

Preventing and Mitigating 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 [Utility Standard TD-1464S, "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.

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<p>General Mitigations for R1, R2, and R3</p> <ol style="list-style-type: none"> 1. Prepare for work (review standard, matrix, and checklist). 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). <p>TOOLS</p> <ol style="list-style-type: none"> 4. Jobsite must have enough tools to outfit all crew members at the operation. 5. Tools and equipment must be located at the immediate work location. 6. Major work operations must have a sealed box of tools as described in Section 5.1.3, 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: <ul style="list-style-type: none"> • 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 (not required to be affixed to machinery or equipment) <p>TRAVEL and VEHICLES</p> <ol style="list-style-type: none"> 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 the standard. <p>JOBSITE AND REPORTING</p> <ol style="list-style-type: none"> 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. <ul style="list-style-type: none"> • IF the work is not stationary OR IF the work is being performed above ground, THEN follow the requirements in Section 6.1 of Utility Standard TD-1464S. 11. If there is an ignition, THEN work personnel must call emergency services (9-1-1) to report it, even if the fire is extinguished. <ul style="list-style-type: none"> • Call the HAWC at 1-800-255-7593 with the location, source, and impacted assets. • Do not smoke, unless there is a 3-foot cleared area (down to mineral soil), an extinguishing agent, and butt receptacle with water in the smoking area. 	<p>R4 ratings require all mitigations below, in addition to the mitigations for R1, R2, and R3 ratings:</p> <ol style="list-style-type: none"> 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. This water delivery system must be able to reach the immediate work location. b. Evaluate weather conditions to ensure it remains safe to work. c. Working Fire Watch assigned to the jobsite, EXCEPT when working with overhead energized equipment which requires a Dedicated Fire Watch. 	<p>R5 ratings require all mitigations below, in addition to the mitigations for R1, R2, R3, and R4 ratings:</p> <ol style="list-style-type: none"> a. Dedicated Fire Watch. b. Must have a trailer-mounted water tank or alternative water delivery method with a hose long enough to reach the jobsite. 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.

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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.	✓	✓	✓	✗
Unmanned Aerial Vehicle (UAV)						
3	Unmanned Aerial Vehicle (UAV) Line of Sight (LOS)	Comprehensive data collection within line of sight of UAV.	✓	✓ 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, guy wires, 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).	✗

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Electrical and Telecommunications Equipment/Maintenance						
4	Electric equipment repair and replacement (Electric operations, IT / Telecom)	<p>This includes tasks related to conductors, pole overhead equipment, tower work, and pole replacements from which a spark, fire, or flames may originate.</p> <p>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, or opening and closing jumpers.</p>	✓	<p style="text-align: center;">✓</p> <p style="text-align: center;"><u>De-Energized</u></p> <hr/> <p style="text-align: center;">✓</p> <p style="text-align: center;"><u>Energized:</u></p> <ul style="list-style-type: none"> • Dedicated Fire Watch. • Fuels cleared to bare mineral soil in a 15-foot radius below the facility. • Wet down a 50-foot radius around work area. 	<p style="text-align: center;">✓</p> <p style="text-align: center;"><u>Energized:</u></p> <ul style="list-style-type: none"> • 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)	<p>This includes installing new services, disconnect and reconnect services, power connections, or installing, removing, and troubleshooting Telecom equipment energized at under 600V, etc.</p>	✓	✓		✗
				<p>Crews must have a 5-gallon backpack pump within 25 feet of the work being performed.</p>		

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Electrical and Telecommunications Equipment/Maintenance						
6	Restoring and testing, Electric operations	Replacing blown fuses.	✓	<div style="text-align: center;">✓</div> <p style="text-align: center;">Must patrol and clear the hazard.</p> <p style="text-align: center;">Ensure conditions at the base of the pole do not support ignition or the rapid spread of fire.</p>		
7	Switching	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.	<div style="text-align: center;">✓</div> <p style="text-align: center;">In the rare event where a de-energized <u>transmission line switching</u> operation cannot be performed in alignment with the expectations outlined in TD-1464S Section 7.5 – 7.8, the following exception criteria applies:</p> <ul style="list-style-type: none"> • A Transmission Grid Control Center Operations Supervisor must review and approve the proposed energized switching operation • Field Personnel must be on the scene of the device location prior to and throughout the device operation • A Safety Infrastructure Protection Team (SIPT) Crew must be on the scene of the device location prior to and throughout the device operation • Field Personnel and the SIPT Crew must have appropriate Fire Suppression tools set up at the switch location AND be in a readiness position to extinguish an unexpected ignition, should one occur 			

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Vegetation Management						
8	Mowing, hot saw, feller buncher, stump grinding, and masticating equipment, Sennebogens and Albachs	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 or woodchippers.	✓	✓ 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).		

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Other Activities						
12	Construction hot work	Any temporary 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, and welding.	✓	✓ 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 includes portable and fixed generators. This activity excludes portable powersaws.	✓	✓	✓ 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.	✗ <u>Exception:</u> 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 leaf blowers, weed eaters, drills, saws, mowers, chippers not related to conductor clearance and similar tools with engine or motor. This activity excludes portable powersaws (chainsaws).	✓	✓	✓	✗
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.		✗	✗

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Burning						
17	Open burning	Burning of any brush, stumps, logs, fallen timber, fallows, slash, grass-covered lands, brush-covered lands, or other flammable materials.	<p>Zone A – Always requires a burn permit and compliance with the permit’s terms.</p> <p>Zone A: Includes the following counties:</p> <ul style="list-style-type: none"> • Mono • Inyo • San Bernardino • Santa Barbara • Ventura • Los Angeles • Orange • Riverside • San Diego • Imperial <p>Zone B – Permit, when required.</p> <p>Zone B: Includes any county and portion of any county that is not included in Zone A.</p>	✗	✗	✗
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.	✓	✓	✓	✗

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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 September 2022 5MM “Transmission Line Switching in Tier 2/3 High Fire Threat District and High Fire Risk Areas during Fire Season”
Page 6, Activity 8	Work Activity added sennebogens and albach; 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	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 with exclusion to portable powersaws