9 HAZARDS AND HAZARDOUS MATERIALS

9.1 INTRODUCTION

This chapter discusses potential hazards to the environment, public, and worker health and safety associated with the construction and operation of Pacific Gas and Electric Company's (PGandE) Delta Distribution Planning Area Capacity Increase Substation Project (project), including potential fire hazards and releases or encounters with existing hazardous substances. With implementation of the mitigation activities listed in Section 9.5 Mitigation Measures, potential impacts will be reduced to less than significant.

Potential impacts associated with corona and induced current effects are discussed separately in Chapter 16: Corona and Induced Current Effects.

9.2 METHODOLOGY

An environmental database report was obtained from Environmental Data Resources on December 8, 2004. The report identified sites that are registered on one or more of the environmental oversight agency database lists provided in Attachment 9-A.

9.3 EXISTING CONDITIONS

9.3.1 Regulatory Background

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) regulates hazardous waste, oversees the cleanup of existing contamination, and looks for ways to reduce the hazardous waste produced in California. The DTSC regulates hazardous waste in California under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code.

The Central Valley Regional Water Quality Control Board (RWQCB) is responsible for protecting the beneficial uses of water resources in the project vicinity. The RWQCB's Water Quality Control Plan (Basin Plan) sets forth implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. The Basin Plan establishes both numerical and narrative objectives and standards for water quality specific to the Central Valley aimed at protecting aquatic resources. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan.

The Contra Costa Hazardous Materials Program is the Certified Unified Program Agency (CUPA) for Contra Costa County. It regulates the following activities in the project vicinity:

- Hazardous Waste Release Incident Response and Inventory
- California Accidental Release (Business Plans)

- Fuel Storage Tanks
- Storm Water Conveyance System Contamination

9.3.2 Hazardous Materials Sites

The environmental database report identified sites with potential soil and/or groundwater contamination that have been registered on one or more environmental oversight agency database list. No known or suspected hazardous materials sites were identified in the vicinity of the proposed project site.

9.4 IMPACTS

9.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act Guidelines. Project impacts are considered significant if they:

- create a hazard to public health or the environment through the routine transport, use, or disposal of hazardous materials;

- create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

- emit hazardous emissions or handle hazardous materials within 0.25 mile of a school;

- are located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a hazard to the public or the environment;

- are located within 2 miles of a public or private airport and would result in a safety hazard for people residing or working in the project area;

- impair implementation of or physically interfere with an adopted emergency response or evacuation plan; or

- expose people or structures to a risk of loss, injury, or death involving wild land fires.

9.4.2 Construction

9.4.2.1 Hazardous Materials Sites

No known or suspected hazardous materials sites were identified in the project vicinity that could create a significant hazard to the public or the environment. Therefore, the project will have no impact.

9.4.2.2 Hazardous Materials Releases

Project construction will require the use of motorized heavy equipment, including trucks, cranes, backhoes, and air compressors. This equipment requires fuel and liquid replenishment in the form of gasoline, diesel, oil, hydraulic fluid, antifreeze, transmission fluid, lubricating grease, and other fluids. Surface water and/or groundwater quality could be impacted by an accidental release of one or more of these materials from a vehicle or motorized piece of equipment. Additionally, a release of liquid concrete during foundation construction activities could wash into nearby waterways or infiltrate the soil, in which case it would constitute a hazardous waste. With implementation of the measures identified in Section 9.5 Mitigation Measures, potential impacts from hazardous materials use will be less than significant.

The project is not located within 0.25 mile of any existing or proposed schools or within 2 miles of any airports or private airstrips. There are no emergency response plan staging areas or exit routes in the project vicinity. Therefore, there will be no impact.

9.4.2.3 Fire Hazards

Portions of the existing project will be constructed in open areas susceptible to wild land fires. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. Vehicles and equipment will primarily use existing roads to access the site. Additionally, the access roads will be cleared of brush to reduce the fire potential. Project personnel will be directed to park away from dry vegetation and will be required to carry water and shovels or fire extinguishers in times of high fire hazard. PGandE will also prohibit trash burning and restrict smoking to cleared areas. By following these preventative measures, the potential for fire will be reduced to less than significant.

9.4.2.4 Lightening Hazards

Concern is sometimes expressed that transmission lines are unsafe in electrical storms. PGandE's transmission lines are designed and constructed with grounding devices. In the event of a lightning strike on a transmission line, this safety feature ensures that the strike is discharged to appropriate ground.

9.4.3 Operations and Maintenance

The following hazards have the potential to be present at the substation on a routine basis.

9.4.3.1 Hazardous Materials Releases

9.4.3.1.1 Mineral Oil

Electrical transformers and other substation equipment contain non-conducting mineral oil (highly refined hydrocarbon-based oil), which is used for insulation or cooling. When oil-filled equipment is taken out of service, the oil must be disposed of as hazardous waste. Older insulating oils frequently contained polychlorinated biphenyls (PCBs), which are defined as hazardous materials. The insulating oil used at the substation will not contain PCBs, is not a

cancer-causing chemical, and is non-toxic. The only hazard this oil poses is associated with a possible release to a waterway.

In preparation for the unlikely event that a piece of oil-filled electrical equipment would burst or leak, the site will be graded to direct surface runoff to a pond that meets federal Spill Prevention Countermeasure and Control (SPCC) Guidelines (40 Code of Federal Regulations, Part 112). A berm will be built around all oil-filled equipment and a buried drainpipe or sloped asphalt pavement will direct surface runoff, along with any oil, to the SPCC pond. The pond will be concrete lined and designed to contain 100 percent of the largest volume of oil in any single piece of equipment, plus 10 percent of extra space to allow for rainwater. Any released oil will be contained until it can be collected and transported to an approved disposal site. The SPCC pond will have a manually operated bypass valve to allow for stormwater to be drained after the pond contents are inspected. Per the U.S. Environmental Protection Agency requirements, PGandE will inspect the equipment and spill containment area on a monthly basis and after heavy rains to ensure that oil releases are contained and disposed of properly. The mineral oil is contained, so it will not impact site workers, the public, or the environment. With implementation of the SPCC Plan, potential impacts from an oil release will be less than significant.

9.4.3.1.2 Batteries

The substation will be equipped with lead-acid batteries to provide backup power for monitoring, alarm, protective relaying, instrumentation and control, and emergency lighting during power outages. Containment will be constructed under and around the battery racks to prevent the release of battery acid in the event of a leak or rupture. The SPCC Plan will address containment from a potential release from batteries. Therefore, potential impacts from the release of battery acid will be less than significant.

9.4.3.1.3 Sulfur Hexafluoride Gas

Sulfur hexafluoride gas (SF_6) is used as an insulator and arc suppresser in circuit breakers. Under normal conditions, it is completely contained in the equipment. Although SF_6 is relatively inert and non-toxic, it is considered a greenhouse gas. SF_6 is released only if there is a leak in one of the joints in the circuit breaker tank, or if there is a crack in the breaker. In either case, the loss of gas pressure/density will cause an alarm to be sent directly to the switching center. This alarm will enable operators to minimize loss of SF_6, and thus potential impacts will be less than significant.

9.4.3.1.4 Nitrogen Gas

Cylinders of compressed nitrogen gas will be used to maintain a slight nitrogen pressure on oil-filled electrical equipment. This pressure serves to keep out moisture, which can damage the equipment. The gas is inert and non-toxic. The only potential hazard posed by the nitrogen is associated with the high pressure of the gas in the cylinders. Rapid loss of high-pressure nitrogen gas can only occur if a cylinder valve is accidentally broken off. The cylinders in use will be properly restrained to prevent accidental loss of cylinder valves, and personnel who change

cylinders will move full cylinders only when the cylinders have protective caps over the valve. Therefore, potential impacts from high-pressure nitrogen gas will be less than significant.

9.4.3.1.5 Electric Shock

The new substation could pose a hazard of electric shock to site trespassers. This hazard will be present at the substation equipment, and will not extend off-site to the general public. To minimize potential exposure to electric shock hazards, an eight-foot-tall wall will restrict site access. Warning signs will be posted to alert persons of potential electrical hazards. The powerlines will be designed in accordance with the Commission General Order 95 Guidelines for safe ground clearances established to protect the public from electric shock. These precautions will minimize the risk of electric shock. Therefore, potential impacts will be less than significant.

9.4.3.2 Fire Hazards

Since substation operation involves the transformation of electricity, operation will present a potential fire hazard. Incidents such as downed powerlines or equipment failure could generate sparks and start a fire. However, the risk of fire will be extremely low because such incidents are very rare and PGandE routinely installs high-speed relay equipment that senses a broken-line condition and actuates circuit breakers to de-energize the line in milliseconds. Additionally, the area within the walled substation will be maintained to be free of all vegetation and combustible materials. The substation will not be manned, and will not be constructed of combustible materials. Therefore, potential impacts from exposure of people or structures to wild land fires will be less than significant.

9.5 MITIGATION MEASURES

9.5.1 Construction

A Hazardous Substance Control and Emergency Response Plan will be prepared for the project. It will prescribe hazardous material handling procedures to reduce the potential for a spill during construction or exposure of the workers or public to a hazardous material. The plan will provide a discussion of appropriate response actions in the event that hazardous materials are released or encountered during field activities. The plan will be submitted to Contra Costa County's Certified Unified Program Agency (CUPA), or another appropriate oversight agency, for approval prior to initiating field activities.

Emergency-spill supplies and equipment will be kept adjacent to all areas of work and in staging areas, and will be clearly marked. Oil-absorbent materials, tarps, and storage drums will be used to contain and control any minor releases. Detailed information for responding to accidental spills, and for handling any resulting hazardous materials, will be provided in the project's Hazardous Substances Control and Emergency Response Plan.

An environmental training program will be established to communicate environmental concerns and appropriate work practices to all construction field personnel. The training program will emphasize site-specific physical conditions to improve hazard prevention, and will include a

review of the Hazardous Substances Control and Emergency Response Plan and the Storm Water Pollution Prevention Plan.

9.5.2 Operations and Maintenance

Since operation and maintenance of the substation will not result in significant impacts, no mitigation measures are proposed.

9.6 REFERENCES

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