

Preventing and Mitigating Fires While Performing PG&E Work

SUMMARY

This standard establishes requirements for PG&E personnel to follow when traveling to, performing work, or operating outdoors in any forest, brush, or grass-covered land.

The information in this standard supplements the instructions contained in local, state, and federal fire regulations and permits. However, if a local or state fire regulation or permit contains provisions more stringent than those in this document, the more stringent provisions **must** be followed.

TARGET AUDIENCE

This standard targets all PG&E employees and contractors working on or near facilities located in any forest, brush, or grass-covered lands, using equipment, tools, and/or vehicles whose use could result in the ignition of a fire.

Training (SAFE-1503WBT) targets PG&E employees involved in preventing and mitigating fires and must be completed annually between January 1 and April 1. Initial training must be completed by the standard's effective date.

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REQUIREMENTS

1 Safety

- 1.1 Performing utility work in any forest, brush, or grass-covered lands presents a danger of fire, in addition to the hazards inherent to utility work.
- 1.2 Following the directives in this standard is essential to mitigating fire danger and protecting the personnel, public, utility system and environment.
- 1.3 Perform all operations or action within hazardous fire areas in accordance with [Utility Standard SAFE-1001S](#), "[PG&E Injury & Illness Prevention Plan \(IIPP\)](#)," and the [Code of Safe Practices](#).

2 General Requirements

- 2.1 The work supervisor / local superintendent must ensure the following actions are taken:
 1. Identify and comply with the local, state, and federal fire authority permits and/or restrictions in the area where the work is to be performed, including Federal Energy Regulatory Commission (FERC) project requirements.
 2. Ensure a tailboard is completed for any of the work activities listed in the [Wildfire Mitigation Matrix \(Attachment 1\)](#) and review the [Wildfire Risk Checklist \(Attachment 2\)](#) during the safety tailboard to facilitate discussions about the work being performed and the planned mitigations for the work. Discussions should include the following topics:
 - a. The activities being performed
 - b. The mitigations being taken
 - c. Evacuation routes
 - d. Awareness of the communications protocols needed on the jobsite
- 2.2 Any person in charge (PIC) of working personnel must follow locally changing meteorological conditions as well as be aware of the possibility of increased fire danger during the time work is in progress.
- 2.3 When traveling to the jobsite, or when operating off designated roadways or overland, all personnel must take the following actions:
 1. **Do not drive** overland (through fields, forests, etc.) except when performing required work or during an emergency.

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2.3 (continued)

2. Ensure that required tools, at a minimum, are available on vehicles.
 - a. Passenger vehicle:
 - One shovel
 - One fire extinguisher in good working order, minimum U.L. rated 1A10BC
 - b. Trucks, four-wheel drive vehicles, and all-terrain vehicles (ATVs):
 - One shovel or McLeod fire tool
 - One 5-gallon backpack pump or larger capacity water (or Compressed Air Foam System [CAFS]) pump/delivery system
 - c. Heavy machinery or equipment* (e.g., tractors, tub grinders, whole tree chippers, excavators, bulldozers):
 - One shovel, McLeod fire tool or Pulaski
 - One fire extinguisher in good working order, minimum U.L. rated 1A10BC
 - One 5-gallon backpack pump or larger capacity water (or CAFS) pump/delivery system

***NOTE**

When multiple vehicles are traveling together to a jobsite, each vehicle is not required to carry a full set of tools. This is also true for heavy machinery when tools do not fit on it properly. However, there **must** be the required tools available for personnel at the jobsite.

3. While driving off designated roadways, maintain situational awareness and look for potential ignitions that could occur when driving on dry brush, grass, or other vegetation.

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2.3 (continued)

4. When possible, ensure vehicles are parked in an area cleared of vegetation.
 - a. IF unable to park in a cleared area,

THEN ensure the proper fire extinguishing tools are on the vehicle, as described above. Maintain situational awareness and monitor for potential ignitions.
5. When unable to park in a cleared area, look under the vehicle once parked to ensure that dry vegetation is not in contact with any of the exhaust system, which is a possible ignition source.
6. Turn off the motors of unoccupied vehicles when parking them off road **unless** the vehicle and the motor must remain running for work purposes. Maintain situational awareness for potential ignitions.

2.4 **Before starting work** on or near any forest, brush, or grass-covered lands, all personnel **must** perform the following actions:

1. Review and understand the daily [Utility Fire Potential Index](#) (FPI).
2. Review the [Wildfire Mitigation Matrix \(Attachment 1\)](#) and assess the required mitigations based on the Utility FPI provided by PG&E's Meteorology Team.
 - a. This matrix is set up with work activities and activity descriptions down the left, and the required mitigations dependent on the Utility FPI across the top.
 - b. Activities requiring additional mitigations are referenced in the corresponding box in blue text.
 - c. During Red Flag Warnings, assume the [Wildfire Mitigation Matrix \(Attachment 1\)](#) has a Utility FPI rating of "R5," and keep the mitigations for that rating.
3. Participate in a tailboard for any of the work activities listed in the [Wildfire Mitigation Matrix \(Attachment 1\)](#) and use the [Wildfire Risk Checklist \(Attachment 2\)](#) to facilitate discussions about the work being performed and the planned mitigations for the work.

2.5 During major work operations where there are not enough tools on vehicles or at the jobsite to outfit all crew members at the operation, a sealed toolbox is required to be at the jobsite and must be easily accessible. This sealed toolbox must contain:

1. One backpack-type fire extinguisher filled with water
2. Two axes
3. Two McLeod fire tools
4. Enough shovels for each employee at the operation

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- 2.6 Additionally, a chainsaw with at least 3 ½ horsepower is required at all jobsites where work being performed could result in a spark, fire, ember, or flame.
- 2.7 The specific fire-fighting tools to be kept at jobsites are required to meet state law and provide an option for personnel or first responders to have additional onsite tools. At no time will any PG&E employee or contractor be asked to fight any fire beyond their experience and training.
- 2.8 When working at the jobsite, all personnel **must** perform the following actions:
 1. Observe all laws, rules, and regulations of local, state, and federal fire authorities having jurisdiction over areas in which they are working.
 2. Perform mitigation measures as described in this standard during any operation or action that could result in an uncontrolled fire, including wetting the general area.
 3. Do **not** start any fire that could escape control through careless or negligent actions.
 4. While performing stationary ground level jobs or activities from which a spark, fire, or flame may originate (e.g., welding, cutting, grinding), all flammable material (e.g., grass, leaf litter, including snags¹) **must be removed** down to the mineral soil around the operation for 10 feet.
 - a. IF the jobsite is not stationary,

OR IF it cannot be sufficiently cleared because of environmental concerns (e.g., vegetation clearances along electric distribution circuits, erosion),

AND the Utility FPI rating is “R1,” “R2,” or “R3,”

THEN there must be a **Working** Fire Watch assigned at the jobsite.
 - b. IF the jobsite is not stationary,

OR IF it cannot be sufficiently cleared because of environmental concerns (e.g., vegetation clearances along electric distribution circuits, erosion),
 - c. AND the Utility FPI rating is “R4” or “R5,”

THEN there must be a **Dedicated** Fire Watch equipped with at least 120 gallons of water with 200 feet of hose and 40 pounds per square inch (psi) at the nozzle.
 5. When responding to an emergency, follow all the applicable requirements included this standard, if possible.

¹ Snag: A standing dead or dying tree.

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- 2.9 If a fire ignites on the jobsite, personnel must perform the following actions:
1. Call emergency services (9-1-1) to report the ignition, even if the fire has been suppressed.
 2. Take safe, reasonable suppression actions consistent with the person's experience and training.
 3. If necessary, evacuate to a safe location and provide any information possible to first responders when they arrive.
 4. **After** contacting emergency services, the jobsite supervisor must call the Wildfire Safety Operations Center (WSOC) at 1-800-255-7593 to report the fire. The supervisor must include the following information, at a minimum:
 - Location
 - Source of ignition
 - Impacted assets
 5. All jobsite personnel **MUST** report incidents to their direct supervisors and follow any further reporting procedures, as required (e.g., notify Control Centers).
- 2.10 Smoking (including but not limited to cigarettes, cigars, and vape pens) is only allowed when Utility FPI rating is "R1," "R2," or "R3" and the following mitigations are taken:
1. There is a cleared location (down to mineral soil) at the jobsite with a 3-foot radius.
 2. There is a means to extinguish any potential ignition.
 3. There is a water-filled or sand-filled receptacle (e.g., a metal bucket) to extinguish cigarettes, cigars, etc.
 4. Do not smoke when Utility FPI ratings are "R4," "R5," or "R5-Plus."

3 Electric Operations Requirements

Apply the following restoration and testing procedures when the Utility FPI rating is "R4," "R5," or "R5-Plus."

3.1 Replacing Fuses

1. Personnel should not begin to replace fuses until the following actions are completed:
 - a. The overhead (OH) line is successfully patrolled and hazards are cleared.
 - b. Conditions at the base of the pole do **not** support ignition or the rapid spread of fire in the event of arcing or sparking.

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3.1 (continued)

2. Electric Distribution and Transmission OH Patrol Requirements
 - a. This information **does not** apply to fuses.
 - b. Refer to [Utility Procedure TD-1464P-01, "Fire Index Patrol and Non-Reclose Procedure,"](#) for information about patrolling and preventing automatic testing in [Fire Index Areas](#) with "R4" and above fire ratings.

4 Fire Index Process

[Fire Index Areas](#) are geographical areas where fire danger ratings are decided. These areas were originally developed by the [United States Forest Service](#) (USFS) Pacific Southwest Research Station and are still used by [U.S. Forest Service-California Department of Forestry and Fire Precaution](#) (CAL FIRE) and federal (e.g., USFS) agencies.

Over the years, these geographical areas have been modified for PG&E operations. A map of the [Fire Index Areas](#) is available on the PG&E Intranet at: http://www.t2/Weather/EO/FireIndex/fireindex_2018.pdf.

The PG&E Meteorology Team operates a high-resolution, weather and fire danger coupled model. This model outputs granular (3 kilometer [km]) fire-weather and danger parameters.

Model outputs are leveraged to produce fire-danger adjective ratings ranging from "R1" to "R5-Plus" for each [Fire Index Area](#) within the PG&E service territory.

Fire Weather Watches and Red Flag Warnings issued by the National Weather Service are also incorporated as "R4" in the weather component of the model.

- 4.1 The Utility FPI rating predicts the most severe rating expected for each area from midnight to midnight. This information is posted and updated daily on the [Utility Fire Potential Index](#) website.

1. Utility FPI ratings are effective from 6 a.m. (0600) and remain in effect for 24 hours.

NOTE

Intraday updates are rare but may occur if the fire danger conditions or other circumstances warrant the update.

2. The [Utility Fire Potential Index](#) website allows personnel to perform the following actions:
 - a. Filter information by Grid Control Center Area, Distribution Control Center Area, or [Fire Index Area](#).
 - b. Subscribe to receive, either by email or epage, the daily (issued at 6:15 a.m.) "Fire Adjective Index" summary.

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5 Mitigations

- 5.1 When the Utility FPI rating is “R1,” “R2,” or “R3,” personnel must follow the requirements provided in [Section 2, “General Requirements,”](#) starting on Page 2, when performing work in any forest, brush, or grass-covered lands.
- 5.2 When the Utility FPI rating is “R4,” as shown in the [Wildfire Mitigation Matrix \(Attachment 1\)](#), personnel must take the following mitigations in addition to the mitigations listed in [Section 2, “General Requirements,”](#) depending on the work being performed:
 1. Ensure there is at least 120 gallons of water at the jobsite with at least 200 feet of hose with 40 psi at the nozzle.
 2. Evaluate weather conditions throughout the day to ensure it remains safe to work and to confirm that mitigations are appropriate based on the Utility FPI rating.
 3. Assign a **Working** Fire Watch to monitor for fire at the jobsite while performing normal work duties.
 - a. The Working Fire Watch must remain at the jobsite for 30 minutes after work ends.
- 5.3 When the Utility FPI rating is “R5” or “R5-Plus,” as shown in the [Wildfire Mitigation Matrix \(Attachment 1\)](#), personnel must take one or more of the following mitigations **in addition** to the previously listed mitigations, depending on the work being performed:
 1. Ensure there is a **Dedicated** Fire Watch at the jobsite while performing normal work duties.
 - a. The Fire Watch must remain on the jobsite for at least 30 minutes after work ends.
 2. Ensure there is a trailer-mounted water tank, water tender, or other water-delivery/fire-suppression method (e.g., CAFS unit) at the jobsite while performing work.
 - a. There must be an extinguishing agent (i.e., water, fire retardant, or CAFS) in the immediate area with a hose long enough to reach the entire jobsite at all times while performing normal work duties.
 - b. When the trailer-mounted water tank, or other water-delivery device, leaves the jobsite to refill, personnel must stop work until it returns **unless** the jobsite is sufficiently treated.
 3. Personnel should consider additional vegetative fuel modifications before starting work. Modifications include the following methods:
 - Mowing
 - Masticating
 - Disking
 - Pretreating surrounding fuels with fire retardant

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5.3 (continued)

4. **Suspend planned work during “R5-Plus” conditions**, as defined in the [Wildfire Mitigation Matrix \(Attachment 1\)](#).
5. For any **emergency work** being performed in “R5-Plus” conditions, personnel **must ensure that one of the following safety measures is in place**:
 - a. EITHER a Safety and Infrastructure Protection Team (SIP-T) **must** be at the jobsite on standby while work is performed,
 - b. OR a 300-gallon, trailer-mounted water tank, water tender, or other water-delivery/fire-suppression device **must** remain at the jobsite and must be dedicated to fire suppression.

END of Requirements

DEFINITIONS

Dedicated Fire Watch: A crew member whose **only** assigned job responsibility is to stand by at a jobsite to watch for possible or new fire ignitions while work is being performed. This person should have complete situational awareness, help to extinguish fires quickly, and stop work, when needed, due to safety.

Designated roadway: Paved, graveled, and/or maintained dirt roads used by PG&E personnel.

Disking: A disc-shaped tool used to till soil for vegetation removal.

Fire Index Area: A geographical area over which fire danger determinations are produced.

Fire Tools: The tools used to fight fires. Fire tools include the following equipment:

- **Shovel:** A standard, round point shovel at least 42 inches long.
- **McLeod:** A hand tool used for raking and scraping.
- **Pulaski:** an axe-like fire hand tool used for cutting, chopping or grubbing.
- **Backpack pump:** A portable 5-gallon water pack with a hose and nozzle used to extinguish fires. These can be collapsible backpacks, plastic or steel tanks.

Fire Weather Watch: A type of watch issued by the National Weather Service to alert fire officials and firefighters of potentially dangerous fire weather conditions in the next 24 to 36 hours.

Major Work Operation: A job where work activities or staging of resources will be concentrated in and out of a staging area. Jobsites where people stage and conduct construction-type activities typically are large.

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DEFINITIONS (continued)

Masticating: Reducing vegetation into small chunks to assist in removing small trees (e.g. snags).

Overland Travel: Areas that are overgrown with grass and/or brush without a visible road.

Red Flag Warning: A warning issued by the National Weather Service to alert fire officials and firefighters of potentially dangerous and imminent fire weather conditions.

Safety and Infrastructure Protection Team (SIP-T): This in-house team consists of two-person crews composed of IBEW-represented employees who are trained and certified safety infrastructure protection personnel. They provide standby protection and asset protection services in support of crews and protect critical utility infrastructure within PG&E's service territory, especially in areas at higher risk of wildfire.

Stationary Work: Work being performed in a single location for an extended period that is neither intended nor expected to move.

Utility Fire Potential Index (FPI) Rating: A rating to determine the risk of fire and its likely behavior. Its calculation and scale from "R1" to "R5-Plus" considers fuel moisture, humidity, wind speed, air temperature, and historical fire occurrence. These ratings are as follows:

- "R1": Very little or no fire danger.
- "R2": Moderate fire danger.
- "R3": Fire danger is so high that care must be taken using fire-starting equipment. Local conditions may limit the use of machinery and equipment to certain hours of the day.
- "R4": Fire danger is critical. Using equipment and open flames is limited to specific areas and times.
- "R5": Fire danger is so critical that the using some equipment and open flames is not allowed in certain areas.
- "R5-Plus:" The greatest level of fire danger where rapidly moving, catastrophic wildfires are possible. This is typically when fire danger is R5, "plus" there are high-risk weather triggers (e.g., strong winds).

Working Fire Watch: A crew member responsible for fire detection, risk mitigation, and total situational awareness while work is being performed **in addition to** normal assigned work duties. This crew member is also responsible to help extinguish fires and stop work, when required, due to safety hazards.

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IMPLEMENTATION RESPONSIBILITIES

The vice president in charge of the Community Wildfire Safety Program is responsible for approving and revising this standard, as well as ensuring its distribution.

The directors responsible for field and operational teams within the following organizations must ensure that their employees, whose actions could result in igniting a fire, are aware of and comply with this standard:

- Electric operations
- Gas operations
- Power generation
- Information technology
- Customer operations
- Shared services

GOVERNING DOCUMENT

NA

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[California Public Resources Code – Prohibited Activities](#)

[California Health & Safety Code](#)

[United States Forest Service](#)

[U.S. Forest Service-California Department of Forestry and Fire Precaution \(CAL FIRE\)](#)

REFERENCE DOCUMENTS

Developmental References

General:

- [Code of Safe Practices](#)
- [Numbered Document 015225, “Cutouts, Fuses, and Disconnects for Overhead Distribution Lines”](#)
- [Safety and Health Procedure SH&C 236, “Fire Prevention During Welding, Cutting and Other Hot Work”](#)

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REFERENCE DOCUMENTS (continued)

Utility Procedures:

- [TD-1464P-01, "Fire Index Patrol and Non-Reclose Procedure"](#)
- [TD-4640P-01, "Hot Work Control–Fire Prevention"](#)

Utility Standards:

- [SAFE-1001S, "Safety and Health Program Standard"](#)
- [TD-1460S, "Welding Control"](#)

Supplemental References:

- [CAL FIRE \(Department of Forestry and Fire Protection\) *Power Line Fire Prevention Field Guide*, "Statutes and Regulations Pertaining to Overhead Powerline Infrastructure"](#)
- [California Public Resource Code](#)
- [National Wildfire Coordinating Group, *NWCG User Guide for Glossary of Wildland Fire*](#)
- [United States Department of Agriculture \(USDA\) Forest Service, "National Fire Danger Rating System"](#)

APPENDICES

NA

ATTACHMENTS

[Attachment 1, "Wildfire Mitigation Matrix"](#)

[Attachment 2, "Wildfire Risk Checklist"](#)

DOCUMENT REVISION

This utility standard cancels and supersedes Utility Standard TD-1464S, "Fire Danger Precautions in Hazardous Fire Areas," dated 06/24/2015.

DOCUMENT APPROVER

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REVISION NOTES

Where?	What Changed?
Section 1, "Safety"	Moved the "Safety" information to Section 1 under REQUIREMENTS. The standard template no longer has a safety section in the front matter.
Section 2, "Personnel Requirements"	Rearranged Section 2 (formerly Section 1) to group requirements by user group (i.e., supervisors, person in charge, employees). Additional information includes: <ul style="list-style-type: none"> - A description of the fire tools required while traveling in motor vehicles (based on California Public Resources Code (PRC) 4428). - Report a fire to WSOC after reporting the fire to emergency services.
Section 3, "Electric Operations"	The language now refers to all fuses used.
Section 5, "Utility Fire Potential Index Process"	Updated to include R5-Plus ratings. Updated the definition of Utility Fire Potential Index.
Section 6, "Mitigations"	This section describes necessary mitigations based on the work being performed and the Utility Fire Potential Index.
Attachment 1, "Wildfire Mitigation Matrix"	Previous Subsection 1.6 is more inclusive of all work activities and has been moved to Attachment 1, "Wildfire Mitigation Matrix." This matrix describes work activities and necessary mitigations based on the Utility Fire Potential Index.
Attachment 2, "Wildfire Risk Checklist"	Added this new attachment.