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July XX, 2026

A. 24-11-005

Moraga-Oakland X 115 kV Rebuild Project

Applicant-Proposed Measure (APM) WFR-1: Construction Fire Prevention Plan

This project-specific Construction Fire Prevention Plan supports Pacific Gas and Electric Company's (PG&E's) request to the California Public Utilities Commission (CPUC) for a Notice to Proceed (NTP) of the Moraga-Oakland X 115 kV Rebuild Project (A. 24-11-005) by fulfilling pre-construction compliance with Applicant-Proposed Measure (APM) WFR-1 in the Mitigation Monitoring and Reporting Program.

PG&E's fire prevention best work practices are documented as Utility Standards and Procedures, for employees and contractors to implement during PG&E work. To achieve the objective of the project-specific Construction Fire Prevention Plan, PG&E will implement APM WFR-2 and three utility standards: Utility Standard, EMER-4102S, *Preventing and Mitigating Fires While Performing PG&E Work* (which supersedes Utility Standard TD-1464S-JA03 referenced in APM WFR-1), Utility Procedure EMER-4102P-01, *Applying EMER-4102S Work Activities Procedure*, and Utility Procedure EMER-4102P-02, *Jobsite Ignition Reporting Procedure*. PG&E's construction contracts include requirements for its construction contractors to adhere to EMER-4102S, EMER-4102P-01, EMER-4102P-02, and APM WFR-2, including the completion of contractor training, which has fire prevention modules, to be eligible for PG&E work.

The text of APM WFR-1 and APM WFM-2 is followed by a table that indexes the APM WFR-1 requirements with EMER-4102S, EMER-4102P-01, EMER-4102P-02, and APM WFR-2.

APM WFR-1: *A project-specific Construction Fire Prevention Plan for construction of the Project will be prepared prior to initiation of construction by PG&E. The PG&E plan will be approved by the CPUC. The final plan will be approved by the CPUC at least 30 days prior to the initiation of construction activities. The plan will be fully implemented throughout the construction period, and it will include the following at a minimum:*

The purpose and applicability of the plan

- *Incorporation of the requirements in PG&E's current Utility Standard TD-1464S [superseded by Utility Standard EMER-4102S] Preventing and Mitigating Fires While Performing PG&E Work*
- *Responsibilities and duties for compliance*
- *Preparedness training and drills*
- *Procedures for fire reporting, response, and prevention that include:*
 - *Identification of daily site-specific risk conditions*
 - *The tools and equipment needed on vehicles and on hand at sites*
 - *Reiteration of fire prevention and safety considerations during tailboard meetings*
- *Daily monitoring of the Red-Flag Warning System with appropriate restrictions on types and levels of permissible activity*
- *Coordination procedures with federal, state, and local fire officials and emergency responders, including notifications of temporary lane or road closures*
- *Crew training, including the construction fire prevention practices described in APM WFR-2*
- *Method(s) for verifying that all plan protocols and requirements are being followed*

PG&E or its contractor will be responsible for training Project personnel and enforcing all provisions of the PG&E Construction Fire Prevention Plan, as well as performing other duties related to fire detection,

prevention, and suppression for the Project. Construction activities will be monitored to ensure implementation and effectiveness of the plan.

APM WFR-2: PG&E will implement the following fire prevention practices at active construction sites and during maintenance activities:

- Existing PG&E personnel conducting maintenance on the Project are trained on the PG&E Utility Standard TD-1464S for Preventing and Mitigating Fires While Performing PG&E Work or relevant current standard and will follow the standard in regard to training, preparation, communication methods and means, observations of and alerts concerning weather conditions including NWS events, and PG&E's work restrictions and fire mitigation required for elevated PG&E Utility FPI ratings (R4, R5, or R5-Plus).
- Construction personnel will be trained in fire-safe actions, including PG&E's current Utility Standard for Preventing and Mitigating Fires While Performing PG&E Work, Wildfire Prevention Contract Requirements, and the Project's PG&E Construction Fire Prevention Plan concerning initial attack, firefighting, and fire reporting. Construction personnel will be trained and equipped to extinguish small fires to prevent them from growing into more serious threats.
- Construction personnel will have fire suppression equipment on all construction vehicles per PG&E Utility Standard TD-1464S and will be required to park vehicles away from dry vegetation. Water tanks and/or water trucks will be sited or available at active project sites for fire protection during construction.
- All construction crews and inspectors will be provided with radio and cellular telephone access that is operational in all work areas and access routes to allow for immediate reporting of fires. All fires will be reported to the fire agencies with jurisdiction in the area upon discovery of the ignition.
- While performing stationary ground-level jobs or activities from which a spark, fire, or flame may originate (for example, welding, cutting, grinding), all flammable material (for example, grass, leaf litter, dead or dying tree) must be removed down to the mineral soil around the operation for a minimum of 10 feet.
- PG&E General Requirements for Wildfire Mitigation (R1 to R3) apply for PG&E work areas located farther than 5 miles from an FIA when the nearest FIA has an elevated FPI rating (R4, R5, or R5-Plus), except during NWS Red-Flag Warnings and Fire Weather Watch events when R5 mitigations would apply.
- For work within an FIA, during Red-Flag Warning and Fire Weather Watch events, as issued by the NWS, and elevated PG&E Utility FPI rating (R4, R5, or R5-Plus), all construction activities will refer to the current PG&E Standard TD-1464S and related requirements such as PG&E Wildfire Prevention Contract Requirements, Attachment 1 – Wildfire Mitigation Matrix, and Attachment 2 – Wildfire Risk Checklist Fire Mitigations. With the increased potential fire risk of R4, additional water resources are required, and a working fire watch is assigned to be able to continue work as long as the weather conditions are evaluated to ensure it remains safe to continue work.

For R5 and R5-Plus ratings, measures beyond R1 to R4 levels include posting a dedicated fire watch at the jobsite, making available a trailer-mounted water tank or alternative water delivery method at the jobsite, and modifying the fuel sources surrounding the jobsite. All planned work is suspended during an R5-Plus fire rating. During all emergency work being performed for an R5-Plus fire rating, personnel must have a PG&E Safety and Infrastructure Protection Team on standby or a 300-gallon water tender available. Use of heavy equipment (blades, dozers, skid steers, excavators, back hoes), construction hot work, and electrical equipment work (including tasks related to conductors, pole, and overhead equipment from which a spark, fire, or flames may originate) are allowed with the R5 mitigations in place but not allowed during R5-Plus conditions.

The following table provides an index of APM WFR-1 fire risk reduction requirements and corresponding elements of the PG&E's Project Construction Fire Prevention Plan (*Preventing and Mitigating Fires While Performing PG&E Work*) which satisfies the required fire risk reduction measures.

Fire Risk Reduction Measures Required By APM WFR-1	Corresponding Elements of the Construction Fire Prevention Plan
A project-specific Construction Fire Prevention Plan for construction of the Project will be prepared prior to initiation of construction by PG&E.	<i>EMER-4102S, EMER-4102P-02, and APM WFR-2 describe fire prevention procedures at active construction sites.</i>
Responsibilities and duties for compliance	<i>EMER-4102S, Sections 2.3(2), 2.4, 2.5</i> <i>EMER-4102P-01</i> • Wildfire Mitigation Matrix • Wildfire Risk Assessment Form <i>EMER-4102P-02</i>
Preparedness training and drills	<i>EMER-4102S, Section 2.8</i> <i>EMER-4102P-01</i> • Wildfire Mitigation Matrix • Wildfire Risk Assessment Form <i>APM WFR-2 (first two bullet points)</i>
Procedures for fire reporting, response, and prevention that include: • Identification of daily site-specific risk conditions • The tools and equipment needed on vehicles and on hand at sites • Reiteration of fire prevention and safety considerations during tailboard meetings • Daily monitoring of the Red-Flag Warning System with appropriate restrictions on types and levels of permissible activity • Coordination procedures with federal, state, and local fire officials and emergency responders, including notifications of temporary lane or road closures • Crew training, including the construction fire prevention practices described in APM WFR-2 • Method(s) for verifying that all plan protocols and requirements are being followed	<i>EMER-4102S, Sections 2.7, 2.8, 2.9, 5.1</i> <i>EMER-4102P-01</i> • Wildfire Mitigation Matrix • Wildfire Risk Assessment Form <i>EMER-4102P-02, Section 1.1</i> <i>APM WFR-2</i>
The project-specific Construction Fire Prevention Plan shall be submitted to the California Public Utilities Commission (CPUC) for review and approval at least 30 days prior to initiation of all construction activities in areas.	Referenced documents for use as the project-specific Construction Fire Prevention Plan are attached.

Enclosure(s):

- Utility Standard EMER-4102S – *Preventing and Mitigating Fires While Performing PG&E Work*, Publication Date: 03/01/2024 Rev: 0.
- Utility Procedure EMER-4102P-01 – *Applying EMER-4102S Work Activities Procedure*, Publication Date: 03/01/2024 Rev: 0.
 - o EMER-4102P-01-Att0: *Wildfire Mitigation Matrix*
 - o EMER-4102P-01-F01: *Wildfire Risk Assessment Form*
- Utility Procedure EMER-4102P-02 – *Jobsite Ignition Reporting Procedure*, Publication Date: 03/01/2024 Rev: 0.

Preventing and Mitigating Fires While Performing PG&E Work

SUMMARY

This utility standard establishes precautions for PG&E employees and contract partners to follow when traveling to, performing work, or operating outdoors on or near any forest-, brush-, or grass-covered lands. This includes any location that has vegetation that can sustain combustion permitting the spread of fire.

The information in the standard supplements the instructions in local, state, and federal fire regulations and permits. 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.

SAFE-1503WBT, *Fire Danger Precautions*, targets work personnel working on or near any forest-, brush-, or grass-covered lands. This training for the target audience is mandatory, generally to be completed annually between January 1 and April 1.

For more information on how to navigate the required mitigations outlined in this standard, refer to Utility Procedure [EMER-4102P-01, Applying EMER-4102S Work Activities Procedure](#).

TARGET AUDIENCE

All PG&E employees and contract partners performing PG&E work that may result in a spark, fire, or flame on or near any forest-, brush-, or grass-covered lands.

PG&E's workforce, including our contract partners, are defined as "work personnel" throughout the standard.

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Preventing and Mitigating Fires While Performing PG&E Work

REQUIREMENTS

1 Safety

- 1.1 Performing utility work on or near 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 preventing and mitigating fire danger and protecting the environment, the utility system, work personnel, and the public.
- 1.3 Perform all operations or actions within hazardous fire areas in accordance with [SAFE-1001S, "PG&E Injury & Illness Prevention Plan \(IIPP\),"](#) and the [Code of Safe Practices](#).

2 General Requirements

- 2.1 When performing work that could produce a spark, fire, or flame on or near any forest-covered land, brush-covered land, or grass-covered land, within 25 feet of any flammable material, follow the requirements laid out in this section, **regardless** of the daily [Utility Fire Potential Index \(FPI\) Forecast](#).
- 2.2 During R1–R2 conditions, AND **when vegetation cannot sustain** combustion permitting the spread of a fire due to snow, rain, dense fog, or wet vegetation, the requirements of this standard do not apply.
- 2.3 The work supervisor/local superintendent and managers must ensure that the following actions are taken:
 - 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.
 - When operating on Federal land, PG&E must follow the [Federal Project Activity Level \(PAL\)](#) requirements which outline fire protection measures and activity restrictions based on fire risk. Predicted PAL ratings can be located on the [7-Day PAL Outlook](#) or by contacting USFS [Region 5 Forest & Grassland Offices](#).
 - Follow the guidelines of [Appendix F, Operations and Maintenance Plan for Electric Facilities on National Forest System Lands within the Pacific Southwest Region](#).
- 2.4 Any person in charge (PIC) of work 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.
- 2.5 When fire suppression tools and extinguishers are required, they must be immediately available in the area from which a spark, fire, or flame may originate.
- 2.6 Red Flag Warnings require the use of the R5 Fire Mitigations outlined in [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#).

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- 2.7 While intraday updates are rare to FPIs they may occur if the fire danger conditions, or other circumstances warrant the update from Meteorology and Fire Science. Subscribe [here](#) to receive the daily FPI email alerts.

APPLYING EMER-4102S TO PERFORMING WORK ACTIVITIES

- 2.8 **Before starting work** on or near any forest-, brush-, or grass-covered lands, you must fully read and understand this standard (EMER-4102S). A simple 4-step method has been developed to apply this standard; see [EMER-4102P-01, Applying EMER-4102S Work Activities Procedure](#), for details.
1. DETERMINE the [Fire Index Area \(FIA\)](#) in which you are working.
 2. DETERMINE the [Fire Potential Index \(FPI\)](#) rating for the day.
 3. IDENTIFY the work activity being performed on [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#) and implement the required mitigations outlined in the matrix.
 4. COMPLETE the [Wildfire Risk Assessment](#).
- 2.9 A Wildfire Prevention and Mitigation mobile field application is available for PG&E issued devices. Field crews are strongly encouraged to utilize this application that contains numerous automated features including:
- FIA and FPI based on user-entered work location (lat / long).
 - Required fire mitigations for specified work activity.
 - Required type and quantity of firefighting tools based on crew size.
 - Incombustible and emergency work exemptions.
 - Completion and electronic retention of required wildfire risk assessment.
- 2.10 Where the Wildfire Prevention and Mitigation mobile field application is unavailable (e.g., when the network is down or the application is inaccessible), the previously used paper format must be used as the backup method.
- 2.11 Quick reference guides (QRGs) are available in the Technical Information Library (TIL) for:
- [App Installation Guide](#)
 - [App QRG](#)
 - [App Dashboard QRG](#)

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3 Mitigations

- 3.1 The mitigations outlined in this standard are minimum requirements. Implement additional mitigations if the PIC deems them necessary.
- 3.2 When the FPI rating is R1, R2, or R3, work personnel must follow the requirements set forth in [Section 2, "General Requirements"](#) when performing work on or near any forest-, brush-, or grass-covered lands.
- 3.3 In preparation of R4 and R5 conditions, work personnel must always consider additional vegetative fuel modifications before starting work.
 1. Modifications include the following methods:
 - Mowing
 - Masticating
 - Disking
 - Wetting down the vegetation in the area
 2. Any vegetative fuel modifications that result in ground disturbing activity must have the appropriate environmental review.
 - Consult the project's Environmental Release to Construction (ERTC) (included in the Job Construction package) to confirm if the proposed mitigation is approved.
 3. Additional mitigations for R4 through R5-Plus conditions are noted in [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#). Review all work activity requirements in the matrix before starting work.
- 3.4 When the FPI rating is R4, work personnel must take the following mitigations in addition to the mitigations listed in [Section 2](#), unless otherwise noted in [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#).
 1. Ensure the trailer-mounted water tank, water tender, or other water-delivery/fire-suppression system can reach the immediate location where the spark, fire, or flame may occur.
 2. Ensure all water delivery systems meet the 120-gallon water requirement with not less than 200 feet of hose, not less than 1 inch in diameter, and a pump or water pressure capable of applying a minimum of 40 pounds per square inch (psi) at the nozzle, while in the open position.
 3. Evaluate weather conditions throughout the day to ensure that it remains safe to work, and to confirm that mitigations are appropriate based on the FPI rating.

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4. Assign a **Working** Fire Watch to monitor for fire at the jobsite while performing normal work duties.

- The Working Fire Watch must remain at the jobsite for 30 minutes after work ends.

- 3.5 When the FPI rating is R5 or R5-Plus, work personnel must take one or more of the following mitigations, in addition to the mitigations previously listed, unless otherwise noted in [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#).

1. Ensure that there is a **Dedicated** Fire Watch at the jobsite while performing normal work duties.

- The Dedicated Fire Watch must remain on the jobsite for at least 30 minutes after work ends.

2. Evaluate weather conditions throughout the day to ensure that it remains safe to work.

3. Ensure trailer-mounted water tanks, water tenders, or other water-delivery/fire-suppression systems can reach the immediate location where the spark, fire, or flame may occur.

- When the trailer-mounted water tank or other water-delivery device leaves the jobsite to refill, work personnel must stop work until it returns.

4. **Suspend all planned work during R5-Plus conditions**, as defined in [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#).

5. For any **emergency work** performed in R5-Plus conditions, work personnel **must ensure that one of the following safety measures is in place**:

- 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.

OR

- A Safety and Infrastructure Protection Team (SIPT) **must** be at the jobsite on standby while the work is performed,

4 Vehicle and Helicopter Landing Zone Operations

- 4.1 When traveling to the jobsite, or when operating on unimproved roadways, all work personnel must take the following actions:

1. **Do not drive** off unimproved roadways except when performing required work, or during an emergency. An unimproved roadway is any surface where ground litter and vegetation will sustain combustion permitting the spread of fire.

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2. All vehicles must have one dry chemical fire extinguisher (rated “ABC – multi-purpose use”) in good working order. Supplement the fire extinguisher with the following tools, as required below:
 - a. Passenger vehicles:
 - One round point shovel
 - b. Trucks (1/2 ton or larger) and all-terrain vehicles (ATVs):
 - One round point shovel
 - One 5-gallon backpack pump-type fire extinguisher
 - c. Heavy machinery or equipment (e.g., tractors, tub grinders, whole tree chippers, excavators, bulldozers):
 - One round point shovel.
 - One 5-gallon backpack pump-type fire extinguisher must be in the operating area but not required to be affixed to heavy machinery or equipment.
 - d. Compressed Air Foam Systems (CAFS) may be used as a supplemental extinguishing agent. However, CAFS cannot be a substitute for a 5-gallon backpack pump-type fire extinguisher.
3. While driving off, or parking off, improved roadways maintain situational awareness. Look for potential ignitions that could occur when driving or parked in the vicinity of dry brush, grass, or other vegetation.
4. Whenever possible park vehicles in an area cleared of vegetation (e.g., paved, gravel or cleared to bare mineral soil).
 - a. IF unable to park in a cleared area,

THEN take the following steps:
 - (1) Park on vegetation that has been mowed or cut to a maximum height of 4 inches.
 - (2) Park in such a manner that the tailpipe is not within 36 inches of any standing vegetation.
 - (3) Use a Working Fire Watch until the vehicle exhaust system has cooled, and there is no chance of an ignition.
 - (4) Ensure that the proper fire extinguishing tools are easily accessible.

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- (5) Consider wetting down the parking area.
 5. Turn off the motors of unoccupied vehicles when parked off road unless the vehicle and motor need to remain running for work purposes. Maintain situational awareness for potential ignitions.
 6. When **idling**, the vehicle **must** be parked on a cleared area defined as paved or gravel, or on dirt cleared down to bare mineral soil.
 - a. IF idling and unable to park in a cleared area,
THEN take the following steps:
 - (1) Park on vegetation that has been mowed or cut to a maximum height of 4 inches.
 - (2) Park in such a manner that the tailpipe is not within 36 inches of any standing vegetation.
 - (3) Use a Working Fire Watch while the vehicle is idling.
 - (4) Ensure that the proper fire extinguishing tools are easily accessible.
 - (5) Wet down the area under the vehicle before beginning work, and as needed, to prevent an ignition.
 7. When operating a vehicle with a Diesel Particulate Filter (DPF) system, **always** park on a paved, gravel or bare mineral soil surface, or where vegetation has been mowed or cut to a maximum height of 4 inches. The exhaust system remains extremely hot before, during, and after the regeneration process. An ignition can occur even while the vehicle is off.
- 4.2 When traveling to a landing zone (LZ) all work personnel must take the actions identified in 4.1.
1. All work personnel must take the following actions when constructing an LZ on an unimproved site:
 - Mow or cut vegetation to a maximum height of 4 inches. After cutting to a maximum height of 4 inches, wet down the LZ area for dust mitigation in a diameter consistent to the type and size of helicopter being used per Table 4, in [AVI-3001M, Helicopter Operations Field Manual](#).
 - If unable to mow the vegetation to 4-inches maximum height, use a water delivery system (water tender, water buffalo, etc.) to thoroughly matte down and wet the vegetation in a diameter consistent to the type and size of helicopter being used per Table 4, in [AVI-3001M, Helicopter Operations Field Manual](#).

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Remember to refill the water delivery system so that at least 120 gallons of water are available prior to beginning PG&E work.

- Additional LZ construction information can be found in chapter 4 of [AVI-3001M, Helicopter Operations Field Manual](#).

5 Firefighting Tools and Equipment

5.1 To ensure quick response to an ignition, firefighting tools and equipment must be at the immediate work location and readily accessible.

1. Water Delivery Systems (i.e., Water Buffalos, Water Tender)
 - a. It is recommended to always have a water delivery system on a jobsite.
 - b. At the beginning of the day, before starting work, start and test the water delivery system to ensure it is in good working order.
 - c. When required, the water delivery system must be able to reach the immediate location where the spark, fire, or flame may occur.
 - All water delivery systems must meet the 120-gallon water requirement with not less than 200 feet of hose, not less than 1 inch in diameter, and a pump or water pressure capable of applying a minimum of 40 pounds per square inch (psi) at the nozzle, while in the open position.
 - The hose on the water delivery system must be capable of reaching the immediate jobsite.
 - As part of the tailboard, a person must be assigned to start the pump, if needed.
 - d. Position water delivery system and all other vehicles and equipment to ensure safe egress in the event the crew must evacuate the location quickly. Park vehicles facing the evacuation route.
 - e. At no time will any work personnel be asked to fight any fire beyond their experience or training.
 - f. IF the conditions do not allow water supply access to the worksite,

THEN take the following actions:
 - (1) Consider adding additional hose to extend the reach of water delivery system.

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- (2) When there is a one- or two-person crew, there must be a minimum of one 5-gallon backpack pump-type fire extinguisher and round point shovel at the jobsite.
 - (3) When the number of workers exceeds two, have a minimum of three 5-gallon backpack pump-type fire extinguishers and enough firefighting hand tools so that each employee at the operation can be equipped to fight fire. Stage the firefighting hand tools as close to the immediate worksite as practical.
2. Fire Extinguishers
 - a. All vehicles must have a dry chemical fire extinguisher (rated ABC).
 - b. Use dry chemical fire extinguishers (rated ABC) for flammable liquids, vehicle, or equipment fires.
 - c. Use backpack pumps and other water-based extinguishers for controlling vegetation fires. Dry chemical fire extinguishers have limited effectiveness on vegetation fires.
3. Sealed Box Firefighting Tools
 - a. Sealed box firefighting tools must meet Public Resources Code (PRC) 4428 requirements and must be used for firefighting purposes only.
 - b. All Vegetation Management (VM) Program operations on or near any forest-, brush-, or grass-covered lands must have a sealed box of firefighting tools. VM operations must also have all necessary permits, including, but not limited to, Utility Right of Way Exemption or Timberland Conversion Permits.
 - c. All other functional areas (FAs) are required to have a sealed box of tools **only** during major work operations.
 - A major work operation is defined as a multi-day or multi-week work activity that has an equipment and/or vehicle staging area, and multiple crews coming and going during the course of work. This may include a reconductoring job, transmission pipeline repairs, hydro operation of repairing dams or levees, etc.
 - d. The sealed box of tools must be located, within the operating area, at a point accessible in the event of a fire. The sealed box of tools must contain the following items:
 - One backpack pump type fire extinguisher filled with water.
 - Two axes.

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- Two McLeod fire tools.
- Enough shovels so that each work personnel at the operation can be equipped to fight fire.
- One or more serviceable chainsaw(s) of 3½ or more horsepower, with a cutting bar 20 inches in length or longer shall be immediately available within the operating area. This tool does not have to be in the sealed box but must be within the operating area.

6 Pre-Work Readiness

6.1 When working at the jobsite, all work personnel **must** perform the following actions:

1. While performing stationary ground level jobs or activities from which a spark, fire, or flame may originate (e.g., welding, cutting, grinding), OR when using portable tools powered by an internal combustion engine (portable generators, air compressors, welders, not to include portable powersaws) remove all flammable material (e.g., grass, leaf litter, including snags) down to mineral soil, for a minimum of 10 feet around the jobsite.

- a. IF the ground cannot be sufficiently cleared due to environmental reasons (i.e., riparian zones, sensitive plants, and animals) or erosion concerns, OR IF the work is being performed above ground level (i.e., installation and removal of master grounds on a de-energized transmission line adjacent to an energized transmission line),

THEN perform the following actions:

- (1) Wet down the area around such operation for a minimum of 10 feet and assure to maintain wet conditions for duration of work.

OR

- (2) Cover the flammable vegetation, including snags, with fire blankets, for a minimum of 10 feet around the area.

AND

- (3) IF the FPI rating is R1, R2, or R3,

THEN assign a Working Fire Watch at the jobsite.

- (4) IF the FPI rating is R4,

THEN assign a Working Fire Watch at the jobsite, equipped with at least 120 gallons of water, with at least 200 feet of hose, not less than 1 inch in diameter, and a minimum of 40 psi at the nozzle, while in the open position.

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- (5) IF the FPI rating is R5,

THEN assign a Dedicated Fire Watch, equipped with at least 120 gallons of water, with at least 200 feet of hose, not less than 1 inch in diameter, and a minimum of 40 psi at the nozzle, while in the open position.

7 Electric Operations Requirements

- 7.1 Electric operations organizations should consider performing work de-energized.
- 7.2 For already scheduled and future work scheduling, an environmental assessment of the wildfire risk must be conducted and documented.
- IF the wildfire risk for causing an ignition is too great,
THEN consider performing the work de-energized.
- 7.3 If overhead work is being performed energized in areas of forests-, brush-, and grass-covered lands and the FPI rating is R4 or R5, fuels must be cleared to bare mineral soil in a 15-foot radius and the area within a 50-foot radius below the facility must be wet down prior to beginning work.
- 7.4 A dedicated fire watch is required when performing work on energized overhead equipment under R4 and R5 FPI ratings.

TRANSMISSION LINE SWITCHING REQUIREMENTS

- 7.5 Line switches on 60kV, 70kV, and 115kV lines in Tier 2/3 High Fire Threat District (HFTD) and High Fire Risk Area (HFRA) at ALL FPI Ratings for scheduled, forced and emergency work (including line relay events) should be OPERATED in a **de-energized state**. (Refer to [TD-1400P-07-Att02, Transmission Line Switching, Non-Reclose and EPSS](#), for additional details.)

EPSS SWITCHING REQUIREMENTS

- 7.6 To reduce the risk of ignition during planned switching on Enhanced Power Safety Settings (EPSS) circuits that requires the disablement of EPSS settings, a Safety and Infrastructure Protection Team (SIPT) crew is required for the duration of the disablement to extinguish any unexpected ignition, if one were to occur. (Refer to [TD-1400P-07-Att02-B002, Wildfire Operational Mitigations for Planned Switching](#), for additional details.)

REPLACING FUSES

- 7.7 Before starting to replace fuses, work personnel must ensure that the following are true:
1. The overhead (OH) line is successfully patrolled, and hazards are cleared.
 2. 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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OVERHEAD PATROL REQUIREMENTS

- 7.8 Follow electric distribution and transmission overhead patrol requirements.
- Refer to [Utility Procedure TD-1470P-01, Enhanced Powerline Safety Setting \(EPSS\) Enablement Criteria](#), for information about patrolling and preventing automatic testing in [Fire Index Areas](#) with fire ratings of R4 and above.

8 Reporting Ignitions on the Jobsite

- 8.1 When reporting an ignition on the jobsite, refer to [EMER-4102P-02, Jobsite Ignition Reporting](#). This procedure does not supersede and is not a substitute for the [RISK-6306S, Fire Incident Data Collection Plan and Reporting Standard](#), which requires PG&E to annually report all fire ignitions associated with its electric facilities that meet the criteria specified by the CPUC.

9 Smoking

- 9.1 Smoking (including, but not limited to, cigarettes, cigars, vape pens, etc.) is allowed only when the FPI rating is R1, R2, or R3 AND the following mitigations haven been taken:
- There is a designated smoking location (cleared down to mineral soil) at the jobsite with a 3-foot radius.
 - There is a means to extinguish any potential ignition.
 - There is a water-filled or sand-filled receptacle (e.g., a metal bucket) to extinguish cigarettes, cigars, etc.
 - DO NOT smoke when the utility FPI ratings are R4, R5, or R5-Plus.

10 Quality Reviews

- 10.1 Each organization must have a method to verify work personnel adherence to the requirements of this standard and its attachments.
- The Predictive Solutions SafetyNet Safety Observation Program is an enterprise-wide program that allows leaders to interact with personnel to reinforce positive safety behaviors and increase safety awareness.
 - Organizations should use SafetyNet to conduct EMER-4102S quality reviews.
 - Inspectors should use SafetyNet while performing fire mitigation outlined in this standard.
 - Use the **Wildfire Mitigation** observation card in SafetyNet to perform fire risk mitigation observations.
 - Engage in dialogue with PG&E employees on best practices and gaps.

Preventing and Mitigating Fires While Performing PG&E Work

- 10.2 The regional field safety organizations perform regular, documented safety observations to identify safe and at-risk behaviors, provide immediate guidance and recommendations on how to control/mitigate potential risks, and share best practices identified during the observations with our work personnel.
- 10.3 The document owner of this standard performs enterprise-level trend analysis and develops plans to communicate best practices and address identified gaps with the respective FAs.

END of Requirements

Preventing and Mitigating Fires While Performing PG&E Work

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.

Disking: Using a disc-shaped tool to till soil for vegetation removal.

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

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 use of some equipment and open flames is not permitted.
- **R5-Plus:** The greatest level of fire danger where rapidly moving, catastrophic wildfires are possible. This is, typically, when fire danger is extreme; “plus,” there are high-risk weather triggers (e.g., strong winds). PSPS triggering event is an example.

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

- **Shovel:** A standard, round point shovel, with an overall length of not less than 46 inches.
- **McLeod:** A hand tool used for raking and scraping.
- **Pulaski:** An axe-like fire hand tool used for cutting, chopping, or grubbing.
- **Axe:** A hand tool used for cutting and chopping.
- **Backpack pump:** A portable 5-gallon water pack with a hose and nozzle used to extinguish fires (e.g., collapsible backpacks, plastic or steel tanks).

Fire Weather Watch: A type of forecast 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.

Preventing and Mitigating Fires While Performing PG&E Work

High Fire Threat Districts (HFTD): Areas adopted by the California Public Utilities Commission (CPUC) with elevated or extreme wildfire risk and in proximity to communities at risk.

High Fire Risk Area (HFRA): A purpose-built map for use in scoping Public Safety Power Shutoff events identifying areas where risk factors for the potential of catastrophic fire from utility infrastructure ignition during offshore wind events is higher.

Improved Roadway: Paved, concrete, graveled, and/or maintained dirt roads used by work personnel. These roadways are void of all ground litter and vegetation that may sustain combustion permitting the spread of fire.

Major Work Operations: A multiday or multiweek work activity that has an equipment and / or vehicle staging area, and multiple crews coming and going during the course of work. This may include a reconductoring job, transmission pipeline repairs, hydro operation of repairing dams or levees, etc.

Masticating: Mechanically 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.

Public Safety Power Shutoff: Mitigate the risk of utility infrastructure contributing to catastrophic wildfire risk by proactively de-energizing PG&E facilities in the event of severe weather.

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 (SIPT): This in-house team consists of two-person crews composed of IBEW-represented PG&E employees who are trained and certified safety infrastructure protection specialists. 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.

Sealed Box of Tools: The sealed box of tools required on every vegetation management work activity; major work operations for all other FAs must be located within the operating area and must be reserved for firefighting purposes only. The box that contains the tools can be made of any material or can be in a single compartment on a vehicle, as long as the box can be closed, and it is understood that the tools must not be used for routine work. The box is not required to be locked, in accordance with California Public Resource Code.

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

Preventing and Mitigating Fires While Performing PG&E Work

Unimproved Roadways: Roadways without pavement, gravel, or other surfacing where ground litter and vegetation may sustain combustion permitting the spread of fire. (Ref PRC 4428.)

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

IMPLEMENTATION RESPONSIBILITIES

The Vice President, Emergency Preparedness and Response, is responsible for approving and distributing this standard.

Functional Area Leaders responsible for field and operational teams within the following organizations must ensure that their PG&E employees and contract partners, whose actions could result in igniting a fire, are aware of and comply with this standard (this includes the accompanying attachments, procedures, job aids, and the annually required SAFE-1503WBT training):

- Electric Operations
- Gas Operations
- Power Generation
- Information Technology
- Customer Care
- Shared Services
- Vegetation Management
- Contract Construction
- General Construction
- System Inspections
- Other groups not mentioned above who travel to, perform work, or operate outdoors on or near any forest-, brush-, or grass-covered land.

GOVERNING DOCUMENT

[EMER-02, Fire Prevention and Mitigation Policy](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

[California Department of Forestry and Fire Protection \(CAL FIRE\)](#)

Preventing and Mitigating Fires While Performing PG&E Work

[California Health & Safety Code](#)

[California Public Resources Code – Division 4, “Forests, Forestry and Range and Forage Lands \[4001 - 4958\],” Part 2, “Protection of Forest, Range and Forage Lands \[4101 - 4789.7\],” Chapter 6, “Prohibited Activities \[4411 - 4446\],” Article 2, “Prohibited Activities \[4421 - 4446\]”](#)

[United States Forest Service](#)

Records and Information Management

PG&E records are company assets that must be managed with integrity to ensure authenticity and reliability. Each functional area (FA) must manage records and information in accordance with the Enterprise Records and Information Management (ERIM) policy, standards, and Enterprise Records Retention Schedule (ERRS). Each FA is also responsible for ensuring records are complete, accurate, verifiable, and can be retrieved upon request. Refer to [GOV-7101S, “Enterprise Records and Information Management Standard,”](#) for further records management guidance or contact ERIM at Enterprise_RIM@pge.com.

REFERENCE DOCUMENTS

Developmental References

[CAL FIRE: Wildfire Prevention Engineering Field Guides](#) (click “Power Line Fire Prevention Field Guide” to select the most current field guide)

[National Wildfire Coordinating Group \(NWCG\)](#)

[Numbered Document 015225, “Cutouts, Fuses, and Disconnects for Overhead Distribution Lines”](#)

[United States Department of Agriculture \(USDA\) – Forest Service, Cibola National Forest and National Grasslands: National Fire Danger Rating System](#)

[California Health & Safety Code Division 12, Fires and Fire Protection](#)

[California Public Resources Code – Division 4, “Forests, Forestry and Range and Forage Lands \[4001 - 4958\],” Part 2, “Protection of Forest, Range and Forage Lands \[4101 - 4789.7\],” Chapter 6, “Prohibited Activities \[4411 - 4446\],” Article 2, “Prohibited Activities \[4421 - 4446\]”](#)

[USDA – Forest Service Federal Project Activity Level \(PAL\)](#)

[SAFE-1013S, *Welding, Cutting Safety Standard*](#)

Preventing and Mitigating Fires While Performing PG&E Work

Supplemental References

[AVI-3001M, Helicopter Operations Field Manual](#)

[EMER-4102P-01, Applying EMER-4102S Work Activities Procedure](#)

[EMER-4102P-02 Jobsite Ignition Reporting Procedure \(formerly TD-1464S-JA03\)](#)

[EMER-4102P-01-Att01, Wildfire Mitigation Matrix \(formerly TD-1464S-Att01\)](#)

[TD-1400P-07-Att02, Transmission Line Switching, Non-Reclose and EPSS](#)

[TD-1470P-01, "Enhanced Powerline Safety Setting \(EPSS\) Enablement Criteria,"](#)

[TD-4640P-01, Hot Work Control – Fire Prevention](#)

[RISK-6306S, Fire Incident Data](#)

[SAFE-1001S, PG&E Injury & Illness Prevention Plan \(IIPP\)](#)

[Code of Safe Practices](#)

[Fire Index Areas](#)

[PG&E GIS Department](#)

[Utility Fire Potential Index \(FPI\) Forecast](#)

[PAL Rating Appendix F, Operations and Maintenance Plan for Electric Facilities on National Forest System Lands within the Pacific Southwest Region](#)

APPENDICES

NA

ATTACHMENTS

NA

DOCUMENT REVISION

TD-1464S, *Preventing and Mitigating Fires While Performing PG&E Work*, Rev. 8, 12/16/2022

TD-1464S-Att01, *Wildfire Mitigation Matrix*, Rev 6, 12/16/2022

TD-1464S-Att02, *Wildfire Risk Checklist*, Rev 5, 12/16/2022

TD-1464S-JA01, *Four Step Navigation*, Rev 0, 08/11/2022

TD-1464S-JA02, *Daily FPI Subscription*, Rev 0, 08/02/2022

TD-1464S-JA03, *Calling 911 to Report Ignitions*, Rev 0, 12/16/2022

Preventing and Mitigating Fires While Performing PG&E Work

TD-1464S-JA03, *Translation ES – US*

TD-1464S-B004, Transmission Line Switching in Tiers 2 / 3 HFTD and HFRA

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REVISION NOTES

Where?	What Changed?
	Changes from TD-1464S (Rev 8)
Throughout	General grammar edits for clarity; references to TD-1464 Job Aids and attachments changed to EMER-4102 procedures, job aids, and attachments
Throughout	Changed LOB to FA (Functional Area)
2.1	Added reference to 25 feet of flammable material
2.3	Added third bullet about guidelines in Appendix F
2.7	Added reference to Fire Science
2.8	Moved details to new procedure, see EMER-4102P-01
2.9	New information
2.10	New information
2.11	New information
3.4 #1	Divided paragraph, now #1 and #2 (#3 renumbered as #4)
4	Added “Helicopter Landing Zone” to header
4.2	New information
5.1 #1 c	Updated text; expanded text in first bullet

Preventing and Mitigating Fires While Performing PG&E Work

Where?	What Changed?
5.1 #3 c	Divided paragraph and created bullet
6.1 #1 a (4) and (5)	Added reference to “open position”
7.5	Per Bulletin B004, Added reference to TD-1400P-07-Att02
7.6	Per Bulletin TD-1400P-070Att02-B002, Added SIPT standby
8.1	Created new procedure with details, see EMER-4102P-02
Implementation Responsibilities	Updated second paragraph; updated bullet list
Governing Document	Added reference to Policy, EMER-02
Developmental and Supplemental References	Updated lists
Document Recission	Added list of rescinded documents

2024-06546 Document Routing Request

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Created on: 2/13/2024 4:10:49 PM **Status:** EDR request approved.
Requestor: Benesh, Don **Department:** Emergency Preparedness & Response-ET
Document Type: Standard **Readable by All:** No
Document Title: Preventing and Mitigating Wildfire Standard
Dollar Amount: \$0
Job Order Num:
ITWR Number:
Major Work Category:

Documents		Reviewers/Approvers	
Title	Version	Modify Reviewers/Approvers	
EMER-4102S PrevMitFiresPreWkStd(Rev0).docx	Original	Reviewers	
Consolidate Files		Latipow, Tracey	Approved on 2/14/2024 4:42:40 PM
		Approvers	
		Gibson, Angelina	Approved on 2/22/2024 12:09:47 AM
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Applying EMER-4102S Work Activities Procedure

SUMMARY

This utility procedure establishes work activities for Pacific Gas and Electric Company (PG&E) employees and contract partners to follow when performing work, or operating outdoors on or near any forest-, brush-, or grass-covered land. This includes urban or suburb locations that have vegetation that can sustain combustion permitting the spread of fire.

The information in the procedure supplements the instructions in local, state, and federal fire regulations and permits. If a local or state fire regulation or permit contains requirements more stringent than those in this document, then follow the more stringent requirements.

This procedure does not supersede and is not a substitute for the [RISK-6306S, Fire Incident Data Collection Plan and Reporting Standard](#), which requires PG&E to annually report all fire ignitions associated with its electric facilities that meet the criteria specified by the California Public Utilities Commission (CPUC).

Training (SAFE-1503WBT, “Fire Danger Precautions”) targets work personnel working on or near any forest-, brush-, or grass-covered lands. This training for the target audience is mandatory, generally to be completed annually between January 1 and April 1.

TARGET AUDIENCE

All PG&E employees, and contract partners performing PG&E work which may result in a spark, fire, or flame on or near any forest-, brush-, or grass-covered lands.

PG&E’s workforce, including our contract partners, will be further defined as “work personnel” throughout this procedure.

TABLE OF CONTENTS

SECTION	TITLE	PAGE
1	Subscribe or Unsubscribe for Fire Potential Index Forecast	2
2	Before Starting Work	2

Applying EMER-4102S Work Activities Procedure

REQUIREMENTS

1 Subscribe or Unsubscribe for Fire Potential Index Forecast

See [EMER-4102P-01-JA01, Daily Subscription Job Aid](#), for details.

1.1 To subscribe follow these steps:

1. GO online to <https://weatherprod.ss.pge.com/Notification>.
2. CLICK Sign In.
3. ENTER email address.
4. CLICK the Subscribe button.
5. REPEAT as needed or each for third party.

1.2 To unsubscribe follow these steps:

1. GO online to <https://weatherprod.ss.pge.com/Notification>.
2. CLICK Sign In.
3. ENTER the email address you want to unsubscribe.
4. CLICK unsubscribe button.

1.3 For contractors, please have your PG&E contact sponsor you, following the steps in 1.1 or send a request email to WeatherDeptAdmins@pge.com with the subject "Subscribe to FPI".

2 Before Starting Work

2.1 On or near any forest-, brush-, or grass-covered lands, you must fully read and understand [EMER-4102S, Preventing and Mitigating Wildfires While Performing PG&E Work](#). Refer to [EMER-4102P-01-JA01](#) for additional details.

1. DETERMINE the [Fire Index Area \(FIA\)](#) in which you are working.
 - a. If working in a location without an FIA rating and the area contains forest-, brush-, or grass-covered lands, the following guidelines apply:
 - (1) For areas located within a 5-mile distance of the closest FIA with an [Fire Potential Index \(FPI\)](#) rating, use the FPI rating of the closest FIA.
 - (2) For work areas located farther than 5 miles from an FIA with an FPI rating, follow all R1–R3 general mitigations outlined in this procedure.

Applying EMER-4102S Work Activities Procedure

2. DETERMINE the [FPI](#) rating for the day.
3. IDENTIFY the work activity being performed on [EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#) and implement the required mitigations outlined in the matrix.
4. COMPLETE the Wildfire Risk Assessment.
 - a. Complete [EMER-4102P-01-F01, Wildfire Risk Assessment Form](#) **before** starting work. If work activity or location changes a separate EMER-4102P-01-F01 must be completed.
 - b. Workers must continually assess and proactively address wildfire risks.

END of Requirements

Applying EMER-4102S Work Activities Procedure

DEFINITIONS

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

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 use of some equipment and open flames is not permitted.
- **R5-Plus:** The greatest level of fire danger where rapidly moving, catastrophic wildfires are possible. This is, typically, when fire danger is extreme; plus, there are high-risk weather triggers (e.g., strong winds). PSPS triggering event is an example.

IMPLEMENTATION RESPONSIBILITIES

The Vice President, Emergency Preparedness and Response, is responsible for approving and distributing this procedure.

The Functional Area Leaders responsible for field and operational teams within the following organizations must ensure that their PG&E employees and contract partners, whose actions could result in igniting a fire, are aware of and comply with this procedure (this includes the associated procedures, accompanying attachments, job aids, and the annually required SAFE-1503WBT training):

- Electric Operations
- Gas Operations
- Power Generation
- Information Technology
- Customer Care
- Shared Services
- Vegetation Management
- Contract Construction
- General Construction

Applying EMER-4102S Work Activities Procedure

- System Inspections
- Other groups not mentioned above who travel to, perform work, or operate outdoors on or near any forest-, brush-, or grass-covered land.

GOVERNING DOCUMENT

[EMER-4102S, Preventing and Mitigating Wildfires While Performing PG&E Work.](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

Records and Information Management:

Information or records generated by this procedure must be managed in accordance with the Enterprise Records and Information (ERIM) program Policy, Standards and Enterprise Records Retention Schedule (ERRS). REFER [GOV-7101S, "Enterprise Records and Information Management Standard"](#) and related standards. Management of records includes, but is not limited to:

- Integrity
- Storage
- Retention and Disposition
- Classification and Protection

REFERENCE DOCUMENTS

Developmental References

NA

Supplemental References

SAFE-1503WBT, "Fire Danger Precautions"

Fire Index Areas

APPENDICES

NA

ATTACHMENTS

[EMER-4102P-01-Att01, Wildfire Mitigation Matrix](#)

[EMER-4102P-01-F01, Wildfire Risk Assessment Form](#)

[EMER-4102P-01-JA01, Daily Subscription Job Aid](#)

[EMER-4102P-01 Four Step Navigation \(formerly TD-1464S-JA01\)](#)

Applying EMER-4102S Work Activities Procedure

DOCUMENT RECISION

NA

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REVISION NOTES

Where?	What Changed?
All	New Document

2024-06548 Document Routing Request

Print Cancel Routing View Edit Log

Created on: 2/13/2024 4:16:34 PM Status: EDR request approved.
Requestor: Benesh, Don Department: Emergency Preparedness & Response-ET
Document Type: Procedure Readable by All: No
Document Title: Preventing and Mitigation Fires Procedure -01
Dollar Amount: \$0
Job Order Num:
ITWR Number:
Major Work Category:

Documents		Reviewers/Approvers	
Title	Version	Modify Reviewers/Approvers	
EMER-4102P-01 WkActProc(Rev0).docx	Original	Reviewers	
EMER-4102P-01-Att01 MitigMatrix(Rev0).docx	Original	Latipow, Tracey	Approved on 2/16/2024 9:04:46 AM
EMER-4102P-01-F01 WildfireRiskAss(Rev0).docx	Original	Approvers	
EMER-4102P-01-JA01 FPISub JA (Rev 0).docx	Original	Gibson, Angelina	Approved on 2/22/2024 12:21:33 AM
EMER-4102P-01-JA02 4-StepNavJA(Rev0).docx	Original	Show CC List	
Consolidate Files			

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

*****READ BEFORE STARTING WORK*****

BEFORE starting work on or near any forest-, brush-, or grass-covered lands, all work personnel must review this attachment and assess the required mitigations based on the Utility Fire Potential Index Rating produced by PG&E's Meteorology team (use this link to subscribe).

This "Wildfire Mitigation Matrix" (referred to as "Matrix" from here on) is set up with work activities and activity descriptions listed down the left, and generic mitigations based on the Utility Fire Potential Index Ratings across the top.

Activities requiring additional mitigations are referenced in the corresponding box in blue text.

Refer to [EMER-4102S, Preventing and Mitigating Fires While Performing PG&E Work](#), for detailed information on the general requirements and other mitigations listed in this document.



WARNING

When Red Flag Warnings are in effect, work personnel must perform R5 Fire Potential Index Rating mitigations.



Denotes a work activity that requires general mitigations (**R1**, **R2**, and **R3** Fire Potential Index Ratings mitigations).



Denotes a work activity that requires ALL general mitigations (**R1**, **R2**, and **R3** Fire Potential Index Ratings mitigations) AND the mitigations from **R4**.



Denotes a work activity that requires ALL general mitigations (**R1**, **R2**, and **R3** Fire Potential Index Ratings mitigations), mitigations required for **R4** Fire Potential Index Ratings, AND mitigations required for **R5** and **R5-Plus**.



Denotes the planned work activity that is **not** allowed. Emergency work is exempt.

Blue Text – Denotes mitigations required **in addition** to the respective mitigations listed at the beginning of the matrix.

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

 General Mitigations for R1, R2, and R3 1. Prepare for work (review EMER-4102S, Preventing and Mitigation Fires While Performing PG&E Work). 2. Review the Fire Potential Index Rating each morning during tailboard. 3. Evaluate weather conditions throughout the day to ensure work can be done safely. IF weather conditions warrant, THEN stop work or update mitigations, when necessary (e.g., wet down work area). Tools 4. Jobsite must have enough firefighting tools to outfit all personnel at the operation. 5. Tools and equipment must be located at the immediate location where the spark, fire, or flame may occur. 6. Major work operations must have a sealed box of tools as described in Section 5.1.3 of EMER-4102S, including one serviceable chainsaw that must be immediately available within the operating area and is not required to be in the sealed box. 7. Ensure that the proper tools are available on the vehicles listed below, as described in Section 4.1 of EMER-4102S: • Passenger vehicles: One dry chemical fire extinguisher and one shovel • Trucks/4-wheel drive vehicles (1/2 ton or larger): One dry chemical fire extinguisher, one round point shovel, one 5-gallon backpack pump-type fire extinguisher • Heavy machinery: One dry chemical fire extinguisher, one round point shovel, and one 5-gallon backpack pump-type fire extinguisher (backpack pump extinguisher is not required to be affixed to machinery or equipment) Travel and Vehicles 8. Maintain situational awareness when driving on unimproved roadways. 9. Stationary vehicles (when parked or idling) must be parked safely as outlined in Section 4.1.4 of EMER-4102S. Pework Readiness and Ignition Reporting 10. While performing stationary ground-level jobs or activities from which a spark, fire, or flame may originate (e.g., welding, cutting, grinding), OR when using portable tools powered by an internal combustion engine, all flammable material (e.g., grass, leaf litter, including snags) must be removed down to mineral soil for a minimum of 10 feet around the jobsite. • IF the work is not stationary OR IF the work is being performed above ground, THEN follow the requirements in Section 6.1 of EMER-4102S, Preventing and Mitigation Fires While Performing PG&E Work 11. If there is an ignition on the jobsite, THEN work personnel must follow procedures in EMER-4102P-02, Jobsite Ignition Reporting, even if the fire is extinguished. 12. Smoking is not permitted when the utility FPI ratings are R4, R5, or R5-Plus.	 R4 ratings require all mitigations below, in addition to the mitigations for R1, R2, and R3 ratings: a. 120 gallons of water with not less than 200 feet of hose, not less than 1 inch in diameter, and a minimum of 40 pounds per square inch (psi) at the nozzle while in the open position. This water delivery system must be able to reach the immediate location where the spark, fire, or flame may occur. b. Evaluate weather conditions throughout the day to ensure it remains safe to work and confirm that mitigations are appropriate based on the FPI rating. c. Working Fire Watch assigned to the jobsite, EXCEPT when working with overhead energized equipment, which requires a Dedicated Fire Watch.	 R5 ratings require all mitigations below, in addition to the mitigations for R1, R2, R3, and R4 ratings: a. Dedicated Fire Watch. b. Must have a trailer-mounted water tank or alternative water delivery method with 120 gallons of water with no less than 200 feet of hose not less than 1 in in diameter and a minimum of 40 pounds per square inch at the nozzle while in the open position. This water delivery system must be able to reach the immediate location where the spark, fire, or flame may occur. c. Consider additional modification to the fuel sources surrounding jobsite. d. Suspend all planned work during an R5-Plus fire rating. e. During all emergency work being performed during an R5-Plus fire rating, work personnel must have SIPT on standby or a 300-gallon water tender available that is dedicated to fire suppression..
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Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

Activity Number	Work Activity	Description	R1 / R2 / R3	R4	R5 OR Red Flag Warning	R5-Plus
Vehicle, Roads						
1	Vehicle travel on unimproved roadways	Anything that propels, moves, or is drawn on unpaved surfaces. This includes the transportation of materials.	✓	✓	✓	✓
2	Using heavy equipment	General construction, water bars, culvert cleaning and repair, grading and excavation, digging (e.g., blades, dozers, skid steers, excavators, back hoes).	✓	✓	✓	✗
Uncrewed Aerial Vehicle (UAV)						
3	Uncrewed Aerial System (UAS) Onsite Manual Operation	Data collection of assets utilizing manual flight operations of a UAS.	✓	✓ Crew must have 5-gallon backpack pump (in place of the 120-gallon mitigation), and round-point shovel readily available during all flight operations. When performing flight operations that require flight below the conductor level or operations within a congested area (i.e., crossing lines, guywires, dense vegetation), UAV being flown must be immediately accessible by a working fire watch in the event of a downed UAV.	✓ In addition to R4 restrictions: Flying between parallel conductors is prohibited when less than 60 feet apart (plus drone diameter).	✗

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

Activity Number	Work Activity	Description	R1 / R2 / R3	R4	R5 OR Red Flag Warning	R5-Plus
Electrical and Telecommunications Equipment/Maintenance						
4	Electric equipment repair and replacement (Electric Distribution and Transmission operations, IT / Telecom)	This includes tasks related to conductors, overhead equipment, tower work, and pole replacements from which a spark, fire, or flames may originate. Examples of performing work on an overhead line (energized or not) include, but is not limited to: Replacing a transformer, cross arm, installing secondary service, repairing or replacing fuses or cutouts, opening and closing jumpers (making or breaking loads).		 De- Energized	 De- Energized	
				 <u>Energized:</u> - Fuels cleared to bare mineral soil in a 15-foot radius below the facility. - Wet down a 50-foot radius around work area.	 <u>Energized:</u> - Fuels cleared to bare mineral soil in a 15-foot radius below the facility. - Wet down a 50-foot radius around work area.	
5	Routine work for lone worker or 2-person crews (T-man, Telecom Technician)	This includes installing new services, disconnect and reconnect services, power connections, or installing, removing, and troubleshooting Telecom equipment energized at under 600V, etc.		 Crews must have a 5-gallon backpack pump within 25 feet of the work being performed.		

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

Preventing and Mitigating Fires While Performing PG&E Work

Activity Number	Work Activity	Description	R1 / R2 / R3	R4	R5 OR Red Flag Warning	R5-Plus
Electrical and Telecommunications Equipment/Maintenance						
6	Restoring and testing, Electric operations	Replacing blown fuses.	✓		✓ Must patrol and clear the hazard. Ensure conditions at the base of the pole do not support ignition or the rapid spread of fire.	
7	Switching (distribution/ transmission <115 kV)	Operating equipment (including but not limited to switches, line reclosers, whether SCADA or not, regulators, “operating” fuses and solid blades). Applies to all distribution lines and transmission lines 115kV and below.			✓ If EPSS is enabled on a distribution circuit AND the EPSS settings are expected to remain disabled for greater than an hour, then a SIPT crew is required to support switching activities to extinguish any unexpected ignition. On EPSS enabled transmission circuits that traverse an area with FPI ratings of R3 or above AND EPSS settings are expected to remain disabled for greater than an hour, then a SIPT crew is required to support switching activities to extinguish any unexpected ignition. Transmission lines should be operated in a de-energized state. Field personnel (e.g., qualified electrical workers (QEWs), T-men, etc.) must be at the device before re-energizing the line device for FPI ratings of R2 and above. In certain situations, it may be necessary to operate a transmission line in an energized state. For FPI Rating of R3 and above, a Safety Infrastructure Protection Team (SIPT) Crew must be present and positioned at the device during operation – in addition to field personnel.	

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

Activity Number	Work Activity	Description	R1 / R2 / R3	R4	R5 or Red Flag Warning	R5-Plus
Vegetation Management						
8	Mowing, hot saw, feller buncher, stump grinding, and masticating equipment, Sennebogens, Albachs, and grapple trucks	This does NOT pertain to portable tools noted in Work Activities #14 and #15.	✓	✓	✗	✗
9	Pole/tower ground clearance	10 feet of clearance around poles and tower structure (power tools).	✓	✓ 1 or 2-person crew only	✗	✗
				✓ 3-person crew or more. This work activity is exempt from R5 mitigations during red flag warnings.		
10	Conductor vegetation clearance, Utility line clearance	Trim and, occasionally, remove trees to maintain required, mandated clearances. This includes the associated use of equipment such as chainsaws, woodchippers, and grapple trucks.	✓	✓ 1 or 2-person crew only	✗	✗
				✓ 3-person crew or more. This work activity is exempt from R5 mitigations during red flag warnings.		
11	Harvesting timber on PG&E lands	Harvesting trees for commercial purposes (i.e., logging operations on PG&E owned timberlands) for the purposes of healthy forest management. Work activities include falling trees, chainsaw use, heavy equipment operations, (i.e., log skidding, log decking, loading and hauling). Additionally, fuels management and treatments are conducted in conjunction with this activity.	✓	✓	✓	✗
			Follow conditions and standards outlined in the Timber Harvest Plan. Ensure the mitigations in this matrix are followed based on work performed (e.g., using chainsaws).			

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

Activity Number	Work Activity	Description	R1 / R2 / R3	R4	R5 OR Red Flag Warning	R5-Plus
Other Activities						
12	Construction hot work	Any temporary gas, electric, hydro, power generation operation that involves open flames or produces heat and/or sparks. This includes, but is not limited to, brazing, cutting, grinding, soldering, torch-applied materials, welding , gas purging, plastic squeezing, leak investigation and repair	✓	✓ Wet down a 50-foot radius around work area.	✓ Wet down a 50-foot radius around work area.	✗
13	Using equipment with an internal combustion engine requiring spark Arrestor (excluding vehicles)	This work activity is specific to portable and fixed generators and excludes the use of other portable handheld tools such as chainsaws, leaf blowers, weed eaters, etc. If this activity is using the above noted tools use work activity 14 below.	✓	✓	✓ Unstaffed generators may be used to ensure: 1. Public Safety. 2. Safety and maintenance of company assets. Ensure a clearance of 10 feet down to mineral soil. Onsite water is NOT required.	✗ Exception: Unstaffed generators used to ensure: 1. Public Safety. 2. Safety and maintenance of company assets. Ensure a clearance of 10 feet down to mineral soil. Onsite water is NOT required.
14	Using portable tools powered by an internal combustion engine, power cord	Using any portable saw, auger, drill, tamper, leaf blower, weed eater, and chippers. This excludes activities performed in work activity 9 and 10.	✓	✓	✓	✗
15	Using battery-powered equipment	Using mowers, weed eaters, leaf blowers, drills, survey equipment.	✓	✓	✓	✗
16	Blasting (explosives)		✓	✓ Must follow the mitigations identified in the State Fire Marshall's Use Permit.	✗	✗

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

Activity Number	Work Activity	Description	R1 / R2 / R3	R4	R5 OR Red Flag Warning	R5-Plus
Burning						
17	Open burning	Burning of any brush, stumps, logs, fallen timber, fallows, slash, grass-covered lands, brush-covered lands, or other flammable materials.	 Zone A – Always requires a burn permit and compliance with the permit's terms. Zone A: Includes the following counties: • Mono • Inyo • San Bernardino • Santa Barbara • Ventura • Los Angeles • Orange • Riverside • San Diego • Imperial Zone B – Permit, when required. Zone B: Includes any county and portion of any county that is not included in Zone A.			
Substation						
NOTE: Activities listed below only pertain to situations where there is vegetation near the work being performed.						
18	Activities that can produce arcing, sparks, or fire ≤ 15 feet from inside the substation fence.	Any substation activities.				
19	Activities that can produce arcing, sparks, or fire > 15 feet from inside the substation fence.	Any substation activities.				

Preventing and Mitigation Fires While Performing PG&E Work

Attachment 1, Wildfire Mitigation Matrix

REVISION NOTES

Where?	What Changed?
Before Starting Work, page 1	Clarified definition for 
Throughout	Clarified 5-gallon backpack pump as “backpack pump-type fire extinguisher”
Page 2, TOOLS, #6	Clarified availability
Page 2, JOBSITE and REPORTING, #10	Added reference to portable tools
Page 4, Activity 4	Work Activity Clarified “electric” equipment repair; Description added “opening jumpers, cutouts” and examples
Page 4, Activity 7	Description added text description; merged cells and replaced blue text explanation under all other columns with new exception criteria from TD-1400P-07-Att02, Transmission Line Switching, Non-Reclose, and EPSS; updated blue text to include exception criteria from TD-1400P-07-Att02-B002 Wildfire Operational Mitigations for Planned Switching.
Page 6, Activity 8	Work Activity added Sennebogens, Albach and grapple trucks; deleted blue text explanation under R1/R2/R3
Page 6, Activity 9	R4 and R5 added 1- or 2-person crew only and 3-person crew or more
Page 6, Activity 10	Description added grapple trucks. R4 and R5 added 1- or 2-person crew only and 3-person crew or more
Page 6, Activity 11	Work Activity Description added; color coded check marks added
Page 7, Activity 13	Description updated text
Page 7, Activity 14	Description updated text

Wildfire Risk Assessment Form

Date: _____ Time: _____ Person in Charge (PIC) Name: _____

Work Activity: _____ Person in Charge (PIC) Signature: _____

(Align with activity # in the Work Mitigation Matrix. If Work Activity 4 is chosen, then identify if line is energized or de-energized.)

Work Description: _____

Crew Size: _____ Major Work Operation? ☐ Y ☐ N**WORK LOCATION**

Nearest Address: _____

Cross Street: _____

Latitude: N _____ Longitude: W _____

SAP ID: _____

ENVIRONMENTAL CONDITIONSPG&E Fire Index Area: _____ Fire Potential Index Rating: _____ Red Flag Warning: ☐ Y ☐ NIncombustible Exemption: ☐ Y ☐ N If yes, justification: _____Communications Coverage Confirmation: Radio: ☐ Y ☐ N Satellite Phone: ☐ Y ☐ N Cellular: ☐ Y ☐ N Garmin InReach ☐ Y ☐ N None: ☐

Evacuation Route and Location: _____

FIRE RISK MITIGATIONS – Check based on Fire Potential Index Rating

- ☐ **Vehicles Are Safely Parked** and avoiding any fire hazards.
- ☐ **Vegetation Clearance.**
- ☐ **Additional Vegetation Fuel Modifications** (e.g., mowing, wetting down the burn fuel at jobsite and parking area).
- ☐ **Fire Blanket, Welding Blanket or tent** is being used on the jobsite.
- ☐ **Working Fire Watch** is assigned on the jobsite. ☐ **Dedicated Fire Watch** is assigned on the jobsite.
- ☐ **Fire Extinguisher** located within 25 ft of jobsite.
- ☐ **Water Delivery System** with 40 lbs. psi at the nozzle in open position and 200 ft of 1-inch diameter hose on the jobsite, tested and readily available.
- ☐ **Additional:** _____

FIRE SUPPRESSION TOOL INVENTORY

- | | | |
|---|---|---|
| ☐ Backpack-style water extinguisher (How Many ?) | ☐ Shovel (# ?) | ☐ Water Buffalo (# ?) |
| ☐ Pressurized water extinguisher with foam (CAFS) (# ?) | ☐ Pulaski (# ?) | ☐ Axe (# ?) |
| ☐ 2A10BC Fire Extinguisher(s) (# ?) | ☐ McLeod (# ?) | ☐ Other: |
| ☐ Fire Extinguishers current certification from CASFM (# ?) | ☐ Sealed box of tools | |

Wildfire Risk Assessment Form**REVISION NOTES**

Where?	What Changed?
Title	Name changed to "Form"
All	Reconciled to Field App

Jobsite Ignition Reporting Procedure

SUMMARY

Utility Standard [EMER-4102S, Preventing and Mitigating Fires While Performing PG&E Work](#), requires that all Pacific Gas and Electric Company (PG&E) work related ignitions must be reported to the fire “Authority Having Jurisdiction” (AHJ). All ignitions, even those that are successfully and completely extinguished by PG&E employees and contract partners, must be reported to the AHJ. The easiest and most effective way to report an ignition is to call 9-1-1.

This procedure does not supersede, nor is a substitute for the [RISK-6306S, Fire Incident Data Collection Plan and Reporting Standard](#), which requires PG&E to annually report all fire ignitions associated with its electric facilities that meet the criteria specified by the California Public Utilities Commission (CPUC).

Level of Use: Informational Use

TARGET AUDIENCE

All PG&E employees and contract partners performing PG&E work, which may result in a spark, fire, or flame on or near any forest-, brush-, or grass-covered lands.

PG&E’s workforce, including our contract partners, will be further defined as “work personnel” throughout the procedure.

SAFETY

NA

BEFORE YOU START

NA

TABLE OF CONTENTS

SUBSECTION	TITLE	PAGE
1	To Report an Ignition.....	2

Jobsite Ignition Reporting Procedure

PROCEDURE STEPS

1 To Report an Ignition

1.1 When fires ignite on the jobsite, work personnel must perform the following actions:

1. CALL emergency services (9-1-1) to report the ignition, **even if the fire has been fully extinguished**. Be prepared to report the following information:
 - Incident type and brief description (including impacted assets)
 - Any injuries
 - Location (address/city, cross street-landmark identifiers, latitude and longitude, best access route)
 - Hazards in the area (i.e., bridges or powerlines)
 - Fire size/fuel type (including estimated rate of spread)
2. TAKE SAFE, reasonable suppression actions consistent with PG&E 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 Hazard Awareness and Warning Center (HAWC) at 1-800-255-7593 to report the fire. The jobsite supervisor must include the following information, at a minimum:
 - Location (address/city, cross street-landmark identifiers, latitude and longitude, best access route)
 - Source of ignition
 - Impacted assets
5. Jobsite work personnel **must** REPORT incidents to their direct supervisors, and follow any additional reporting procedures, as required (e.g., notify Control Centers).

END of Instructions

Jobsite Ignition Reporting Procedure

DEFINITIONS

NA

IMPLEMENTATION RESPONSIBILITIES

The Vice President, Emergency Preparedness and Response, is responsible for approving and distributing this procedure.

Functional Area Leaders responsible for field and operational teams within the following organizations must ensure that their PG&E employees and contract partners, whose actions could result in igniting a fire, are aware of and comply with this procedure (this includes the associated procedures, accompanying attachments, job aids, and the annually required SAFE-1503WBT training):

- Electric Operations
- Gas Operations
- Power Generation
- Information Technology
- Customer Care
- Shared Services
- Vegetation Management
- Contract Construction
- General Construction
- System Inspections
- Other groups not mentioned above who travel to, perform work, or operate outdoors on or near any forest-, brush-, or grass-covered land.

GOVERNING DOCUMENT

[EMER-4102S, Preventing and Mitigating Fires While Performing PG&E Work](#)

COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

Records and Information Management:

Information or records generated by this procedure must be managed in accordance with the Enterprise Records and Information (ERIM) program Policy, Standards and Enterprise Records Retention Schedule (ERRS). REFER [GOV-7101S, Enterprise Records and Information Management Standard](#) and related standards. Management of records includes, but is not limited to:

Jobsite Ignition Reporting Procedure

- Integrity
- Storage
- Retention and Disposition
- Classification and Protection

REFERENCE DOCUMENTS

Developmental References:

NA

Supplemental References:

[RISK-6306S, Fire Incident Data Collection Plan and Reporting Standard](#)

APPENDICES

NA

ATTACHMENTS

[EMER-4102P-02-Att01, Spanish Language Version](#)

DOCUMENT RECISION

NA

DOCUMENT APPROVER

Angie Gibson, Vice President, Emergency Preparedness & Response

DOCUMENT OWNER

Mike Weaver, Public Safety Specialist, Expert

Beth Neilson, Emergency Management Specialist, Expert

DOCUMENT CONTACT

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REVISION NOTES

Where?	What Changed?
NA	New Procedure

Jobsite Ignition Reporting Procedure

2024-06550 Document Routing Request

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Created on: 2/13/2024 4:23:21 PM **Status:** EDR request approved.
Requestor: Benesh, Don **Department:** Emergency Preparedness & Response-ET
Document Type: Procedure **Readable by All:** No
Document Title: Reventing and Mitigating Fires Procedure -02
Dollar Amount: \$0
Job Order Num:
ITWR Number:
Major Work Category:

Documents		Reviewers/Approvers	
Title	Version	Modify Reviewers/Approvers	
EMER-4102P-02 IgnRptProc(Rev0).docx	Original	Reviewers	
EMER-4102P-02-Att01 ES-US (Rev0).docx	Original	Latipow, Tracey	Approved on 2/16/2024 9:01:11 AM
Consolidate Files		Approvers	
		Gibson, Angelina	Approved on 2/22/2024 12:23:14 AM
		Show CC List	