# 9.0 HAZARDS AND HAZARDOUS MATERIALS

## 9.1 INTRODUCTION

This chapter describes the existing hazards to the environment, public, and worker health and safety within Pacific Gas and Electric Company's Windsor Substation Project area and evaluates the potential hazards and hazardous materials, including potential fire hazards and releases or encounters with existing hazardous substances, associated with project construction and operation. PG&E's best management practices (BMPs) include avoidance and protection measures (APMs) described in Section 9.5 Avoidance and Protection Measures that will ensure that any potential impacts will be less than significant.

## 9.2 METHODOLOGY

An environmental database report for the area surrounding the proposed substation site was obtained from Stantec, Inc. on November 19, 2008. The report identified sites that are registered on one or more of the environmental oversight agency databases, as listed in Attachment E: Environmental Database Resources. The report will be provided separately to California Public Utility Commission (CPUC) staff.

## 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 identifies 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 North Coast 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 Coast Region aimed at protecting aquatic resources. Discharges to surface waters in the region are subject to regulatory standards set forth in the Basin Plan.

The Hazardous Materials Management Services branch of the Sonoma County Health Department's Environmental Health Division is the Certified Unified Program Agency (CUPA) for Sonoma County. It regulates the following activities in the project vicinity:

- Hazardous Material Business Plan and Inventory Program
- California Accidental Release Prevention Program
- Hazardous Waste Generator Program
- Hazardous Waste Onsite Treatment

- Underground Storage Tank Program
- Above ground Petroleum Storage Tank Program

### 9.3.2 Hazardous Materials Sites

The environmental database report identified sites (including federal, state, and tribal) with potential soil and/or groundwater contamination that have been registered on one or more environmental oversight agency database lists. This list includes handlers of hazardous waste in addition to above ground and underground storage tanks that could potentially leak to nearby sites. The number of listed sites and the corresponding agencies are included below in Table 9-1.

**Table 9-1: Hazardous Material Sites**

| Agency List/Database | Search Radius | Number of Listed Sites |
|---|---|---|
| Federal RCRA | .025 Mile | 1 |
| State and Tribal Historic Cal-Sites | 1.0 Mile | 1 |
| State and Tribal CA Bond Exp Plan | 1.0 Mile | 2 |
| State and Tribal Cortese | 0.5 Mile | 2 |
| State and Tribal LUST | 0.5 Mile | 5 |
| State and Tribal SLIC | 0.5 Mile | 1 |
| State and Tribal UST | 0.25 Mile | 2 |
| State and Tribal AST | 0.25 Mile | 1 |
| State and Tribal Notify 65 | 1.0 Mile | 2 |
| State and Tribal Response | 1.0 Mile | 2 |
| State and Tribal Envirostor | 1.0 Mile | 2 |

Source: Stantec Phase 1 Environmental Site Assessment Report Lot 1 Evans/Drew Industrial Subdivision (2008)

Stantec reviewed the database search report to identify sites within the vicinity of the proposed substation site considered to have potential adverse impacts (*i.e.*, are known to contain or are expected to result in Recognized Environmental Conditions). Reported release sites identified in the environmental database report were evaluated with respect to the nature and extent of a given release, the distance of the reported release site from the proposed substation site, and the position of a reported release site with respect to known or expected local and/or regional groundwater flow direction. Generally, reported release sites identified within one fourth mile upgradient, one eighth mile crossgradient, or immediately adjacent in the downgradient direction

are considered to have a potential to generate adverse environmental impacts. No such sites were identified.

Sites that were listed in the database search report, but not identified as a release site (e.g. a site listed as a hazardous waste generator, but not as having had a release), and sites that were listed as being "closed," were not considered to have a potential impact to the project. Based on the above criteria, none of the listed sites in the database report were considered to have a potential to adversely affect the project. Furthermore, the Stantec report noted that there was no evidence to suggest the potential for soil or groundwater contamination at the proposed substation site.

### 9.3.3 Hazardous Materials Onsite

The types and quantities of hazardous materials anticipated being stored onsite during project construction and operations are listed in Table 9-2. PG&E will use standard BMPs (e.g., secondary containment, crew training, proper handling procedures, and immediate response to any spills) to ensure surface water and/or groundwater quality is not affected by an accidental release of hazardous materials.

**Table 9-2: Hazardous Materials Anticipated to be Stored Onsite**

| Type | Quantity |
|---|---|
| Sulfur Hexafluoride | 650 cubic feet |
| HY Volt II Transformer Oil | 5,000 gallons |

Source: PG&E, 2010

## 9.4 IMPACTS

### 9.4.1 Significance Criteria

Standards of significance were derived from Appendix G of the California Environmental Quality Act (CEQA) Guidelines. Impacts related to hazardous materials may be considered significant if they were to:

- 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; and/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 proposed substation site footprint that could create a significant hazard to the public or the environment. If construction crews were to uncover unanticipated buried contaminated soils, rock, or groundwater during substation construction or excavation activities associated with the distribution work, strict regulations regarding the handling and disposal of contaminated materials would apply, and crews would follow PG&E's BMPs for proper handling, reporting, transporting, and disposal. Therefore, impacts will be less than significant.

### *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. Based on the collective experience of PG&E and its consultants, such spills are typically minor and would be cleaned up immediately by construction personnel using spill response kits. PG&E will use standard BMPs (e.g., crew training, proper handling procedures, and immediate response to any spills) to ensure surface water and/or groundwater quality is not affected by an accidental release from a vehicle or motorized piece of equipment, particularly when working on the distribution pole removal and replacement activities adjacent to Pool Creek along Hembree Lane and the wetland feature along Conde Lane. Additionally, during substation foundation construction activities, PG&E will use standard BMPs for handling liquid concrete (e.g., proper handling, containment and proper disposal of onsite concrete washout) to prevent concrete from infiltrating the soil or contaminating nearby wetlands. In addition, before the foundation work occurs, the northern portion of the site will have already been graded to drain to the Spill Prevention Countermeasure and Control (SPCC) basin. Because PG&E will implement the company's standard BMPs, Storm Water Pollution Prevention Plan (SWPPP), and avoidance and protection measures identified in Section 9.5, the accidental release of hazardous materials would represent a less-than-significant impact.

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

#### *9.4.2.3 Fire Hazards*

The project will be constructed in mostly urban developed areas not susceptible to wildland fires. The areas directly surrounding the project are developed or open space mostly consisting of grassland vegetation. These grassland areas can be susceptible to fires though not on a larger, wildfire scale. Heat or sparks from vehicles or equipment have the potential to ignite dry vegetation and cause a fire. Vehicles and equipment will use existing roads to access the site. All roads to the project site are paved and most of the proposed substation site will be cleared of dry vegetation during the initial grading activities. Project personnel will be required to carry fire extinguishing equipment and will be directed to park away from any remaining dry vegetation to reduce potential ignition of unforeseen fire hazards at or near the project site. PG&E will also prohibit trash burning and restrict smoking to cleared areas. By following these preventative measures, the fire-related impacts will be less than significant.

#### *9.4.2.4 Lightning Hazards*

PG&E'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.

#### *9.4.2.5 Airport Proximity*

The project site sits approximately 1.26 miles northeast from the Charles M. Schulz Sonoma County Airport (Sonoma County Airport). The project site has an existing aviation easement in favor of the Sonoma County Airport allowing air traffic to fly over the project site as well as dictate what structures can be built within a certain safety zone. PG&E will comply with the terms of the aviation easement as stated in the Comprehensive Airport Land Use Plan for Sonoma County (CALUP).

Under CEQA guidelines, any project "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" could have significant impact. However, the project site sits east of residential areas and south of Wilson Ranch Soccer Park, a public soccer field that is frequently used by neighborhood and league play. Because the project site is located in an already populated and utilized area, it is unlikely that it will result in a safety hazard for people residing or working in the project area. New power line poles will be no taller than the existing lights at the soccer park. Further analysis of potential impacts associated with the project's proximity to the airport are analyzed and determined to be less than significant in Chapter 14: Transportation and Traffic.

The replaced distribution poles are estimated to be approximately 5 to10 feet taller than the existing poles; however, this height is still well below the threshold that is required for FAA approval (Code of Federal Regulations (CFR) Title 14 Part 77.13). Although the new poles

supporting the interconnecting 60 kV line into the proposed substation will also be taller than the existing poles along the Fulton No. 60 kV line, these poles will be well under the FAA approach surface for the Sonoma County Airport. As a result, the replacement of existing poles and construction of new poles will have no hazardous impact.

## 9.4.3 Operations and Maintenance

The following hazards have the potential to be present at the proposed substation site 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 proposed substation site 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 leak, the northern portion of the site containing the transformers will be graded to direct surface runoff to a basin that meets federal SPCC Guidelines (40 CFR, Part 112). The basin 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 basin will have a weir system and gate valve installed to allow for stormwater to be drained after the basin contents are inspected. Per the U.S. Environmental Protection Agency requirements, PG&E will inspect the equipment and spill containment area on a monthly basis to ensure that oil releases are contained and disposed of properly. The mineral oil will be contained, so it will not impact site workers, the public, or the environment. Implementation of the site grading and SPCC basin will ensure that potential impacts from an oil release will be less than significant.

#### 9.4.3.1.2 Batteries

The proposed 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 in a switchgear enclosure to prevent the release of battery acid in the event of a leak or rupture. Therefore, any 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 react promptly to minimize loss of $SF_6$, and thus potential impacts will be less than significant. SF6 is discussed in more detail in Chapter 5: Air Quality.

#### 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 valves. Therefore, potential impacts from high-pressure nitrogen gas will be less than significant.

#### 9.4.3.1.5 Electric Shock

The proposed substation could pose a hazard of electric shock to site trespassers. To minimize potential exposure to electric shock hazards, an eight-foot-tall wall and fencing will restrict site access. Warning signs will be posted to alert persons of potential electrical hazards. The tie in from the power line to the proposed substation will be designed in accordance with the CPUC's 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.

#### 9.4.3.1.6 Electric and Magnetic Fields

Recognizing that there is public interest and concern regarding potential health effects from exposure to Electric and Magnetic Fields (EMF) from power lines, Attachment F: EMF provides some general background information regarding EMF associated with electric utility facilities. However, EMF is not addressed here as an environmental impact under CEQA. The CPUC does not consider EMF to be an environmental issue or, in the context of CEQA, an environmental impact. This is because there is no agreement among scientists that EMF creates a potential health risk and because CEQA does not define or adopt standards for defining any potential risk from EMF. Instead, the CPUC requires PG&E and other utilities to employ "no cost" and specified "low cost" measures to reduce public exposure to EMF in accordance with CPUC Decision 06-01-042 and PG&E's "EMF Design Guidelines for Electrical Facilities." PG&E will comply with these requirements.

### *9.4.3.2 Fire Hazards*

Since substation and power line operation involve the transformation of electricity, operation will present a potential fire hazard. Incidents such as downed power lines 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 PG&E 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/fenced substation will be maintained to be free of all vegetation and combustible materials, and the overhead power lines will remain clear of vegetation as required by the CPUC. The proposed substation will not be manned, and will not be constructed of combustible materials. Therefore, there will be no exposure of people or structures to wild land fires and consequently no impact.

#### *9.4.3.3 Airport Proximity*

Although the project is located within a 2-mile radius of the Sonoma County Airport, the height and dimensions of the project will correlate with all federal, state and local requirements. There will be no impact to the safety of persons working within the project site or to air traffic flying near or over the project site. Further analysis of potential impacts associated with the project's proximity to the airport are analyzed and determined to have no impact in Chapter 14: Transportation and Traffic.

## 9.5 AVOIDANCE AND PROTECTION MEASURES

### 9.5.1 Construction

Because PG&E will implement the company's standard BMPs during construction of the facility, the accidental release of hazardous materials would represent a less-than-significant impact. However, to further reduce impacts, PG&E will implement project-specific avoidance and protection measures.

- PG&E will prepare a Hazardous Substance Control and Emergency Response Plan 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. Emergency-spill supplies and equipment will be clearly marked and immediately available at all work areas. 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 proposed substation will not result in significant impacts, no avoidance and protection measures are proposed.

## 9.6 REFERENCES


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