures for the types signaling systems anticipated to be used at the facility
NFPA 75, Standard for the Protection of Electronic Computer/Data Processing Equipment	Requirements for fire protection systems used to protect computer systems
NFPA 78, Lightning Protection Code	Lightning protection requirements
NFPA 80, Standard for Fire Doors and Windows	Requirements for fire doors and windows

**Table 8.16-8. (Continued)**

<b>LORS</b>	<b>Applicability</b>
NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems	Requirements for the installation of air conditioning and ventilating systems
NFPA 101, Code for Safety to Life from Fire in Buildings and Structures	Requirements for the design of means of exiting the facility
NFPA 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants	Guidelines for the testing and marking of fire hydrants
NFPA 850, Recommended Practice for Fire Protection for Fossil Fuel Steam Electric Generating Plants	Requirements for fire protection in fossil fuel steam electric generating plants
NFPA 1961, Standard for Fire Hose	Specifications for fire hoses
NFPA 1962, Standard for the Care, Maintenance, and Use of Fire Hose Including Connections and Nozzles	Requirements for the care, maintenance, and use of fire hose
NFPA 1963, Standard for Screw Threads and Gaskets for Fire Hose Connections	Specifications for fire hose connections
American National Standards Institute/American Society for Mechanical Engineers (ANSI/ASME), Boiler and Pressure Vessel Code	Specifications and requirements for pressure vessels
ANSI, B31.2, Fuel Gas Piping	Specifications and requirements for fuel gas piping

### **8.16.5 Permit Requirements and Permit Schedule**

Table 8.16-9 provides a list of applicable permits related to the protection of worker health and safety for RCEC certification. This table lists the activities covered for each permit and application requirements to obtain the permit. Permits listed in Table 8.16-9 are supplied on an as needed basis by the nearest Cal-OSHA office. An annual excavation permit or single event permit for excavations requires submittal of health and safety program and procedures to Cal-OSHA for review and issuance of the permit. The permit application should be planned at least two weeks before the first scheduled excavation. Subsequent excavations should be planned to provide at least five days notice to Cal-OSHA prior to excavation activities. Permits for scaffolds and cranes should be scheduled at least five days before planned activity. Permits for the operations of unfired or fired pressure vessels should be scheduled with the Cal-OSHA Pressure Vessel Unit at the time it is anticipated to place the vessel in operation.

**Table 8.16-9. Health and safety permits.**

<b>Permit</b>	<b>Issuing Agency</b>	<b>Application Requirements</b>	<b>Applicability</b>
Trenching and Excavation Permit	Cal-OSHA district or field office	Required for personnel entry into trenches and excavations 5 feet or more in depth.	Submit completed permit application to any Cal-OSHA office. Review of written health and safety program or safe work procedures may be required. Submit at least 5 days prior to scheduled excavation.
Construction Demolition	Cal-OSHA district or field office.	Construction or demolition of buildings, structures or falsework 3 -feet or higher.	Submit completed permit application to any Cal-OSHA office. Review of written health and safety program or safe work procedures may be required.
Scaffolding	Cal-OSHA district or field office	Scaffolding 36 feet or higher, erection or dismantling	Submit completed permit application to any Cal-OSHA office. Review of written health and safety program or safe work procedures may be required.
Erection of a fixed tower crane	Cal-OSHA district or field office	Erection, climbing and dismantling of fixed tower cranes.	Submit completed permit application to any Cal-OSHA office. Review of written health and safety program or safe work procedures may be required.
Pressure vessel, unfired or fired	Cal-OSHA Pressure Vessel Unit	Pressure vessels covered by the Unfired and the Fired Pressure Vessel Safety Orders require a permit to operate.	Arrange for application and inspection with the nearest Cal-OSHA Pressure Vessel Unit.

### 8.16.6 Agency Contacts

Agency contacts regarding worker health and safety at the RCEC are shown in Table 8.16-10.

**Table 8.16-10. Agency contacts.**

<b>Agency</b>	<b>Contact</b>	<b>Title</b>	<b>Telephone and Address</b>
Cal-OSHA District Office Consultation Service	Jay Sekhon	Area Manager	(510) 622-2891 1515 Clay St., Suite 1103 Oakland, CA 94612
Pressure Vessel Unit District Office, Division of Occupational Safety and Health	David Ethier	Sr. Pressure Vessel Engineer	(510) 622-3066 fax: (510) 622-3077 Elihu Harris State Building 1515 Clay Street, Suite 901 Oakland, CA 94621
City of Hayward Fire Dept	Larry Arfsten	Fire Chief	(510) 583-4945 777 B Street Hayward, CA 94541