

# Chapter 14—Hazards and Hazardous Materials

---

## 14.1 Introduction

This chapter discusses potential hazards to public health and safety associated with construction and operation of the project, including potential fire hazards and hazardous materials impacts. The project will not result in significant public health and safety impacts.

### 14.1.1 Methodology

Information was obtained from fire prevention and hazardous materials representatives from Certified Unified Public Agencies (CUPAs) with jurisdiction in the project area, including the Contra Costa County Health Services Department (for the unincorporated regions of Contra Costa County), the Alameda County Environmental Health Department (for the unincorporated regions of Alameda County), and the Pleasanton-Livermore Fire Department (for the City of Pleasanton).

## 14.2 Existing Conditions

### 14.2.1 Hazardous Materials

During construction and operation of the project, hazardous materials, as defined under various federal and state environmental laws, will be used and stored. The following hazardous materials are typically found in substations.

#### Mineral Oil

Mineral oil is a highly refined hydrocarbon-based oil used as an insulation medium and coolant in transformers and other electrical equipment. New transformers do not contain polychlorinated biphenyls (PCBs). The mineral oil used in electric equipment is not a cancer-causing chemical. Existing electric transformers at the Vineyard Substation contain approximately 29,550 gallons of mineral oil for transformer coolant. The proposed Dublin and North Livermore Substations will contain mineral oil for transformer coolant as shown in Table 14-1.

TABLE 14-1  
Volumes of Transformer Coolant in Project Substations

Substation	Volume of Transformer Coolant (gallons)
<b>Proposed Substations</b>	
Dublin	16,500
North Livermore	16,500
<b>Modified Substation</b>	
Vineyard	33,850

## Substation Batteries

The substations would have a set of storage batteries and battery charging equipment to provide power for control, protection, instrumentation, alarm, communication, and emergency lighting. The battery would have 96 cells and would be rated 125 volts DC nominal. The cells would be nickel-cadmium type and mounted on a three-tier rack assembly. The electrolyte used in the battery would be potassium hydroxide (KOH). The batteries and chargers would be located in a separate compartment provided in the switchgear. This compartment will have a separate access door and will be furnished with louvered, filtered vents.

## Sulfur Hexafluoride Gas

Sulfur hexafluoride gas ( $\text{SF}_6$ ) is used as an insulator and an arc suppressor in circuit breakers. These breakers operate much like the breakers in a home, only at much higher voltages.  $\text{SF}_6$  gas is inert and non-toxic. The gas is completely contained in the equipment and not released under normal conditions.

$\text{SF}_6$  gas is used only in 60 kV or higher rated circuit breakers. It 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 would cause an alarm to be sent directly to the switching center.

# 14.3 Potential Impacts

## 14.3.1 Significance Criteria

According to Appendix G of the revised CEQA Guidelines, the project would have a significant impact if it created a hazard to public health or the environment through, among other things, the transport, use, or disposal of hazardous materials.

## 14.3.2 Construction Impacts

### Fire Hazard

**Impact 14.1.** Welding during construction of towers or support structures could potentially result in the combustion of native materials located close to the welding site. However, before welding activities commence, it is PG&E's standard procedure to select a welding site that is void of native combustible material and/or clear the site of such material to minimize the fire hazard. All welding on supporting structures would be performed during fabrication of the poles at the fabricator's yard. Prior to performing welding at the substations, PG&E or its contractor would obtain a welding permit. In accordance with the most recent edition of the Uniform Fire Code Section 1109.5, and as part of standard construction practice, PG&E will inform its construction and maintenance workforce that lighted matches, cigarettes, cigars, or other burning objects must not be discarded in such a manner that could cause ignition of other combustible material. The potential impacts of igniting fires would be less than significant, and therefore, mitigation is not required.

## Hazardous Materials

**Impact 14.2.** During construction, hazardous materials will be handled in accordance with best management practices prescribed in the project's Stormwater Pollution Prevention Plan (SWPPP). Preparation of a SWPPP is required by the Regional Water Quality Control Board in compliance with the National Pollutant Discharge Elimination System under the federal Clean Water Act. Implementation of these standard measures as part of the project would reduce potential impacts to a less than significant level, and therefore, mitigation is not required.

### 14.3.3 Operation

#### Fire Hazard

**Impact 14.3.** Transmission lines may pose a fire hazard when a conducting object, such as a tree limb, comes in close proximity to a line or when a live-phase conductor falls to the ground. However, PG&E clears potential proximate objects, such as trees, during construction and maintains clearance during the life of the transmission line to reduce the fire hazard potential.

Conductors can be a fire hazard if they fall to the ground and create an electrical arc that ignites combustible material. During mechanical and structural design, selection of materials, and construction of transmission lines, PG&E takes into account normal and unusual structural loads such as ice and wind that can cause the conductors to break. PG&E installs high-speed relay equipment that senses a broken line condition and actuates circuit breakers to de-energize the line in about one-tenth of a second. This procedure has proven to be a reliable safety measure and reduces the risk of fire to a less than significant level.

The potential for fires at the Dublin, North Livermore, or Vineyard Substations is low because a minimum distance of 25 feet between transformers and circuit breakers would be maintained. A minimum distance of 50 feet would be maintained between oil-filled equipment. Potential impacts from fire hazards would be less than significant, and therefore, mitigation is not required.

#### Hazardous Materials and Wastes

**Impact 14.4.** Although spills caused by transformer failure are rare in PG&E's system, the substations will meet federal Spill Prevention, Control, and Countermeasures (SPCC) requirements, as outlined in Title 40 of the Code of Federal Regulations, Part 112. Any spilled oil would be properly characterized and collected and transported to an approved disposal site in accordance with applicable requirements. Pursuant to U.S. EPA requirements, PG&E would inspect the equipment and any required spill containment facilities on a monthly basis. With implementation of these standard measures, impacts would be reduced to a less than significant level (also see Chapter 8, Impact 8.6).

Before operation of the Proposed Dublin and North Livermore Substations, PG&E will prepare and submit Hazardous Materials Business Plans in accordance with Chapter 6.95 of the California Health and Safety Code and Title 22, California Code of Regulations. The plans and forms will be submitted to the appropriate CUPA. The substations will be operated in compliance with all applicable federal, state, and local regulations. Compliance

with these regulations will reduce impacts from hazardous materials to a less than significant level.

## 14.4 Mitigation Measures

None required.

## 14.5 References

Personal Communications by Karin Noack with:

Devendorf, George. 1999. San Ramon Valley Fire Department. June 14.

Peacock, Tom. 1999. Alameda County Department of Environmental Health, Hazardous Materials Division. June 14.

Sawyer, Randy. 1999. Contra Costa County Health Services Department. March 15.

Stefani, Danielle. 1999. Pleasanton and Livermore Fire Departments. June 28.