Pacific Gas and Electric Company™

Fire Prevention Plan

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Summary

Pacific Gas and Electric Company (PG&E) has had in place a number of separate operational plans and programs to prevent and mitigate the risk of fire ignitions associated with the operation of PG&E's electric facilities in areas having a real time Cal Fire "Extreme" and "Very High" fire rating. To complement and support the various operational measures PG&E has in place, PG&E monitors information made available from numerous entities and disseminates predicted weather and fire threat information to employees and contractors within its service territory to keep them informed of critical meteorological conditions. PG&E also has programs to reach out to its customers and first responders throughout its service territory to educate them on electric safety.

This plan collects in a single document the multiple fire prevention and mitigation plans and programs utilized in PG&E's entire service territory. It also includes in Addendum A, the additional California Public Utilities Commission (CPUC) requirements for "Extreme" and "Very High" Fire Threat Zones in Southern California, which includes Santa Barbara County.

Policy Statement

It is the Pacific Gas and Electric Company's policy to:

- Plan for natural and man-made emergencies such as fires, floods, storms, earthquakes, cyber disruptions, and terrorist incidents;
- Respond rapidly and effectively, consistent with the National Incident Management System principles, including the use of the Incident Command System (ICS), to protect the public and to restore essential utility service following such emergencies;
- Help to alleviate emergency-related hardships;
- Assist communities to return to normal activity.

Plan Components

1. Fire Prevention Pre-planning

Education

- PG&E conducts annual electric safety training for first responders; including law enforcement agencies, fire departments, public works and transportation agencies.

Training First Responders

- PG&E participates in annual joint exercises that include external partners from the first responder community and emergency management community to enhance preparedness and prevention efforts.
- PG&E meets annually with local, state and federal agencies and jurisdictions to share fire prevention plans, and strategize for the coming year.

Intelligence Gathering – Weather and Fire

- Through arrangements with the California Department of Forestry and Fire Protection (CAL FIRE) and the United States Forest Service (USFS), PG&E is notified daily when next-day fire index ratings of "Extreme" or "Very High" are calculated for any zone within the PG&E service territory. The rating received is the prediction of the most severe rating expected for each area for the following day. This information is received by the Grid Control Center and posted on the PG&E Intranet at [redacted] (example of Fire Index Map of PG&E Territory provided in Attachment 1)
- The USFS provides a forecast of the next day's Fire Danger Class (Low to Extreme) for the United States. Forecasts are derived from the National Fire Danger Rating System (NFDRS) output. Forecast maps for Northern California (http://www.wfas.net/images/firedanger/subsets/fdc_f_cn.png) and Southern California (http://www.wfas.net/images/firedanger/subsets/fdc_f_cs.png) are made available to the public daily.
- National Weather Service (NWS) issues Red Flag Warnings (RFWs) to inform the government and public of critical meteorological conditions conducive to new fire starts and/or extreme fire behavior and growth. This typically but not always involves a combination of high wind speed, high temperature, low fuel moisture and low relative humidity. The areal extent of any RFW issued in California can be found on the NWS California Fire Weather page: http://www.wrh.noaa.gov/firewx/cafw/index.php.
- California is divided into 2 Geographical Area Coordination Centers (GACC), California-North and California-South by the National Interagency Coordination Center (NICC) and National Interagency Fire Center (NIFC). The primary function of each GACC is to support Federal and State wildland fire agencies with logistical coordination and resource mobilization in and between GACCs. Each GACC contains an intelligence section, which is comprised of one or more meteorologists, who produce daily fire danger products and work in collaboration with other agencies (e.g. NIFC, NICC, and USFS). The California-North (http://psgeodata.fs.fed.us/7day/action/forecast/10) and California-South (http://psgeodata.fs.fed.us/7day/action/forecast/8) provide 7-Day Significant Fire Potential Outlook products that are updated daily.
- The PG&E Meteorology team monitors on a daily basis the forecasts and RFWs issued from all NWS forecast offices based in California (Eureka [EKA], Sacramento [STO], San Francisco [MTR], San Joaquin Valley [HNX], Los Angeles [LOX] and San Diego [SXG]), and others (Reno and Medford), . This process includes checking the NWS California Fire Weather page (http://www.wrh.noaa.gov/firewx/cafw/index.php) daily as well as reading NWS Fire weather forecast discussions (http://www.wrh.noaa.gov/sto/cafw/fwfall.php?wfo=sto).
- The PG&E Meteorology group obtains via satellite reception high-resolution weather model forecast data including the significant fire-weather parameters: rain, wind, temperature, and dewpoint temperatures (relative humidity) from the European Centre

for Medium-Range Weather Forecasting (ECMWF), Global Forecast System (GFS) and North American Mesoscale Model (NAM) weather forecast models. Custom data displays give PG&E meteorologists' detailed views of the latest fire weather model forecasts, which provide the information necessary to conduct briefings to the company on the current fire weather threat.

2. Threat Mitigation

PG&E has in place programs that serve to mitigate the risk of an ignition associated with its electrical operations through its service territory. The various program are:

Vegetation Management

PG&E manages the vegetation located in proximity to its overhead electric facilities, which reduces the risk of possible ignitions associated with vegetation contact. PG&E's program is designed to:

- Follow all existing State and Federal regulatory vegetation clearance requirements.
- Perform periodic patrols to ensure required vegetation clearances are maintained and hazard trees addressed. These are trees that are deemed structurally unsound and could strike power line if it were to fail.
- Maintain tree-to-line clearances as well as radial clearances around its poles in designated portions of its service territory during fire season pursuant to Public Resources Code Section 4292 and 4293.
- Maintain auditable records of all work done in high fire risk areas.

Overhead Patrols and Inspections

PG&E has a patrol and inspection program for its overhead electric facilities that helps to identify damaged facilities and other conditions that may pose the risk of an ignition. The program is designed to:

- Perform annual patrols of distribution lines in urban areas, designated high fire threat zones, and all transmission lines, with biannual patrols of overhead distribution facilities in rural areas.
- Perform detailed inspections of overhead distribution facilities on a 5-year cycle.
- Perform detailed inspections of overhead transmission lines on a 3-year cycle for 500 kV, a 5-year cycle for 230 kV and lower having steel structures, and a 2-year cycle for wood pole structures
- Maintain auditable documentation of patrol and inspection activity and findings.

Operational Readiness during High Risk Conditions

Utility Standard S1464 "Fire Danger Precautions in Hazardous Fire Areas," outlines operational requirements for working and operating in areas that are considered high fire risk during the designated fire season. This standard is based on Fire Index Ratings that are determined by Cal Fire daily during the fire season. A Fire Index zone is a static geographical area that is given a unique Fire Index number. All potential fire hazard zones throughout the service territory

are identified on the Fire Index Rating Map. When an area is rated "Extreme" or "Very High," it is identified and colored coded on the map. (Attachment 1) The following summarizes the plan.

- General readiness requirements for all employees are covered, including awareness of all laws, rules, and regulations of fire agencies having jurisdiction over areas in which they work or travel. Each crew must be equipped with well-maintained firefighting equipment.
- Fire Index ratings, as determined by Cal Fire on a daily basis during the fire season, are in effect from 0800 hours to 2 hours after sunset.
- Field personnel traveling or working in an "Extreme" or "Very High" Fire Index area as determined by the daily Cal Fire Index Map, are prohibited from any burning, welding, blasting, smoking, and driving off cleared roads.
- Electric Operations is restricted from testing any section of line that relays in a Fire Index area rated "Extreme" or "Very High", as determined by the daily Cal Fire Index Map, until the line has been patrolled and all trouble cleared.

Notification process to personnel of daily fire threat conditions

- Daily updates of a fire index website that contains an image showing active "Extreme" and "Very High" areas.
- Daily 6 a.m. fire index e-mail.
- Daily review of the fire index by Crew Supervisors and briefing of crews if they are heading into an area having fire indexes of "Extreme" and "Very High" zones.
- Daily dissemination of all Red Flag Warnings on Distribution System Operations (DSO) Storm Outage Prediction Project forecast for Extreme" and "Very High" areas and daily DSO status calls Mondays through Fridays, excluding holidays.
- Weekly Friday fire danger forecast from meteorology team.
- Production of a daily image of the "Extreme" and "Very High" fire index areas, using internal Geographic Information Systems (GIS). This image is available on the PG&E intranet and can be viewed with intranet access.

3. Pro-Active Responses to Fire Incidents

PG&E's fire prevention activities include firefighting and fire-recovery response. In the event a fire threatens public safety or PG&E facilities, PG&E will support firefighting efforts as appropriate, through the procurement and allocation of man power, particularly those from unaffected areas and outside sources and activation of PG&Es Incident Command System. PG&E has developed and has ready two 39' and four 24' Incident Command Centers that are self-contained, operationally ready, mobile coordination and communications centers, which can be deployed within hours.

With approval of the fire Incident Commander at the Incident Command Post, there are many cases where PG&E crews respond to the fire area and perform pole pre-treatment and fuel reduction activities ***ahead of the fire*** on and near the power line right-of–way.

- Pole pre-treatment is conducted with an approved wildland fire chemical applied to the base of the wooden power poles, thus helping to prevent ignition of the power pole from direct flame impingement or radiant heat.
- Vegetation clearing/fuel reduction – Vegetation Management crews may work ahead of the fire to reduce the fuel in and around the power poles and utility right-of-way using a variety of vegetation clearing/fuel reduction methods.
    - Limbs are removed to reduce ladder fuels, thus preventing a fire from getting into the tree crowns and reducing the volume of fuel/vegetation in the right-of-way.
    - Vegetation is cut and chipped utilizing large excavators with a mastication head to grind the vegetation to near the ground to create defensible space around the power poles if the fire were to burn in the proximity, the right-of-way would act as a fuel break and bring the fire out of the crown and down to the ground , so that the fire suppression crews will have a better chance to control the spread of the fire.
- Field readiness – Field personnel may work directly with the fire suppression Incident Command to coordinate efforts to identify potential hazards and mitigations to provide a safe area for the public and the personnel working onsite. If the power lines need to be de-energized, the crews are onsite to perform the task for the fire control personnel. This will alleviate a hazard and the possibility of contact with a live/hot conductor should it come down from a burned power pole or be brought down by a hazardous tree or other conditions.
- Operational controls – Onsite personnel may coordinate with fire suppression Incident Command personnel should a change in tactics be necessary to protect critical generation, transmission and distribution system assets.

4. Post Incident Recovery

Critique process

- PG&E normally conducts a thorough post-event critique within 21 days after a fire-related incident resulting in Operations Emergency Center (OEC) activation.
- PG&E also participates in joint public agency/PG&E debrief sessions following a fire event that required an escalated response, to gather information on response activities that went well, identify areas for improvement, and share best practices and lessons learned.
- Each department involved in an escalated-response event should review their emergency operations plans to determine whether modifications need to be made in light of the experience gained during the emergency.
- PG&E normally requests after action reports from responding agencies to review, and utilizes them in future improvement planning efforts.

Remediation Activities

- Additional clearing of hazardous, burned, or damaged trees that pose a threat to the utility lines is normally done after the fire has gone through the area.

- Silt control measures utilize the mastication process for minimal damage to the ground thus reducing the erosion issues. In coordination with fire suppression agencies, PG&E may construct water bars in the power line right-of-way access roads for erosion reduction in the burned area. This is done after the restoration efforts are completed.
- In some cases conductors and insulators may need to be cleaned based on the possibility that fire retardant was dropped on the line and that the particulate matter from the smoke plume could have caused a buildup on the line due to incomplete combustion of the fire, particulate matter, and radiant heat.

Example of Masticated Area

References

1. CPUC General Order 166, Standard 1.E: *Fire Prevention Plan*.
2. CPUC Decision 09-08-029: *Decision in Phase 1—Measure to Reduce Fire Hazards in California Before the 2009 Fall Fire Season*, August 20, 2009. (Phase 1 of Rulemaking 08-11-005.)
3. CPUC Decision 12-01-032: *Decision Adopting Regulations to Reduce Fire Hazards Associated with Overhead Power lines and Communication Facilities*, January 12, 2012. (Phase 2 of Rulemaking 08-11-005.)
4. Electric Distribution and Transmission Utility Standard S-1464 “Fire Danger Precautions in Hazardous Fire Areas”

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Addendum A

Special Fire Threat Zones
Santa Barbara County

Addendum A – Special Fire Threat Zones
Santa Barbara County

Summary

The CPUC has directed utilities to take additional steps to mitigate fire risk in certain high fire threat areas in Southern California counties, including Santa Barbara County.[1]

As a result PG&E's plan includes the following additional fire prevention and mitigation measures for its facilities in the applicable areas of Santa Barbara County.[2]

Vegetation Management

For line sections in a State Responsibility Area (SRA) or line sections located in "Extreme" and "Very High" Fire Threat Zones in a Local Responsibility Area (LRA), the following vegetation clearance requirements apply

Clearances to be maintained year-round:

- 2.4 kV-72 kV = 6.5' at time of trimming, 4' at all times
- 72 kV-110 kV = 10' at time of trimming, 6' at all times
- 110kV-300 kV = 20' at time of trimming, 10' at all times
- Above 300 kV = 20' at time of trimming, 15' at all times

Overhead Patrols

For overhead distribution facilities located in rural areas in the "Extreme" and "Very High" Fire Threat Zones of Santa Barbara County, patrols of applicable facilities should be conducted annually instead of every two years.

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[1] See, CPUC D.09-08-029 and D.12-01-032, and corresponding requirements in General Order (GO) 95 (including new Case 14 in Table 1 and Appendix E) and GO 165.

[2] The areas to receive special treatment by PG&E in Santa Barbara County are the "Extreme" and "Very High" Fire Threat Zones as designated on the Fire and Resource Assessment Program (FRAP) Map.

Attachments

1. Fire Index Map of PG&E Territory

Fire Index Map of PG&E Territory Attachment 1