



***Pacific Gas and  
Electric Company®***

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# Extreme Weather Annex to the Company Emergency Response Plan

*Information that is specific to the Functional Area/Annex is contained in this Annex. Information that is consistent across the company is in the base company plan. Links to the base company plan may be included in the Annex, if needed, and are indicated as a hyperlink in this document.*

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Tel: (415) 973-7000  
<http://www.pge.com>

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## Document Control

Emergency Preparedness and Response - Strategy and Execution (EP&R S&E) maintains this *Extreme Weather Annex*. This section records the revisions made to the *annex*, the coworkers responsible for its preparation, maintenance, review, updates, and approval.

## Change Record

Use the following table to record all changes made to this document. It describes the locations of the revisions, the names of the coworker responsible for the revisions, and the revisions made.

Section	Person Responsible for Revision	Change	Date
Throughout		Removed electric capacity shortage risk analysis and response content in lieu of upcoming CERP capacity shortfall annex planning.	9/30/24
Throughout		Changed 'Rain' title to "Heavy Precipitation."	10/1/24
Reference Documents		Added TD-2917P-01, Temperature Alarm Device Installation; LAND-1300S, ET GIS LiDAR Standard; and OMT User Manual.	8/13/24
1.4	Angie Gibson	Added "Unique Response Elements" subsections to subsection 1.4.	11/7/24
1.4		Added extreme weather hazard and risk details developed as part of versions 1 and 2 rain, mainstem river flooding, low snow, heat, lightning, and wind analysis. Also, added 2023 Tulare Lake snow melt related flood details.	9/30/24
1.4.1		Added new risk aligned subsection identifying response elements unique to each extreme weather category	9/30/24
1.4.1		Added reference to Electric Transmission and Distribution TIL for 12 snow loading maps.	10/1/24
2.2		Added "Scaled DSR, OEC, REC and EOC Organization" subsection content per <a href="#">EMER-3002M-Electric Annex.pdf</a> subsection 2.3	7/16/24
2.2		Moved former subsection 4.1, Scaled DSR, OEC, REC and EOC Activation	9/30/24

Section	Person Responsible for Revision	Change	Date
		content to Section 2, Emergency Organization and Responsibilities.	
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4.1		Replaced former subsection 5.3 “Electric Operations Response and Restoration” performance indicators with GO 166 standard 6, 7, 12 and 13 requirements for initial notification, mutual assistance evaluation, electric service restoration and call center activities.	9/30/24
4.4		Added Safety Net subsection.	9/20/24
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5.1.2		Added Sustained Outage definition per EMER-3002M-Electric Annex subsection 6.6.	7/16/24
5.1.2		Added DSO SOPP model output content per <a href="#">new DSO SOPP 5MM.pdf</a> transmittal and communication.	7/26/24
5.1.2		Updated DSO SOPP output examples per <a href="#">DSO SOPP Viewer Page (pge.com)</a> .	7/26/24
5.1.3		Noted Geosciences situational awareness coordination with HAWC.  Expanded the scope of precipitation and slope failure map dissemination to include proximity to all PG&E assets or facilities.  Amended the Warning explanation and added other hazards beyond debris flows.	7/31/24

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5.1.4		Added OMT description per <a href="#">EMER-3002M-Electric Annex</a> subsection 1.4.4.2.	7/16/24
5.1.4.1		Added Qualified Electrical Worker (QEW) Resource Status (Troubleshooters and Crews) subsection.	7/16/24
6.2		Replaced MYTEP reference with link to <a href="#">2024-2026 EMER-2502M-Intergrated Preparedness Plan</a> .	7/16/24
Figure 1-2		Changed graphic titles so all reference 'Areas'; changed 'Rain' title to "Heavy Precipitation." Also, matched lower right map to others, with expanded box showing Coast Valley and Los Padres map example.	10/1/24
Figure 1-7		Replaced Coast Valley and Los Padres map example with Sierra Division map copied from the TIL.	10/1/24
Appendix B		Added Tsunami to Geoscience WSAC checklist items.	7/31/24
Appendix C		Updated playbook to align with T-96, T-72, T-48, and T-24 extreme weather preparedness actions.	9/17/24
Appendix C		Updated playbook to include FA T-96, T-72, T-48, and T-24 actions discussed at and subsequent to 9/17/24 SME coordination meeting.	9/19/24
Appendix C, Electric Field Operations, All Regions, T-96 to T-24 hours		Removed internal EFO EMS Duty Officer phone number.	9/23/24
Appendix C, EFO EMS, T-96 to T-24 hours		Added identify operational impact potential and advise electric emergency centers (i.e., REC, OEC) on readiness capabilities. Removed identify OEC and REC statuses.	9/23/24
Appendix C, EFO EMS, T-72 and T-24 hours		Removed reference to IMT deployments per EMER-4501S.	9/23/24
Appendix C, EFO EMS, T-24 hours		Added advise emergency centers on activation triggers per EMER-4510S and 4510P, deliver as required OMT training,	9/23/24

Section			Date
		and provide in person support to emergency centers.	
Appendix C, EP&R, T-96 to T-24 hours		Added identify OEC and REC statuses.	9/30/24
Appendix C, Vegetation Management, T-96 to T-24 hours		Added as applicable, establish downed tree task force capability.	10/1/24
Appendix C, Aviation, T-96 to T-24 hours		Added as applicable, establish post lightning aircraft patrol capability.	10/1/24
Appendix C, EP&R, T-72 to T-24 hours		Added reference to IMT deployments per EMER-4501S.	9/30/24
Appendix D		Updated Response Element table.	10/1/24
Appendix D		Moved table 1-1 "Response Elements" to new Appendix D.	11/12/24

## Recision Log

Document Number	Title
EMER-3108M	Extreme Weather Annex, v2, published in 2023

## Reference Documents

Document Number	Title
AH-1000S	PG&E Hazard Awareness & Warning Center Standard Operating Procedures
LAND-1300S	ET GIS LiDAR Standard
AVI-3001M	Helicopter Operations Field Manual
AVI-3008M	Contractor Helicopter Manual
EMER-2001S-F01	Change Request Form
EMER-3001M	Company Emergency Response Plan (CERP)
EMER-3002M	Electric Annex to the CERP

Document Number	Title
NA	<a href="#">PG&amp;E Annual EEP 2024 v30 (Public).pdf</a>
EMER-3108M-Att01	Electric Storm Readiness Agenda
EMER-4501S	Framework for Electric Incident Management Teams Standard
EMER-4510S	Operations Emergency Center (OEC) Activation Requirements
EMER-7001S	Enhanced Customer and Community Support During All Hazards Standard
EMER-7001P-05	All-Hazards Community Resource Center (CRC) Deployment Procedure
TD-1002P-01	Aerial Lifts – Entering and Exiting at Heights
TD-2060P-09	Mapping Activities During Emergencies
TD-2060P-09-F1	Mapping Event Checklist
TD-2700P-23	Operational use of Temporary Generator on Distribution Primary Lines
TD-2336M Rev. 1	Electric Distribution Supervisor Manual
TD-2424P-01	<a href="#">Distribution Transformer Operations</a>
PG-2765S	Hydro Emergency Action Plan (EAP) Program Standard
TD-4110S	Gas Leak Survey and Detection Program
TD-4412P-07-JA01	Identification of Common Geohazards
TD-4435S	Gas System Curtailment Requirements
TD-4435P-01	Extreme Weather-Related Gas Service Curtailment Procedure
TD-4814S	Gas Transmission Heavy Rainfall Response Standard
TD-4814P-01	Gas Transmission Heavy Rainfall Preparation and Response
TD-2917P-01	Temperature Alarm Device (TAD) Installation
CUST-10000P-06	<a href="#">Safety Net Electric Reliability Procedure (#1 of 6)</a>
NA	<a href="#">Outage Management Tool User Manual</a>
CPUC Decision 20-08-046	Climate Change Vulnerability Assessments and Climate Adaptation in Disadvantaged Communities

## Document Preparer

Name	Position
	Emergency Management Specialist, Expert

Name	Position
[REDACTED]	Technical Writer, Expert

## Document SME Reviewers

Name	Position
[REDACTED]	Senior Meteorologist, Meteorology Operations & Analytics
	Supervisor, Electric Distribution, Field Operations North
	Senior Director, Central Estimating, Electric Engineering
	Director, General Construction, Electric Distribution
	Superintendent, Field Operations - San Francisco Division
	Supervisor, Electric Distribution – Field Operations South
	Supervisor, Restoration, Central Coast Field Operations
	Director, Electric Distribution - Bay/Central
	Senior Director, Electric Distribution, Field Operations - Bay Area
	Supervisor, Contract Construction – Central Valley
	Geosciences Consultant, Principal
Annabelle Louie	Vice President, PG&E Operations Support
[REDACTED]	Chief of Staff & Manager, Electric System Operations (ESO) Programs
	Superintendent, Electric Distribution, Field Operations – Los Padres Division
	Superintendent, Electric Distribution – Stockton Division
	Distribution Supervisor, Electric Distribution, Field Operations North
	Supervisor, Emergency Management
	Superintendent, Electric Distribution - Bay Area Region
	Director, Field Operations South
Ronald Richardson	Vice President, North Coast Region
[REDACTED]	Manager, Hazard Awareness and Warning Center
Rod Robinson	Vice President, Electric System Operations
[REDACTED]	Senior Director, Electric Distribution Field Operations - Central Valley



Name	Position
	Principal, Supply Chain Emergency Management, Materials Distribution Operations
	Superintendent, Field Operations, Sierra Division
	Superintendent, General Construction, Transmission & Distribution – Central East
	Senior Manager, Emergency Field Operations
	Seismologist, Expert Geosciences
	Construction Manager, Principal, Electric Engineering
	Principal, Supply Chain Emergency Management, Materials Distribution Operations
	Principal, Customer Emergency Operations
	Senior Manager, Electric Distribution Operations Support
	Director, Distribution Control Center, Electric System Operations
	Director, Gas Control, System Operations & Maintenance

## Document Owner

Name	Position
	Manager, Emergency Planning, Emergency Preparedness & Response (EP&R) Strategy and Execution
	Director, EP&R Response and Operations

## Document Approvers

Name	Position
	Director, EP&R Response and Operations
Angie Gibson	Vice President, EP&R

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## Change Request Form

To request changes, corrections, or additions to this *Annex*, the [Company Emergency Response Plan \(CERP\)](#) (EMER-3001M), or other associated annexes, submit a request through the [online change request](#).

Proposed changes are significant when they affect the emergency organizational structure, critical operations, key facilities, or execution of the plan; the information will be published by a bulletin to the *CERP* or *Annex*. Minor changes will be saved and addressed during the next document update.

Once the bulletin is communicated, a copy will be placed under the respective annex located in the [Guidance Document Library \(GDL\)](#) and included as content in the next *Extreme Weather Annex* update.



# 1. Introduction

## 1.1 Overview

The Extreme Weather Annex has been developed based on technical and operational analysis and expertise from across the PG&E enterprise. This annex provides PG&E's concept of operations for responding to seven extreme weather scenarios (e.g., heavy precipitation, mainstem river flooding, low snow, heat, lightning, and wind).

Understanding pre- and post-incident actions enables PG&E's response to extreme weather incidents. This document captures PG&E subject matter expert (SME) insight on extreme weather response, including resource, access, and outage restoration strategies, customer support requirements, and industry best practices.

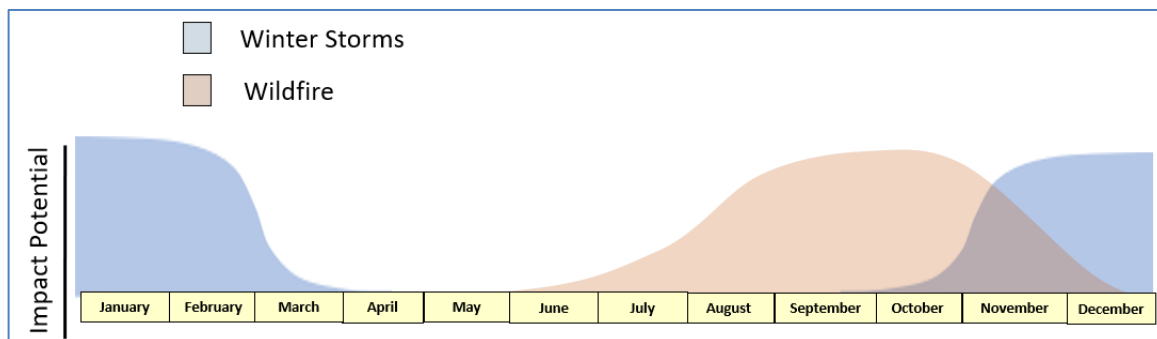
This Extreme Weather Annex is a "Hazard Annex" under EMER-3001M [Company Emergency Response Plan \(CERP\)](#).

## 1.2 Purpose

During emergency incidents, PG&E coworkers must respond safely, efficiently, and effectively. PG&E extreme weather response requires a clear understanding of internal operational and customer support requirements.

Weather conditions within PG&E's service area follow a predictable annual pattern with late summer or fall warm and dry conditions leading to a winter rainy season Figure 1-1. This predictability helps to inform the potential for discrete extreme weather responses from week to week and month to month across the service area.

**Figure 1-1: Annual Weather Pattern**



As most extreme weather incidents provide advanced warning, certain actions can be taken beforehand to minimize or eliminate impacts to PG&E customers and communities. This Extreme Weather Annex provides a time-phased concept of operations to restore gas and electric services.

## 1.3 Scope

*EMER-3108M CERP Extreme Weather Annex* includes unique characteristics and challenges presented by heavy precipitation, flooding, low snow, heat, thunderstorms and lightning, and wind.

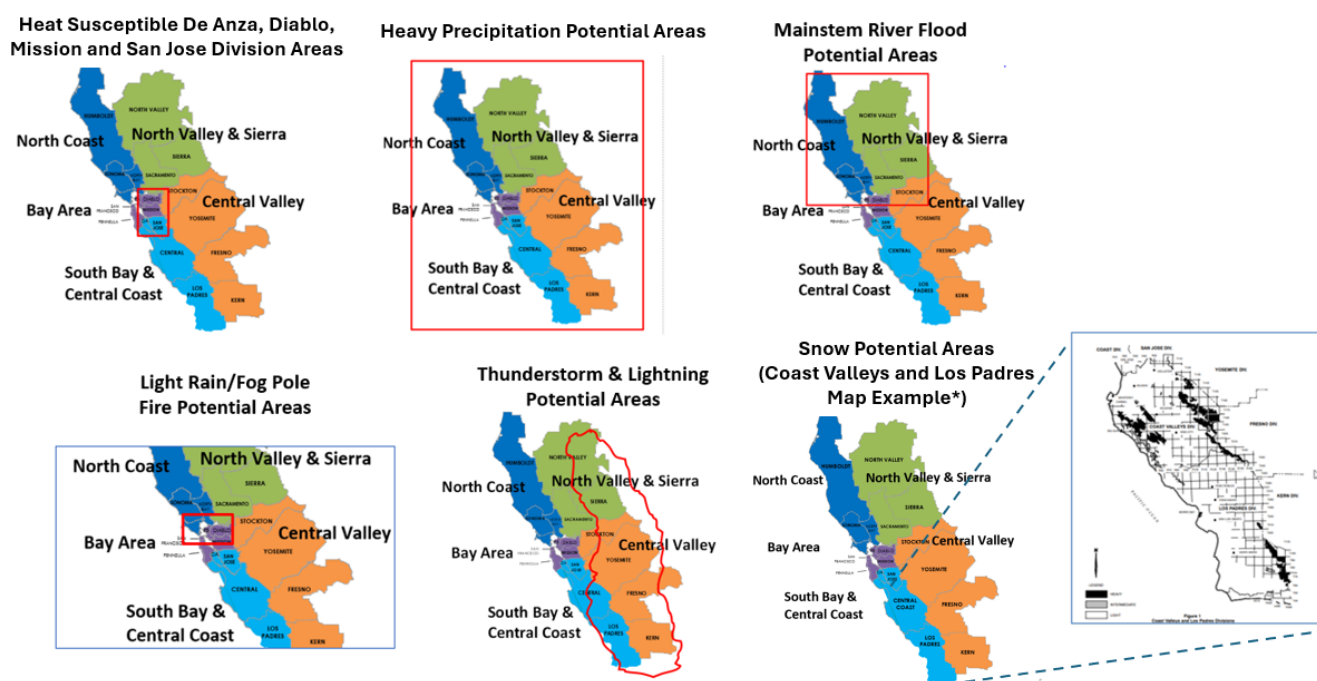
## 1.4 Extreme Weather Hazards and Risks

The product of feedback from SMEs (see *Document SME Reviewers*) across the enterprise, PG&E extreme weather planning assumptions included service area impact locations, potential consequences, and unique hazard or risk response elements.

### 1.4.1 Impacts to the Service Area and Unique Response Elements

Figure 1-2 identifies PG&E service areas at greater risk to heat, heavy precipitation, light rain/fog, mainstem river flooding, thunderstorm, and lightning. Wind and heat-related capacity shortage potential exists throughout the service area. Low snow potential exists within Sierra Nevada Mountain lower elevations and foothills, lower Cascade Mountains, and coastal mountains to the north and south of the Bay Area. High winds often occur concurrent with heavy precipitation from December through March. Specific details follow.

**Figure 1-2: Geographic Areas with High Risk**



Additional snow loading maps for the locations identified below can be found in the Electric Transmission and Distribution Technical Information Library (TIL) at [Snow Loading Map](#).

- Vaca Valley and Sierra Divisions
- North Valley Division
- Sierra Division
- San Francisco, Skyline, Bay, Central, Diablo, and Mission Divisions
- Humboldt Division
- Russian River, North Bay, and Vallejo/Napa Divisions
- Sacramento, Sierra, and Vaca Valley Divisions
- Yosemite, Fresno, and Kern Divisions

- Peninsula, De Anza, Coast, and San Jose Divisions
- North Valley Division
- Stanislaus and Stockton Divisions

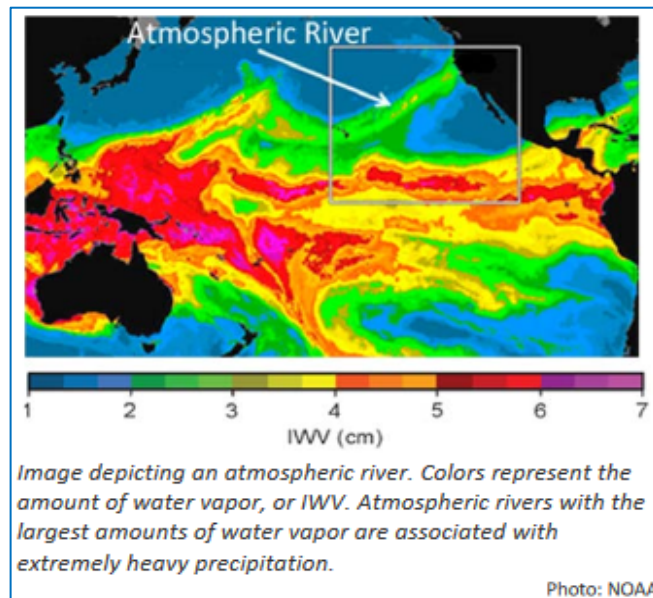
### 1.4.2 Precipitation

On average, California receives 75 percent of its annual precipitation from November through March, with 50 percent occurring from December through February.

- Warmer ocean temperatures often deliver moisture from the tropics directly to California via long, narrow bands of water vapor called Atmospheric Rivers (Figure 1-3).<sup>1</sup> Measuring up to 1,000 miles long and 250 to 370 miles wide, Atmospheric Rivers associated with *El Niño* Southern Oscillation patterns provide on average 30 to 50 percent of California's annual precipitation and 40 percent of the Sierra Nevada snowpack.

**Figure 1-3: Atmospheric Rivers**

Measured in centimeters, Integrated Water Vapor (IWV) is the amount of water vapor in an atmospheric column expressed as the depth of water if that vapor were condensed.

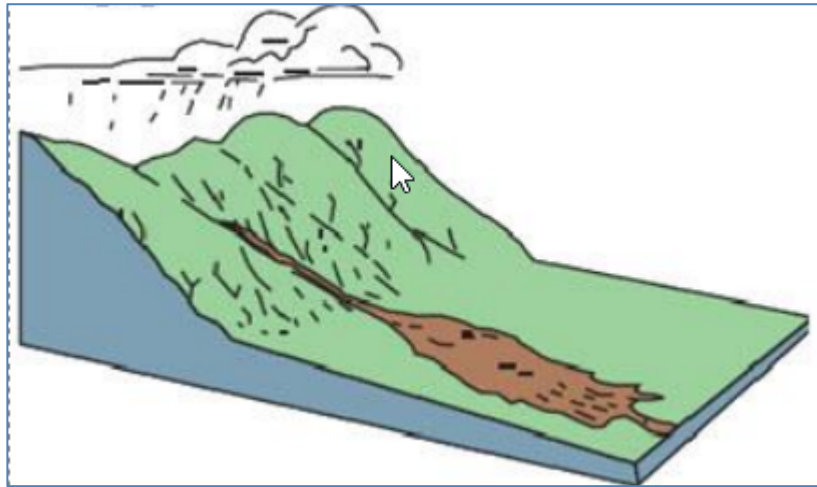


- Due to the copious amounts of moisture carried aloft, atmospheric rivers can result in significant damage to PG&E assets and infrastructure.
- Whether in an *El Niño* or *La Niña* climate pattern, the high terrain of the Coast Range and the Sierras tend to receive the most precipitation each year. Generally, Northern California experiences more precipitation than Southern California.

<sup>1</sup> A link to PG&E Meteorology Operations & Analytics current atmospheric water vapor display can be found at [Infrared Satellite Water Vapor Display](#).

- Depending on slope and topography, heavy precipitation may prompt landslides and debris flows<sup>2</sup> (Figure 2-4), especially along streams and drainages in the Coast Range and Sierra foothills.

**Figure 1-4: Debris Flow**



- Wildfire Burn Areas are particularly susceptible to unusual debris flows with the onset of winter rains and hydrophobic soils in fire damaged watersheds. One inch per hour or greater rain events can create the potential for debris flows in vegetation denuded, hydrophobic post wildfire watershed soils.<sup>3</sup>
- Light rain or fog can cause flash over pole fires within the Bay Area and other parts of the service area including the Central Valley.

#### 1.4.2.1 Unique Response Elements

- Heavy precipitation can result in ground saturation resulting in an increase in tree failure outages.
- Slope instability can become a risk during periods of heavy precipitation. During these situations it's important to engage Geoscience who can respond to the field and support ground movement hazard assessment.
- Flash over activity is seasonal in many areas. For example, the heavy fog that can occur in the East Bay in June. To prepare for the risk of flashovers consider,
  - Conducting insulator washing prior to the at-risk period.

<sup>2</sup> Debris flows are defined in TD-4412P-07-JA01, Identification of Common Geohazards, as a form of rapid mass movement in which a combination of loose soil, rock, organic matter, air, and water mobilize as a slurry that flows downslope.

<sup>3</sup> Wildfire Burn Area Debris Flow maps are available on the [Geoscience SharePoint](#) site. For additional wildfire related debris flow information, see the *Wildfire Annex* (EMER-3105M) in the PG&E Guidance Document Library, at



- Staffing additional 911 Standby resources to support the increase in 911 calls requiring response by public safety agencies.

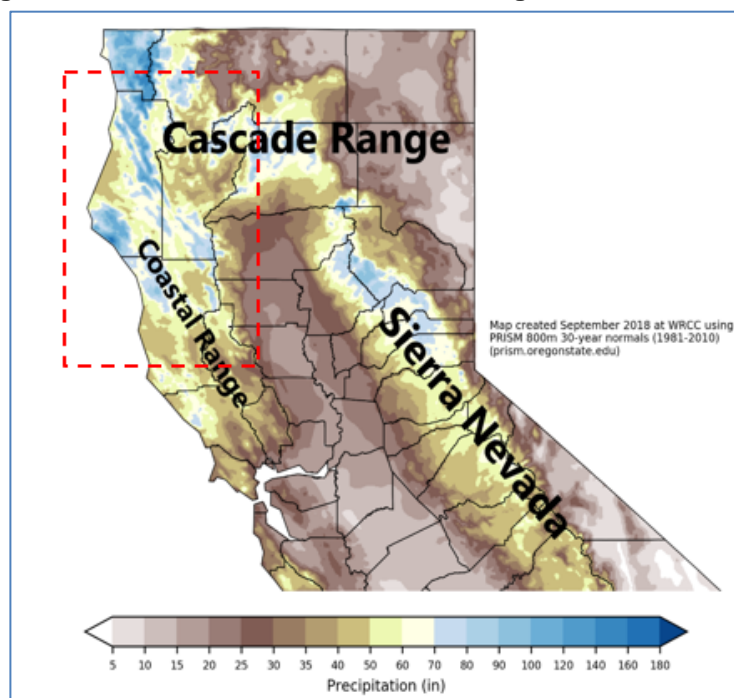
### 1.4.3 Mainstem River Flooding

- Flooding (Figure 1-5: ) is defined in TD-4412P-07-JA01, Identification of Common Geohazards, as a general and temporary condition of partial or complete inundation of normally dry land areas from:
  - The overflow of inland or tidal waters
  - The unusual and rapid accumulation or runoff of surface waters from any source

**Figure 1-5: Flooding**



- Flood risk is mitigated in the Sierra Nevada and Cascade Mountains due to dams and flood control structures. However, mainstem river flooding along downstream drainages due to heavy precipitation, snow melt, and other factors can cause significant damage to PG&E gas and electric assets. Water can penetrate and cause blockages and backflow problems in low pressure gas systems.
- Flooding resulting from heavy precipitation is a specific concern along the west slopes of the Coast Range (Figure 1-6: ) in the central and northern parts of the service territory. Streams leading to the ocean along the California North Coast, including the Russian and Eel rivers, are more flood prone than those in other parts of the service territory.

**Figure 1-6: Sierra, Cascade and Coast Range Mountains**

- Electric and gas distribution assets near river or stream outlets to the ocean along the North Coast may be undermined or damaged where there is a coincidence of high flows, high waves, winds, and tides.
- Potable water supplies and systems could become polluted by flood related contaminants or pathogens due to pipeline breaks and untreated sewage release.

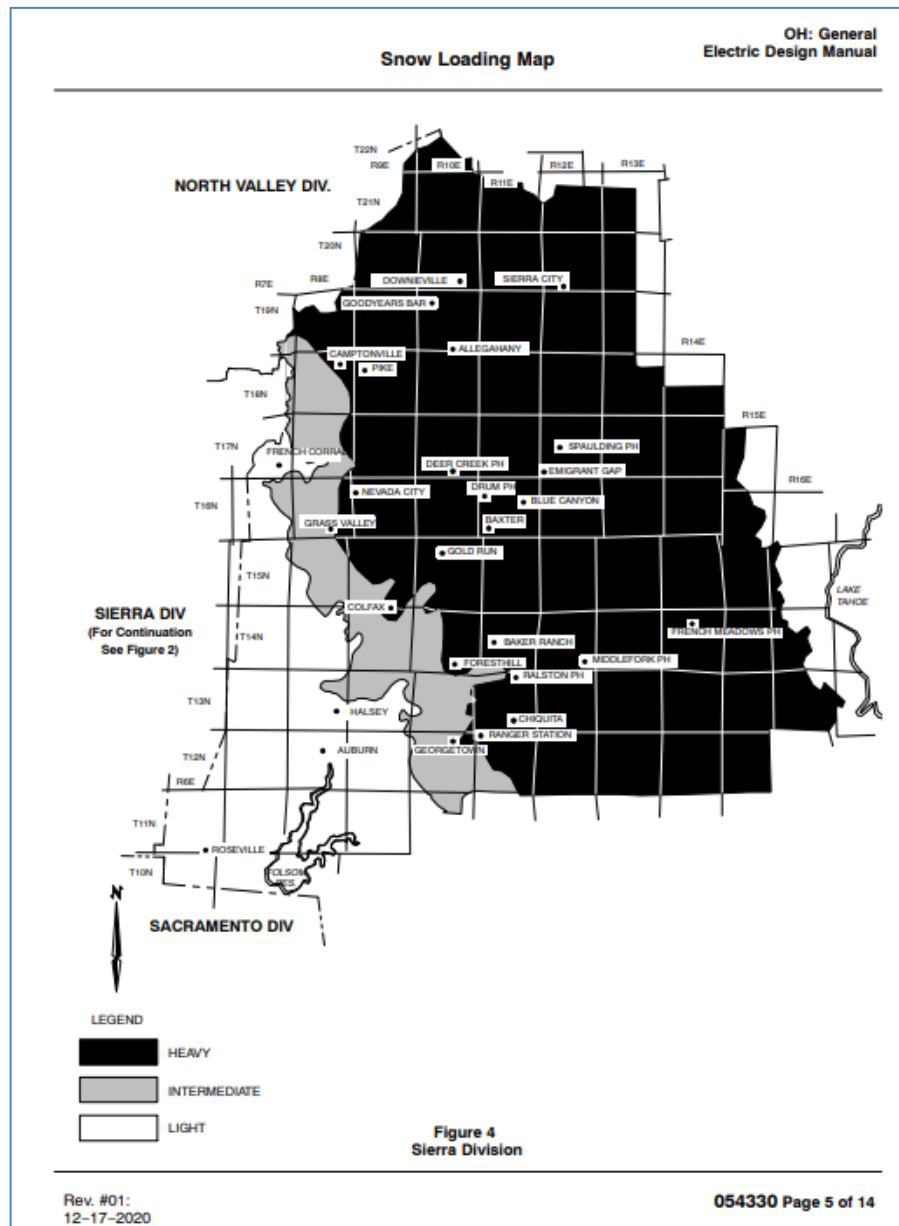
#### 1.4.3.1 Unique Response Elements

- Evaluate the access challenges resulting from flooding and develop staging areas for material and resource staging to mitigate delays in restoration.
- Maintain awareness of flood levels and the need to proactively de-energize lines that may no longer meet minimum clearance requirements.
- Assess impacts to customer metering and gas infrastructure.
  - In the case of customer metering, services may need to be de-energized, or meters pulled, and panels cleaned to ensure safety prior to re-energizing.
  - Gas distribution systems may need to be isolated via valve operation and blown down to protect customers and infrastructure. Once the pipeline is dry, gas can be restored, and customer pilot relights will need to be completed.
- Access to Substations may be impacted and require circuit reconfiguration to reroute power to limit customer service disruption.

### 1.4.4 Low Snow

- To view snow loading maps (Figure 1-7: ) in the Electric Transmission and Distribution Technical Information Library (TIL) at [\[REDACTED\]](#)

**Figure 1-7: Sierra Division Snow Loading Map Example**



- Customer outages may occur when snow loads exceed electric asset design specifications (e.g., power pole cross arms) at 3,000 feet and below where there are more electric distribution assets and vegetation.
- Snow outages usually occur in two phases: loading outages and unloading outages. Loading outages occur when the snow accumulates on PG&E equipment and surrounding vegetation resulting in tree or asset failure. Unloading outages occur post snow event when temperatures begin to warm, resulting in snow falling

from vegetation causing a dramatic rebound resulting in limb failure and asset damage.<sup>4</sup>

- Road and highways may be closed for periods of hours to two or three days at a time by blowing and drifting snow, requiring coordination with Caltrans and the California Highway Patrol to access asset and facility locations.

#### 1.4.4.1 Unique Response Elements

- Proactively identify snow cats and have them staged with operators.
- Embed a Public Safety Specialist (PSS) with the impacted County EOC to coordinate response needs.
- Utilized the Downed Tree Task Force concept.
  - Downed Tree Task Force is a public private partnership bringing together PG&E Troubleshooters, vegetation crews and line crews with Cal Trans, and County Public works.
  - Focus on clearing the roads where mainline is located. Restoring mainline should be a priority to provide ingress and egress to community centers that will support food and fuel allowing people to shelter in place.
  - Next move to County priorities with the taskforce supporting their respective roles. Leveraging the step restoration approach to execute an efficient restoration strategy.
- Vegetation damage will likely be significant. Ensure vegetation crew resourcing is heavy.
- During years of heavy snow accumulation snow depth can bury communication lines on jointly owned poles. During spring melt deep snowbanks can shift and start to pull pole lines over require snow removal of the communications line to mitigate pole failure potential.

#### 1.4.5 Tulare Lake Scenario

- As occurred in the spring of 2023 during the Tulare Lake response, significant winter snowpack and subsequent melting and runoff may prompt an extended “blue sky” incident management activation aimed at mitigating damage to PG&E assets and infrastructure due to wide area flooding (Figure 2-8).
- Last present in 1997, the re-emergence of dormant Tulare Lake (690 square miles at largest extent) threatened three PG&E substations, electric distribution and transmission lines and ground-mounted electric transformers.

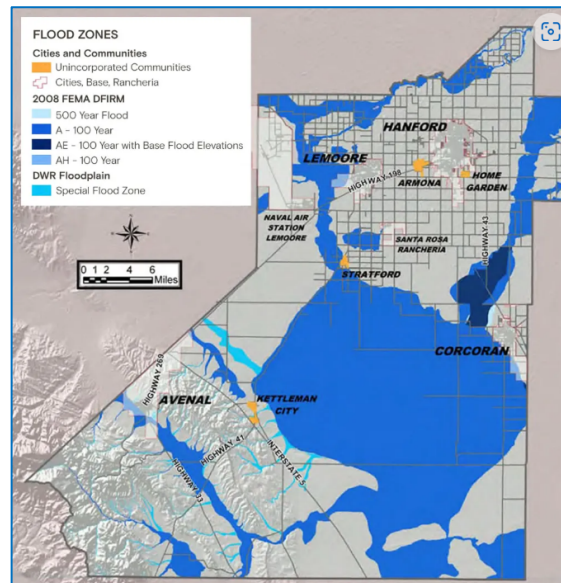
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<sup>4</sup> Snow weight (or snow loading potential) is related to snow-to-water ratio; the more moisture and the warmer the air temperature (but still below freezing allowing for snow,) the heavier the snowfall. Fluffy snow weighs around 4 pounds per square foot, while heavy wet snow can weigh 3-4 times that amount and it tends to accrete to surfaces in an ice like fashion, thus adding significant weight to anything upon which it adheres including PG&E equipment.

### 1.4.5.1 Unique Response Elements

- Ensure daily visibility to the growth of the lake and develop a proactive infrastructure removal plan.
- J.G, Bosworth Co. is responsible for water movement in the basin via a long-standing agreement with the State of California when they purchased the lake and developed it into a farm. It will be critical to develop a relationship with a representative to get visibility to water movement and understand asset impact.
- A best practice is to mobilize an Incident Management Team to support response. This allows the Fresno Division team to continue with the daily work in the area of the Division not impacted.
- If it's not possible to remove transformers prior to flooding. Air boats and divers can be used to remove overhead and pad mount transformers.
- Maintain awareness of the pole line infrastructure in the flooded area. Water flow can start to push over long tangent pole lines which will then require poles to also be removed.

**Figure 1-8: 2023 Tule Lake Flood Area**



### 1.4.6 Heat

- With the onset of hotter weather, heavy air condition use and sustained electricity demand may prevent distribution system transformers from cooling down overnight, causing assets to overheat and fail or suffer damage.
- Overloaded lines may heat up, expand or sag; in some cases, electric distribution lines may sag into tree branches, resulting in an outage.
- Heat can also affect power supply requiring the California Independent System Operator (CAISO) to assist in mitigating outage potentials due to excess demand, including as required rolling outages.

- Heat events generally occur June through mid-September and cover a 3–4-day period.
- The biggest influence on the number of outages during a heat event is whether or not the infrastructure receives nighttime cooling.

#### 1.4.6.1 Unique Response Elements

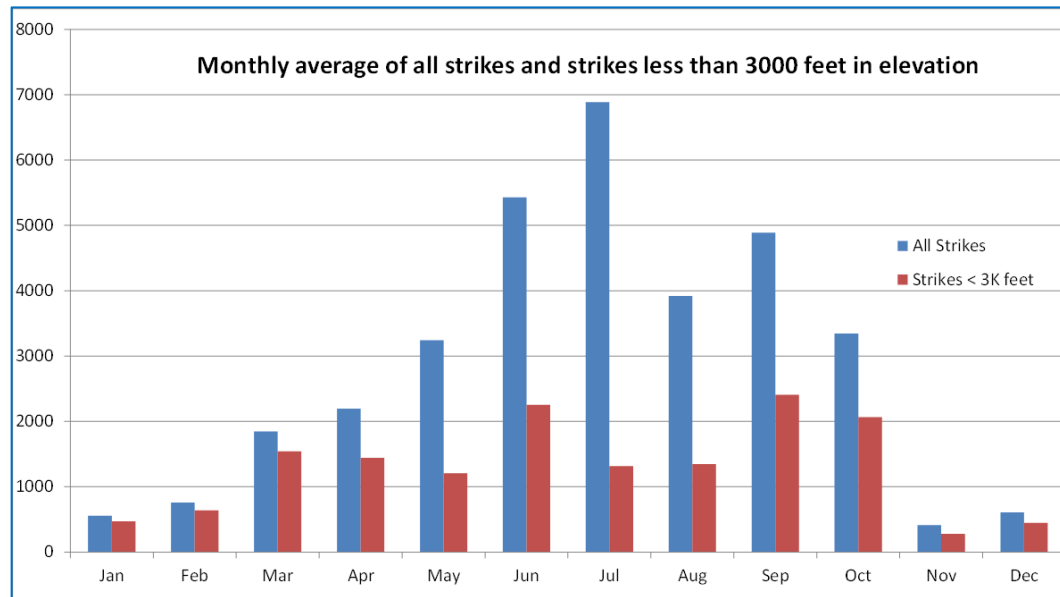
- There are several heat sensitive division withing the service area including by risk, San Jose, Diablo, DeAnza, Mission, East Bay, Sonoma, Sacramento, Kern, Stockton, and Fresno.
- Proactive activity to address heat outage risk is critical. This includes evaluating substation loading and deploying cooling methods to support substation transformer cooling and cleaning debris from subsurface transformers to support better air circulation.
- Analyze the length of the heat event and if nighttime cooling will occur. Generally, transformers can handle peak loads for a day or so. If they remain at or above peak for more than 24 to 48 hours increased failures are likely.
- Evaluate transformer inventories prior to the onset of the event and increase transformer stock in impacted service centers.
- Contact Standards to identify transformer substitutions for specific low inventory and critical transformer types.
- Temporary repairs may be necessary if specific transformer types are not available. For example, if a subsurface transformer is not available, an effective temporary repair can be to place a sheet of plywood over the transformer box and install a pad mount transformer on the plywood.
- Contact the Emeryville Equipment Shop Superintendent and ensure the facility is staffed to perform transformer repairs during the heat event for unique and low inventory transformer types.
- Develop a plan for secondary generation support to City and County Cooling Centers.
- Heat related outages can come into OMT as Single Customer outages. If the transformer is the damaged infrastructure, make sure you upgrade the outage to a transformer level in the Outage Dispatch Tool. This will create an ILIS Event log, add the customers assigned to the transformer, and ensure our outage records are accurate and provide the most effective customer outage communication.
- Kuhlman Horizontal Subsurface Transformers have unique reset operating requirements as a result of two SIFs. Utilize [TD-2424P-01 Distribution Transformer Operations](#), Section 3.6. for instructions on the procedure for resetting. Include the Kuhlman Horizontal Subsurface Transformer Secondary Breaker Operating Requirements [5 Minute Meeting](#) in safety messages.



### 1.4.7 Lightning

- Lightning related power surges may damage transformer windings used to step down power for customer use.
- Total service area lightning strike activity (Figure 1-9: ) associated with thunderstorms peaks at higher elevations in the Sierra Nevada during the summer, with lightning strikes below 3,000 feet more evenly spread out from March through October.

**Figure 1-9: Annual Lightning Strike Activity**



- Thunderstorms over interior mountain areas may be intense and may become unusually severe on occasion at intermediate and high elevations of the Sierra Nevada. In these mountain areas, thunderstorms, observed by radar at one point or another, average 50 to 60 days per year.
- Thunderstorms in the Central Valley are usually light and infrequent.

#### 1.4.7.1 Unique Response Elements

- Lightning related transformer damage can be difficult to assess. Expect an increase in transformers requiring replacement on either side of the lightning strike. Often the crew will be sent out to replace a single transformer and find other adjacent transformers also requiring replacement.
- Transformers will require load calculations which can sometimes delay work package development and with that restoration. Partner with Estimating to monitor work package throughput to ensure effective use of crew resources.
- Utilized the Lightning Tracker and sign up for lightning alerts. Lightning cells will move across the service area, and this can provide effective situational awareness to understand the impact risk.

- Have Materials deliver a truck load of assorted transformers to ensure there is enough inventory on hand to keep crews working on restoration.
- Lightning related outages can come into OMT as Single Customer outages. If the transformer is the damaged infrastructure, make sure you upgrade the outage to a transformer level in the Outage Dispatch Tool. This will create an Integrated Logging and Information System (ILIS) event log, add the customers assigned to the transformer, and ensure our outage records are accurate and provide the most effective customer outage communication.
- Wildfire ignitions can occur up to several days after a lightning event. Ensure field resources are aware of the wildfire risk where they are working and prepared to evacuate an area if necessary.

#### 1.4.8 Wind

- Strong winds can cause tree roots to fail that may lead to fallen trees or limbs on power lines and poles.
- Strong winds can pick up unsecured items (e.g., roofing material), outdoor furniture, and recreational equipment (e.g., trampolines) that can damage lines and poles.
- While risk occurs throughout the service area, coastal areas are particularly susceptible to high wind related downed Eucalyptus trees where the shallow rooted, non-native trees stand in sandy, unconsolidated soils.
- Excessive wind loads on PG&E's electric distribution poles may also cause asset failure that in turn increases wildfire ignition risk.

##### 1.4.8.1 Unique Response Elements

- Wind events can restrict aerial equipment use. In that regard, it is important to be mindful of wind speeds and ensure crews are following procedures related to the use of aerial equipment in areas of wind.
- Wind events can also result in a lot of vegetation damage and risk of tree failure. In that regard, it is important to ensure arborists are used to support tree failure analysis during assessment riding along with Troubleshooters and in the field with restoration crews. If tree failure risk increases, stop work and stand down field activities until the wind subsides and the area is safe to enter.
- In the event work has been stopped, LiveSafe and Everbridge can be leveraged to push a notification to coworkers identifying the stoppage of work and the specific area impacted.
- Wind can result in Transmission level damage resulting in source level outages. Temporary generation mobilization can be leveraged to reduce the impact of the outage to customers.
- It is important to proactively identify areas that may need temporary generation and pre-stage and cable the units if possible.



- It is important to develop a 911 Standby resource plan to ensure an effective response to relieve public safety agencies, to include:
  - Maintaining awareness of the locations where 911 Standby resources are in the field and prioritizing dispatch of a Make Safe team to mitigate the risk to the public and relieve the 911 Standby resource.
- Outage volumes may require the use of Circuit Based Strategy to use a task force step restoration approach.
- Utilized the Downed Tree Task Force concept.
  - Downed Tree Task Force is a public private partnership bringing together PG&E Troubleshooters, vegetation crews and line crews with Cal Trans, and County Public works.
  - Focus on clearing the roads where mainline is located. Restoring mainline should be a priority to provide ingress and egress to community centers that will support food and fuel allowing people to shelter in place.

Next move to County priorities with the taskforce supporting their respective roles. Leveraging the step restoration approach to execute an efficient restoration strategy. See appendix D for additional unique response elements by hazard.

#### 1.4.9 Potential Community Support Requirements

In addition to restoring gas and electric service, initial PG&E extreme weather response will look to eliminate or minimize threats to community health, safety, and property. Table 1-1 provides a summary of potential community support requirements derived from extreme weather risk analysis.

**Table 1-1: Potential Community Support Requirements**

Support Requirement	Heavy Precipitation	Mainstem River Flooding	Tulare Lake Scenario	Low Snow	Heat	Thunderstorm & Lightning	Wind
Outreach and communication to customers and Public Safety partners on the length and scope of potential outages.	X	X	X	X	X	X	X
Back-up power for Critical Infrastructure Emergency Services Sector CC1 facilities (e.g., hospitals, fire and police stations,	X	X	X	X			X

and Emergency Operations Centers). <sup>5</sup>							
Temporary power at mass care shelters (Critical Infrastructure Emergency Services Sector CC2 facilities).	X	X	X	X			
Bottled water delivery.		X	X				
Support to warming centers providing relief for the public.				X			
Support to local government or private sector run cooling centers providing relief for the public.					X		

## 1.4.10 Unique Logistical Considerations

### 1.4.10.1 North Coast Emergency Sites

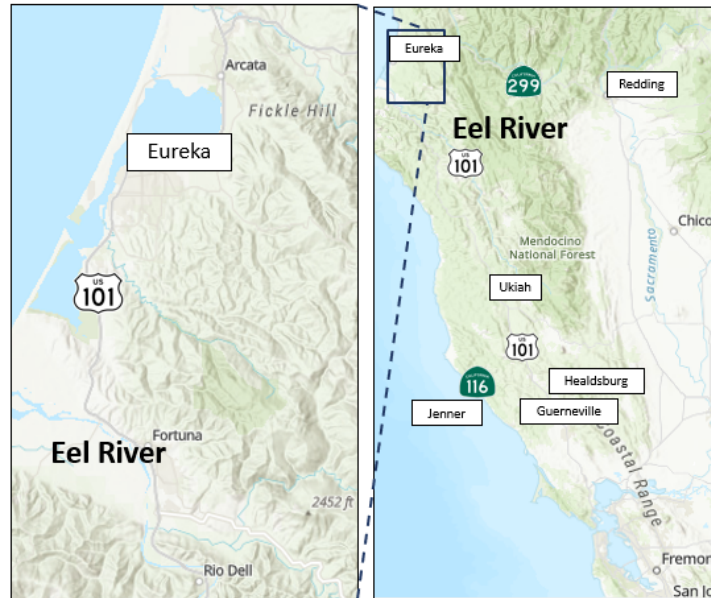
When setting up emergency sites (e.g., base camps, micro sites, staging areas) for heavy precipitation and flood related impacts in Sonoma and Mendocino counties, field facility planners should consider flood potential along low-lying portions of US Route 101 adjacent to the Russian River from Ukiah to Healdsburg. Incident facility planners must also consider access to and egress from the community of Guerneville (2010 US Census population: 4,534) along State Route 116 where the Russian River turns to the west through the Coast Range before reaching the ocean at Jenner.

**Figure 1-10: Russian River Drainage**



Within Humboldt County, base camp, micro site, and staging area planners must consider the potential for blocked access to the City of Eureka and surrounding areas due to flooding along US Route 101 where the Eel River meets the ocean (Figure 1-11).

**Figure 1-11: Eel River Drainage**



#### 1.4.10.2 Snow Cat Tracked Vehicles

For low snow incidents, PG&E may need to rent or use specialized equipment (Figure 1-12) to access asset and facility locations or utilize long line human and material load techniques to mobilize electrical workers and material to damaged areas to support restoration.

**Figure 1-12: Snow-Cat Tracked Vehicle**



### 1.5 Annex Maintenance

PG&E's EP&R S&E is responsible for developing, updating, and maintaining the *CERP* and its annexes in collaboration with the SMEs from responsible functional areas. Refer to Section 1.8 (Plan Maintenance) of the [CERP](#) and [Company Emergency Response](#)

[Plans Standard](#) for information regarding document approval, revision, and periodic maintenance. Approved *CERP* and annexes are published in PG&E's [Guidance Document Library \(GDL\)](#).

## 2. Emergency Organization and Responsibilities

In addition to restoring gas and electric service, PG&E extreme weather responders have a primary objective of the elimination of threats to community health, safety, and property. To achieve this objective, PG&E responders proactively communicate incident status and resource needs for heavy precipitation, mainstream river flooding, low snow, heat, thunderstorms and lightning, and wind.

PG&E extreme weather coordination builds upon field coworkers, Meteorology Operations and Analytics, Geosciences, and Hazard Awareness and Warning Center (HAWC) capabilities to establish an enterprise-wide common operating picture.

### 2.1 Meteorology Operations and Analytics

Meteorology Operations and Analytics is PG&E's extreme weather forecaster. Key extreme weather meteorology tools include the [Real-time Outages](#) wind (Figure 2-1), [Distribution System Operations Forecast](#), and [Service Area Weather Forecast](#) (Figure 2-).

**Figure 2-1: Real Time Wind Outages**

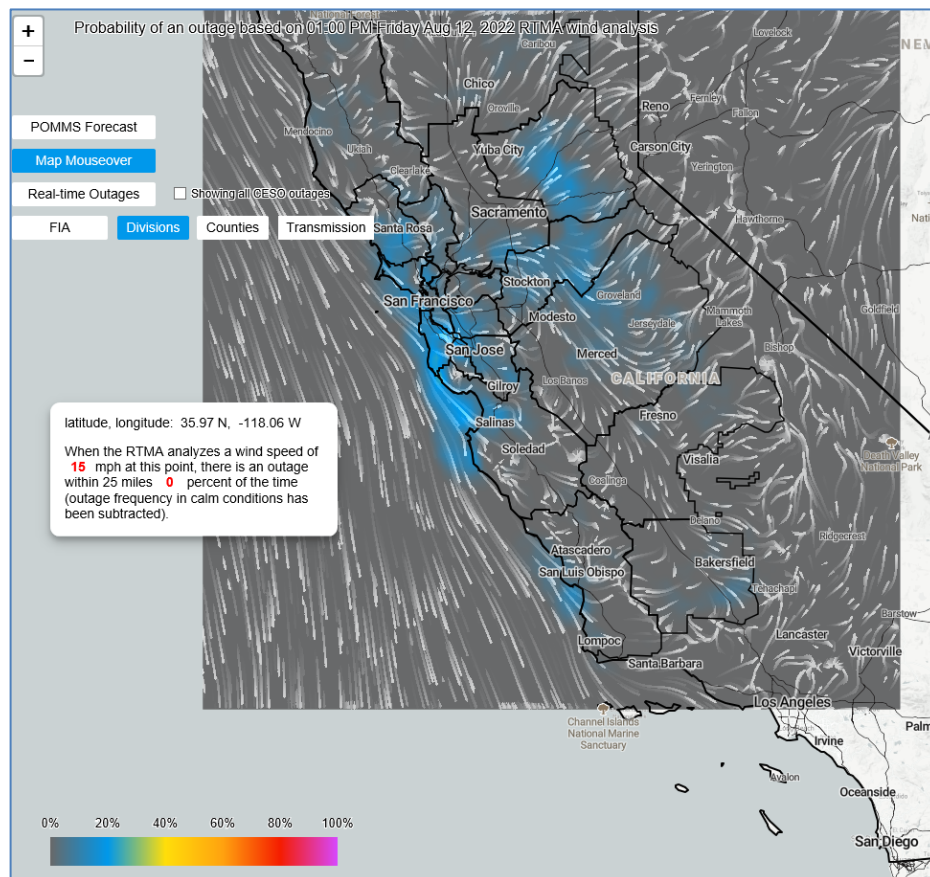




Figure 2-2 Service Area Forecast

<div>PG&amp;E</div> <h1>Service Area Weather Forecast</h1> <h2>Meteorology Operations &amp; Analytics</h2>																
Normal Temps		Published 8/12/2022 13:59		Actual Temps		Actual Temps		Forecast Temperatures								
				Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri			
08/12				08/10	08/11	08/12	08/13	08/14	08/15	08/16	08/17	08/18	08/19			
Min	Max	Location		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
61	97	Redding		65	93	61	97	61	98	64	101	65	105	68	106	
59	92	Sacramento Exec A/P		59	90	62	93	60	94	61	96	61	98	62	100	
59	92	Stockton		58	91	60	94	61	94	61	97	62	99	62	101	
64	95	Fresno		67	95	69	99	68	100	68	101	69	102	72	103	
68	96	Bakersfield		69	95	69	97	69	99	71	99	71	101	74	103	
55	73	San Francisco City		61	70	60	68	59	70	59	72	59	71	58	70	
57	73	Oakland A/P		63	77	62	74	59	73	59	74	59	76	60	77	
56	84	San Jose		59	82	61	80	59	81	58	84	59	87	61	88	
55	87	Concord		61	86	63	87	61	89	58	90	59	93	60	94	
50	84	Santa Rosa		50	82	52	87	49	87	53	89	54	90	55	92	
53	63	Eureka		51	73	58	68	53	65	52	66	54	67	54	68	
55	73	Salinas		60	79	61	78	61	78	56	76	57	77	58	77	
53	93	Paso Robles		56	95	54	97	57	100	61	101	62	101	59	100	
53	79	San Luis Obispo		53	83	53	82	53	83	58	85	57	83	55	81	
63	96	Red Bluff		63	92	60	96	63	97	64	101	67	103	69	106	
55	81	Bay Area Avg (CCR,SJC,SFC)		60	79	61	78	60	80	58	82	59	84	60	84	
59	91	DR 5 Station Avg (CCR,SJC,SAC,RBL,FAT)		62	89	63	91	62	92	62	94	63	97	65	98	
		Yesterday Morning's DR 5 Station Avg Forecast				63	91	62	92	63	94	63	94	65	97	
58	86	GDC~(.47SAC+.21OAK+.33SJC) Gas Demand Composite		60	86	62	86	60	86	60	88	61	91	62	92	
						<-15		<-10		<-5		-5 to 5		>5		
						>10		>15								
<div>PG&amp;E</div> <div>Weather Brief:</div>				Patchy AM csl clds, fair, dry and slt cooler coast/bay, little warmer inland today and tomorrow. Slt warmer conditions expctd tmrw followed by ltl chg or slt cooler temps near the coast Sun. Warmer temps expctd next week, esp inland, w/mild to warm ovnt lows as monsoonal moisture returns.												
<div>Wind Brief:</div>				WNW 10-15 mph												
Estimated 24 Hour Precipitation:				North		Central		South		Meteorologist: <div></div>						
Max Expected Precip next 24 Hrs.:				0.00		0.00		0.00								
Min Snow levels next 24 Hrs.:				North		Central		South								
Estimated Avg Snow Elevation Range:				Seasonal		Seasonal		Seasonal								

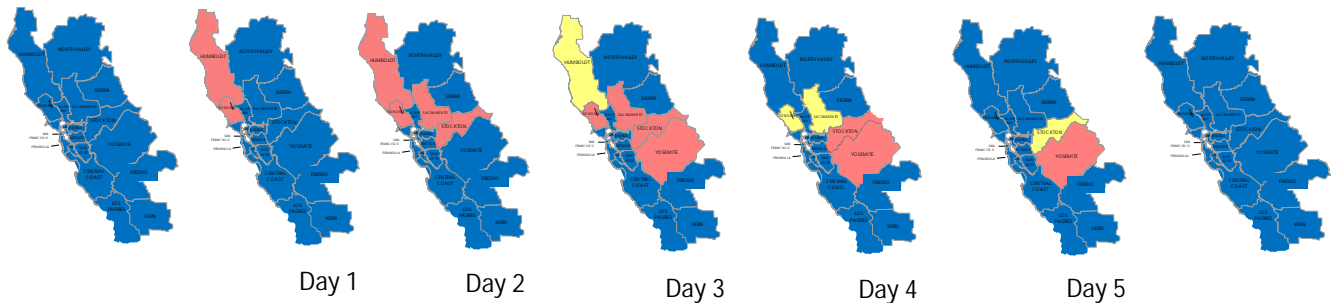
In addition, PG&E Meteorology Data Science is developing a virtually accessible electric outage tracking map. While still in the developmental phase, a copy of the real-time outage map can be accessed at [Weather Map \(pge.com\)](http://Weather Map (pge.com)).

## 2.2 Scaled Field Operations

Extreme weather incidents often expand and contract impacting one or more company divisions to multiple regions. Accordingly, PG&E extreme weather incident command operations may scale from operational period to operational period over multiple days. For example, customers experiencing an outages may expand initially on day 1 to 15,000 or more (red), reverting to improved, 10,000 or less (yellow) before returning to normal in

each impacted division. Based on the situation, PG&E will stage response resources in advance of contractor or mutual assistance requirements across company division and regions.

**Figure 2-2: Incident Complexity**



First, incident command operations start in the field supported by DSR, then OEC division and REC regional activations, and as needed, finally an EOC activation when customer outages meet or are projected to exceed guidance thresholds. Generally, the EOC will not be activated for an incident that can be managed out of a DSR, OEC, or at an REC in support of one or more OECs.

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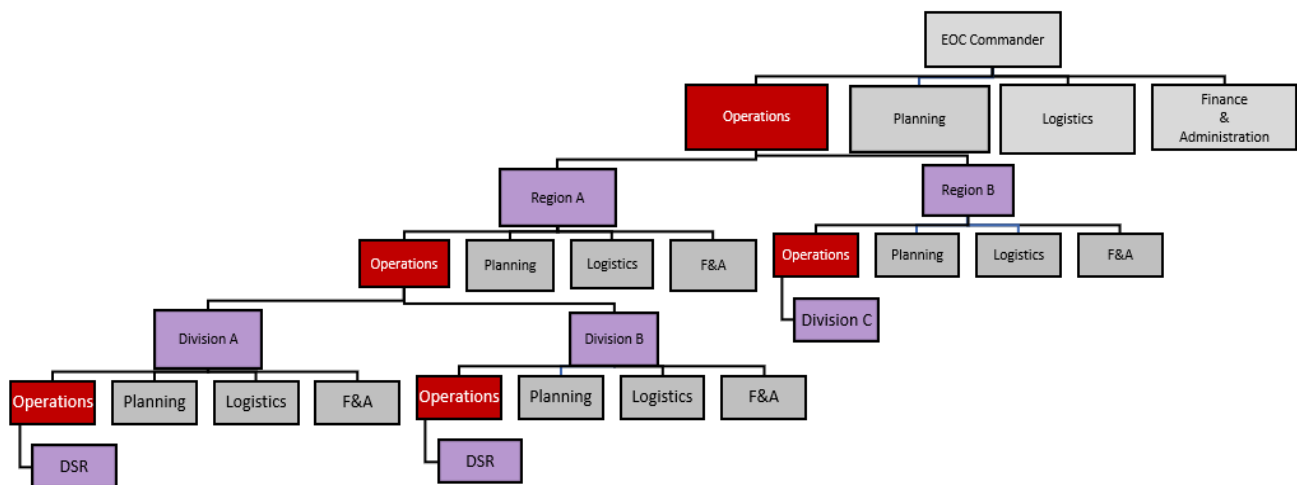
### 3. Concept of Operations

Escalating extreme weather conditions require close coordination across PG&E functions to alleviate the potential for communication gaps and inefficient and delayed resource movements and assignments to areas of greatest need. PG&E operational experts have developed an extreme weather play checklist of recommended actions for heavy precipitation, mainstem river flooding, low snow, snow melt related flooding, heat, thunderstorms and lightning, and wind impacts.

#### 3.1 Multi-Level Response

Using the latest Storm Outage Prediction Project (SOPP) model as a point of departure, Operation Section Chiefs in the field or at District Storm Room (DSR), Operations Emergency Center (OEC), Regional Emergency Center (REC), or the Emergency Operations Center (EOC) level (Figure 3-1) will, as required, compare available division, region, and system-wide troubleshooter and crew counts with SOPP projections to identify extreme weather resource gaps or overages. This information along with other resource, customer support, and related logistical support requirements is updated iteratively in advance of anticipated extreme weather impacts.

**Figure 3-1: Multi-Level Incident Management Operations**



#### 3.2 Time-Phased Response Actions

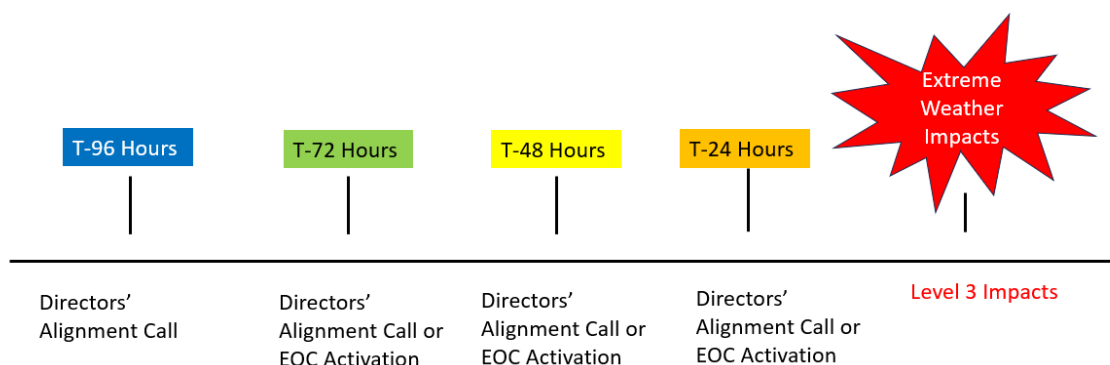
As outlined in the Appendix C playbook, PG&E extreme weather functional area actions target T-96-hour, 72-hour, 48-hour and 24-hour gas and electric operational requirements for Level 3 extreme weather impacts (Table 3-1). PG&E treats extreme weather incidents like PSPS events by identifying time and location impacts in advance.

**Table 3-1: Level 3 Electric and Gas Impacts**

<p style="text-align: center;"><b>Level 3 SERIOUS</b></p>	Electric and Gas
	<ul style="list-style-type: none"> <li>• 4-10 times Estimated Daily Outage (EDO) workload</li> <li>• 100,000 to 300,000 customers out</li> <li>• 7-10 ET Outages/Area of Responsibility (AOR), restoration is 1-3 days</li> <li>• Significant winter storm, winds 35-50 mph (EDO) or &gt;50 mph (ET)</li> <li>• 2-4-day gas restoration</li> <li>• Resources on 12- to 16-hour schedules</li> <li>• Outside resources brought in from other divisions</li> <li>• Gas-related fire, injury or significant property damage</li> <li>• Earthquake, landslide or wildfire with major gas transmission impacts with severe gas distribution interruptions</li> </ul>

Appendix C includes checklist actions designed to support coordinated, time-phased decisions across functional areas and activated EOC Command & General (C&G) staff positions at each operational level.

**Figure 3-2: Time-Phased EWA Actions**



### 3.3 Extreme Weather Activation Process

At division and regional levels, OECs and RECs will be, as required, activated in preparation for or response to potential, emergent, or actual extreme weather threats.

Figure 3-3: PG&amp;E Regions and Divisions



OEC and REC leads will notify the Emergency Field Operations Emergency Management Specialist (EFO EMS) Duty Officer of extreme weather-related emergency center activations. The EMS Duty Officer can be reached at [REDACTED] (external). The EFO EMS Duty Officer notifies the EFO emergency management supervisor and emergency/restoration team of all emergency center activations (including Communications Only). In addition, the EFO emergency management supervisor or designee notifies the senior manager of EFO and the senior director of Electric Program Management, Wildfire, Emergency, & Operations – Emergency Field Operations of OEC/REC activations Level 2 or greater. See [EMER-3002M-Electric Annex](#) for additional detail.

### 3.4 Elevated - Level 2 Electric Operations Director Alignment Calls

The Electric Distribution Operations Emergency Management supervisor or designee notifies the EP&R vice president and EP&R Response and Operations director of OEC/REC activations at Incident Classification Level 2 or above.

In addition, when the SOPP forecast indicates 4 or more divisions in a Category 3 or above EP&R R&O will initiate daily cross functional Director Alignment calls in alignment

with the pre-event checklists. Call attendees will include division and region coworkers, on-call EOC team members, Public Safety Specialist (PSS) staff, and impacted FAs.

As part of the Director Alignment Call agendas (Appendix B), enterprise leaders and functional area coworkers receive briefings from Safety, HAWC, Meteorology, Geosciences, Electric Transmission and Distribution, Contract Construction, General Construction, Gas Operations, Power Generation, Diablo Canyon Power Plant, Temporary Generation, Vegetation Management, Air Operations, Logistics, IT, Electric Distribution and Transmission, and EP&R leaders.<sup>6</sup> These calls will continue until escalation to a Company EOC level activation or subsidence of SOPP and outage threshold conditions.

Based on the severity and scope of incident projections, the Electric Distribution Operations Emergency Management supervisor or the vice president of EP&R may direct the pre-staging of crews, coworkers, and/or equipment in areas of expected impact.

### 3.5 Serious - Level 3 EOC Activation

At Level 3, the EP&R R&O Director or Vice President of EP&R may activate the company's EOC to coordinate incident resources, including the movement and pre-staging across regional boundaries in anticipation of areas of need. Factors considered in anticipation of the EOC activation include Electric Distribution Control Center (DCC) system status, load at risk, and grid stability.

### 3.6 Severe and Catastrophic – Level 4 and 5 Activations

At incident Level 4 and 5, PG&E emergency management and support operations will continue to scale under a coordinated incident action plan (IAP)

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<sup>6</sup> Agenda items may also include incident preparation updates from Major Projects and Programs (MPP) aligned North Coast, North Valley/Sierra, Bay Area, South Bay & Central Coast, and Central Valley regional field operations, Resource Plans, and Distribution Design and Estimating Support.

## 4. Performance Indicators

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PG&E extreme weather operations often involve “dual commodity” gas and electric impacts, with safety and environmental indicators applying equally across all asset types and incident requirements.

### 4.1 CPUC General Order 166 Performance Indicators

California Public Utilities Commission (CPUC) General Order 166 provides performance indicators for notifications, mutual assistance evaluation, electric service restoration and call center activities for major outages, measured events, and/or other newsworthy events, including standards 6, 7, 12 and 13.

#### 4.1.1 Standard 6, Initial Notification

Within one hour of the identification of a major outage or other newsworthy event, PG&E shall notify the CPUC, affected Essential Customers, and the Warning Center at the Office of Emergency Services of the location, possible cause and expected duration of the outage. Per GO 166 Standard 6, notification to the Commission shall be through the Commission’s website, consistent with Resolution E-4184, ESRB-8, and/or subsequent Commission guidance.<sup>7</sup>

#### 4.1.2 Standard 7, Mutual Assistance Evaluation

Although specifically applicable to major events with approximately 550,000 simultaneous electric customer outages, PG&E shall begin the process the process of evaluating and documenting the need for mutual assistance.

#### 4.1.3 Standard 12, Restoration Performance for Measured Events

Although specifically applicable to major, measured events with approximately 550,000 simultaneous electric customer outages, GO 166 Standard 12 provides a restoration performance benchmark based on the following Customer Average Interruption Duration (CAIDI) equation.

##### **CAIDI Equation**

Total customer minutes of interruption / Total number of customer interruptions

An event response is presumed reasonable if the CAIDI is 570 or below and presumed unreasonable if the CAIDI is above 570.

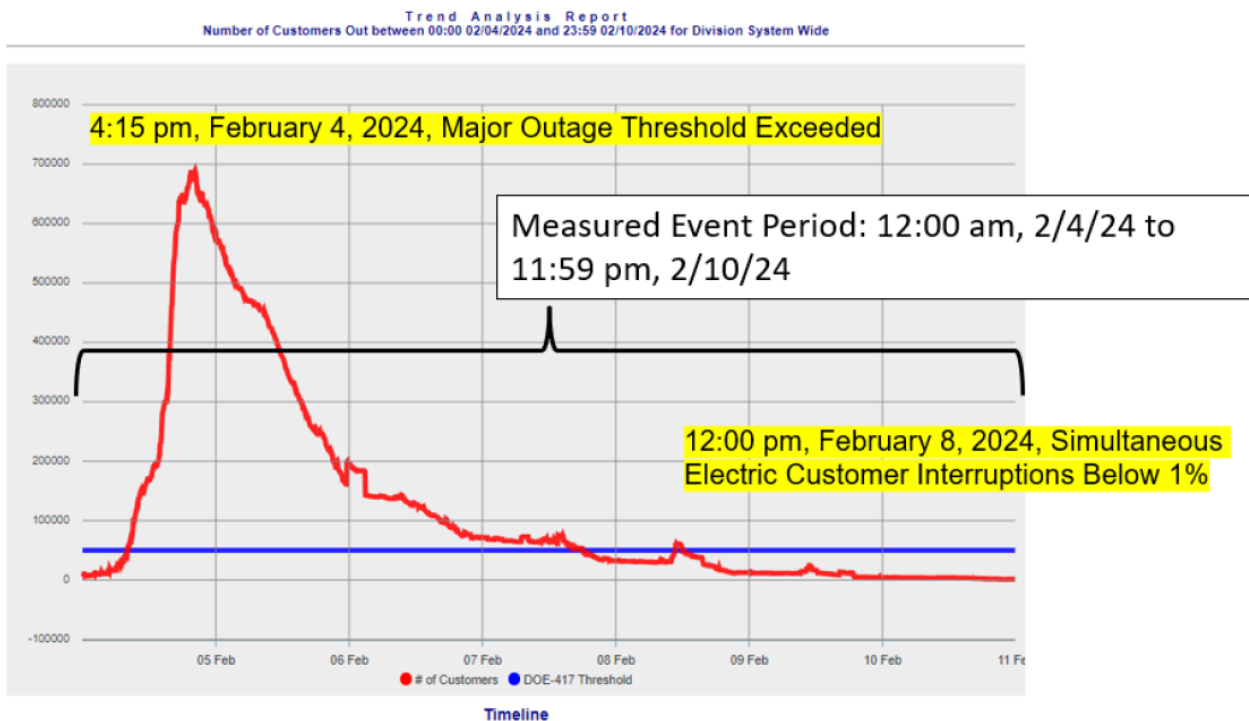
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<sup>7</sup> The Warning Center at the OES is expected to notify other state and local agencies and affected Public Safety Partners of the outage.

#### 4.1.4 Standard 13, Call Center Benchmark for Measured Events

Although specifically applicable to measured events with approximately 550,000 simultaneous electric customer outages, GO 166 Standard 13 provides a benchmark for call center performance. Measured on a 24-hour basis for outage-related calls from the time the Measured Event begins (12:00 a.m. to 11:59 p.m.), and separately for each 24-hour period until the Measured Event ends (Figure 5-1, February 4, 2024, Measured Event Example), call center performance is considered reasonable if the percent busies (i.e., customer busy signal experience) calculation is lower than Level-1. Call center performance is considered unreasonable if the percent busies calculation is greater than Level-2.

**Figure 4-1: February 4, 2024, Measured Event Example**



Level-1 is defined as 30% busies over the day of the outage (12:00 a.m. to 11:59 p.m.). Level-2 is defined as 50% busies over the day of the outage (12:00 a.m. to 11:59 p.m.) plus at least 50% busies in each of six one-hour increments.

## 4.2 Gas Operations Response and Restoration Performance

Gas asset response and restoration targets are pursued consistently with [EMER-3003M-Gas Emergency Response Plan](#) concept of operation. Absent conflicting incident priorities, gas incident operations are managed at the lowest Gas operations organizational level in unison with Electric incident operations.

### 4.3 Environmental Health and Safety

Environmental health and safety indicators are given below:

- Coworker, contractor, or public injuries
- Preventable motor vehicle incidents (PMVIs)
- Hazardous material spill or release
- Response time to immediate response notifications
- Near Hit incidents
- Work procedure errors or human performance events
- Job Safety Analyses performed
- Tailboards completed
- Safety observations performed

Indicators will be used to accomplish the following:

- Monitor safety practices and environmental compliance.
- Determine if safety and environmental practices are consistent with established company standards and all applicable regulations.
- Ensure that hazardous or at-risk environmental conditions reported to PG&E are identified for response.

### 4.4 Safety Net

Relevant to electric reliability, the Safety Net (Storm Inconvenience Bill Credit) program is a provision of the Service Guarantee program established in the 1999 and 2003 General Rate Cases and subsequent decisions by the CPUC. Safety Net provides storm inconvenience bill credits to residential customers who are without power for more than 48 hours due to a severe weather-related event, like storms. [CUST-10000P-6 Safety Net Electric Reliability Procedure \(#1 of 6\)](#) describes how Electric Reliability validates and reviews Safety Net program payouts and implements controls for checking compliance with the Service Guarantee program.





## 5. Coordination and Communication

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### 5.1 Situational Awareness

PG&E extreme weather data collection and analysis is updated and shared proactively over the course of extreme weather incident life cycles, across all incident support and management levels.

#### 5.1.1 Hazard Awareness & Warning Center

A key real time situational awareness capability, the PG&E Hazard Awareness & Warning Center (HAWC) provides hazard and threat updates and reports to PG&E employees and executive leaders. The HAWC began life in 2018 as the Wildfire Safety Operations Center (WSOC). In 2021 the center broadened its focus to become an all-hazards center by partnering with PG&E Geosciences to include land movement events to the list of monitored hazards. The current list of monitored hazards includes:

- Wildfire
- Land Movement
- Tsunami
- Earthquakes
- Flooding
- Avalanche
- Geomagnetic Storms

Working closely with a variety of PG&E teams including the Public Safety Specialist (PSS) coworkers, Safety, and Infrastructure Protection Team (SIPT) members, Meteorology and Geosciences, the HAWC works to ensure awareness and help facilitate response to hazards in the service area.

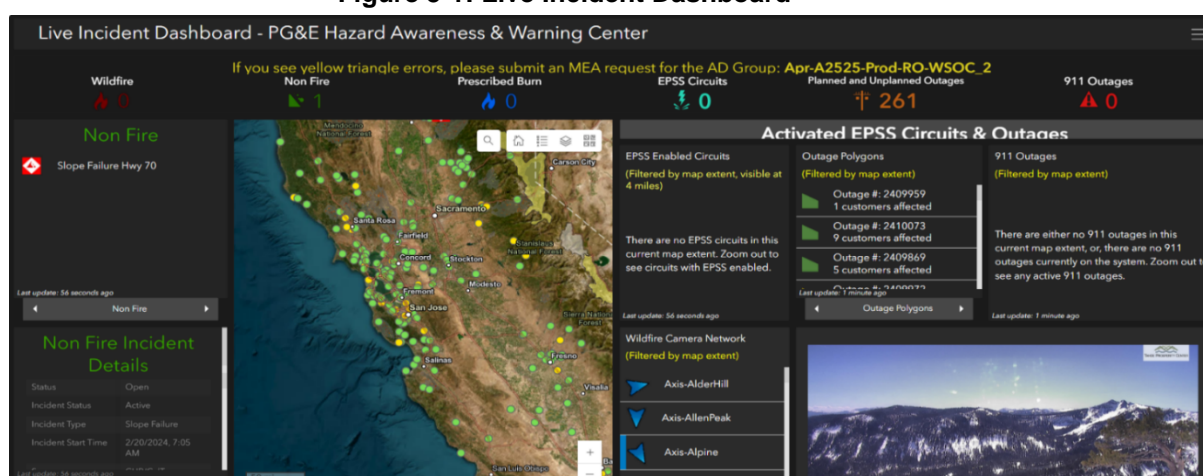
The HAWC is staffed 24 hours a day, 7 days a week, 365 days a year to monitor, communicate, and facilitate response to threats that have potential to impact PG&E customers, infrastructure, and communities. In addition to wildfires, the HAWC monitors and supports:

- Land movement including debris flows, land/mud slides, earthquakes, avalanches, and tsunamis
- Geomagnetic storm events caused by sunspot activity
- Flood related potentials and communications including advisories and warnings during storm events
- EOC Public Safety Power Shut Off activations and other activations as needed

### 5.1.1.1 Live Incident Dashboard

PG&E Hazard Awareness and Warning Center (HAWC) maintains the company's web-based Live Incident Dashboard (LID) at [Active Incident Dashboard 2.0 \(LID PROD\) \(arcgis.com\)](https://arcgis.com). The Environmental Systems Research Institute, Inc. (ESRI) Geographic Information System (GIS)-based tool supports incident and event situational awareness, including the status of activated Enhanced Powerline Safety Setting (EPSS) circuits, planned and unplanned electric outages, locations of wildfires, slope failures, prescribed burns, and 911 calls. To request access to the LID or HAWC notifications, visit the HAWC SharePoint page [Hazard Awareness & Warning Center \(HAWC\) - Home \(sharepoint.com\)](https://sharepoint.com). Use the form on the top right button of the page to request access/sign up for all current HAWC information items. Requests for LID access require a coworker's supervisor approval.

Figure 5-1: Live Incident Dashboard



The HAWC may issue email watch and warning notifications for debris flows and avalanches in coordination with PG&E Meteorology, Geosciences, and external technical organizations.

### 5.1.2 Distribution System Operations (DSO) Storm Outage Prediction Project

To mitigate the operational risk caused by extreme weather, PG&E's Meteorology Operations and Analytics team developed the DSO Storm Outage Prediction Project (DSO SOPP) Model Forecast. SOPP outputs leverage 28 years of historical outage and weather data to predict potential outages.

The DSO SOPP model combines historical weather and outage data with weather forecasts to predict the number of electric system transformer and above sustained outages (SOs)<sup>8</sup> per PG&E division. The model also provides an estimate of the resources

<sup>8</sup> Lasting more than five minutes

needed to respond to the level of predicted electric outages. The modeled adverse weather threats are wind, heavy precipitation, low snow, and heat.

The model provides specific quantitative forecasts for SOs, customer counts, and resource requirements. SOPP model outage forecasts are assigned a Category Level 1, 2, 3, 4, or 5 based on how the predicted level of SOs compares with long-term historical level of SOs for each specific division or area.

The daily charts sent to email recipients are divided into three sections:

### Section 1: DSO SOPP Outage Risk by Weather Type

Section 1 provides a forecast of “what” and “when”, with colors varying from red to green as shown in Figure 6-2, Outage Risk by Weather Type Example, giving a sense of impact risk severity/forecast confidence.

Figure 5-2: Outage Risk by Weather Type Example

1 OUTAGE RISK BY WEATHER TYPE								
	Thursday 7/25/24	Friday 7/26/24	Saturday 7/27/24	Sunday 7/28/24	Monday 7/29/24	Tuesday 7/30/24	Wednesday 7/31/24	Thursday 8/1/24
Heat	1							
Flashover								
Heavy Rain								
Thunderstorms								
Low Snow								
South Wind								
Northwest Wind								
Northeast Wind								
RISK LEGEND	No Risk		(1) Slight Risk		(2) Moderate Risk		(3) High Risk	

\* A Extended Divisional Outage Forecast will be issued when Risk(s) meet or exceed "Moderate" during that period

### Section 2: System-Wide Outage Category Probability

As shown in the Figure 6-3 System-Wide Outage Category Probability Example, Section 2 provides an 8-day probabilistic forecast of the system-wide impact category, supplying additional understanding to the daily impact severity/forecast confidence.

Figure 5-3: System-Wide Outage Category Probability Example

2 SYSTEM-WIDE OUTAGE CATEGORY PROBABILITY								
	Thursday 7/25/24	Friday 7/26/24	Saturday 7/27/24	Sunday 7/28/24	Monday 7/29/24	Tuesday 7/30/24	Wednesday 7/31/24	Thursday 8/1/24
Category 1	85%	95%	100%	100%	100%	100%	100%	100%
Category 2	15%	5%	0%	0%	0%	0%	0%	0%
Category 3	0%	0%	0%	0%	0%	0%	0%	0%
Category 4	0%	0%	0%	0%	0%	0%	0%	0%
Category 5	0%	0%	0%	0%	0%	0%	0%	0%

### Section 3: Outage Forecast and Risk Timing

Section 3 focuses on quantifying the impact due to weather with outage ranges on a divisional, regional, and system wide scale, with impact risk timing included. As shown in Figure 6-4 Outage Forecast & Risk Timing by Division Example, the first value in the

outage range is a forecast of what is “Expected”, with the second value representing a forecasted “Reasonable Worst Case” scenario.

**Figure 5-4: Outage Forecast & Risk Timing by Division Example**

3

OUTAGE FORECAST & RISK TIMING BY DIVISION

		Thursday 7/25/24			Friday 7/26/24			Saturday 7/27/24			Sunday 7/28/24		
		Outage Range*		Risk Timing**	Outage Range*		Risk Timing**	Outage Range*		Risk Timing**	Outage Range*		Risk Timing**
SYSTEM TOTAL		100	120	16:00 - 22:00	80	100		68	85		66	85	
North Coast	Humboldt	5	6		5	6		4	5		3	4	
	Sonoma	3	4		3	4		3	4		3	4	
	North Bay	3	4		3	4		3	4		3	4	
	TOTAL	11	14		11	14		10	13		9	12	
North Valley & Sierra	North Valley	8	9		6	8		5	6		4	5	
	Sierra	7	8		5	6		4	5		4	5	
	Sacramento	9	11		6	7		5	6		5	6	
	TOTAL	24	28		17	21		14	17		13	16	
Bay Area	San Francisco	1	2		1	2		1	2		1	2	
	East Bay	2	3		2	3		1	2		1	2	
	Diablo	3	4		3	4		3	4		3	4	
	Peninsula	3	4		2	3		2	3		2	3	
	Mission	2	4		2	3		2	3		2	3	
	TOTAL	11	17		10	15		9	14		9	14	
South Bay & Central Coast	De Anza	3	4		2	3		2	3		2	3	
	San Jose	4	5		3	4		3	4		3	4	
	Central Coast	5	7		5	6		5	6		5	6	
	Los Padres	3	4		3	4		3	4		3	4	
	TOTAL	15	20		13	17		13	17		13	17	
Central Valley	Stockton	6	7		5	7		4	5		4	5	
	Yosemite	10	12		8	9		6	7		6	7	
	Fresno	15	18	16:00 - 22:00	11	13		8	10		8	9	
	Kern	8	10	16:00 - 22:00	5	7		4	5		4	5	
	TOTAL	39	47	16:00 - 22:00	29	36		22	27		22	26	

\* Outage range consists of an “Expected” and “Reasonable Worst Case” forecast of sustained transformer level outages and above

\*\* Risk timing reflects the peak outage period

#### OUTAGE LEGEND

Category	Generalized Risk	Staffing
Category 1	Significant Adverse Weather Unlikely	Normal, but have a plan
Category 2	Adverse Weather Possible	Have plan for escalation
Category 3	Adverse Weather Likely	Staffing & Timing as Directed
Category 4	Extreme Weather Possible	Staffing & Timing as Directed
Category 5	Extreme Weather Likely	Staffing & Timing as Directed



Use the [DSOSOPP.png \(944x1515\) \(pge.com\)](#) link to view an image of the charts.

### Combination Forecast Chart

Not everyone who receives DSO SOPP email forecasts can access the DSO Weather Page, so a combination chart is attached to the daily email as a .png image file. As shown in the Figure 6-5 Combined DSO SOPP Forecast Chart Example, the first chart will combine the forecasted outages and Customers Experiencing Sustained Outages (CESO) ranges, followed by a chart showing crew ranges combined with Troubleshooter ranges will sit below the first chart. These charts will be duplicated and displayed to the right when an extended forecast is issued.

Figure 5-5: Combined DSO SOPP Forecast Chart Example

SUSTAINED OUTAGE & CUSTOMERS EXPERIENCING OUTAGES (CESO) FORECAST SUMMARY																	
		Thursday				Friday				Saturday				Sunday			
		7/25/24				7/26/24				7/27/24				7/28/24			
		Outage Range		CESO Range		Outage Range		CESO Range		Outage Range		CESO Range		Outage Range		CESO Range	
SYSTEM TOTAL		100	120	20,700	28,200	80	100	16,000	22,300	68	85	13,300	18,900	66	85	12,900	18,300
North Coast	Humboldt	5	6	700	900	5	6	700	900	4	5	600	700	3	4	400	600
	Sonoma	3	4	400	700	3	4	400	700	3	4	400	700	3	4	400	700
	North Bay	3	4	700	900	3	4	700	900	3	4	700	900	3	4	700	900
	TOTAL	11	14	1,800	2,500	11	14	1,800	2,500	10	13	1,700	2,300	9	12	1,500	2,200
North Valley & Sierra	North Valley	8	9	1,300	1,600	6	8	900	1,300	5	6	600	900	4	5	400	600
	Sierra	7	8	1,400	1,600	5	6	900	1,100	4	5	600	900	4	5	600	900
	Sacramento	9	11	1,600	2,000	6	7	900	1,100	5	6	700	900	5	6	700	900
	TOTAL	24	28	4,300	5,200	17	21	2,700	3,500	14	17	1,900	2,700	13	16	1,700	2,400
Bay Area	San Francisco	1	2	700	1,300	1	2	700	1,300	1	2	700	1,300	1	2	700	1,300
	East Bay	2	3	1,000	1,500	2	3	1,000	1,500	1	2	500	1,000	1	2	500	1,000
	Diablo	3	4	1,100	1,400	3	4	1,100	1,400	3	4	1,100	1,400	3	4	1,100	1,400
	Peninsula	3	4	1,000	1,400	2	3	700	1,000	2	3	700	1,000	2	3	700	1,000
	Mission	2	4	800	1,500	2	3	800	1,100	2	3	800	1,100	2	3	800	1,100
	TOTAL	11	17	4,600	7,100	10	15	4,300	6,300	9	14	3,800	5,800	9	14	3,800	5,800
South Bay & Central Coast	De Anza	3	4	800	1,200	2	3	400	800	2	3	400	800	2	3	400	800
	San Jose	4	5	1,300	1,800	3	4	900	1,300	3	4	900	1,300	3	4	900	1,300
	Central Coast	5	7	900	1,400	5	6	900	1,100	5	6	900	1,100	5	6	900	1,100
	Los Padres	3	4	400	700	3	4	400	700	3	4	400	700	3	4	400	700
	TOTAL	15	20	3,400	5,100	13	17	2,600	3,900	13	17	2,600	3,900	13	17	2,600	3,900
Central Valley	Stockton	6	7	1,100	1,400	5	7	900	1,400	4	5	700	900	4	5	700	900
	Yosemite	10	12	1,600	2,000	8	9	1,100	1,400	6	7	700	900	6	7	700	900
	Fresno	15	18	2,600	3,200	11	13	1,800	2,200	8	10	1,200	1,600	8	9	1,200	1,400
	Kern	8	10	1,300	1,700	5	7	800	1,100	4	5	700	800	4	5	700	800
	TOTAL	39	47	6,600	8,300	29	36	4,600	6,100	22	27	3,300	4,200	22	26	3,300	4,000

\* Sustained Outage & Customers range consists of an "Expected" and "Reasonable Worst Case" forecast and are based on the current range of predicted outages

\*\* Risk timing reflects the peak outage period

CREWS & TROUBLE SHOOTERS (TS) FORECAST SUMMARY																	
		Thursday				Friday				Saturday				Sunday			
		7/25/24				7/26/24				7/27/24				7/28/24			
		Crews Range		TS Range		Crews Range		TS Range		Crews Range		TS Range		Crews Range		TS Range	
SYSTEM TOTAL		51	63	97	117	40	53	78	101	36	45	71	87	34	43	67	84
North Coast	Humboldt	3	4	6	7	3	4	6	7	3	3	6	6	2	3	4	6
	Sonoma	2	2	4	4	2	2	4	4	2	2	4	4	2	2	4	4
	North Bay	2	2	4	4	2	2	4	4	2	2	4	4	2	2	4	4
	TOTAL	7	8	14	15	7	8	14	15	7	7	14	14	6	7	12	14
North Valley & Sierra	North Valley	5	6	9	11	4	5	7	9	3	4	6	7	2	3	4	6
	Sierra	3	4	6	7	2	3	4	6	2	2	4	4	2	2	4	4
	Sacramento	4	5	7	9	3	3	6	6	2	3	4	6	2	3	4	6
	TOTAL	12	15	22	27	9	11	17	21	7	9	14	17	6	8	12	16
Bay Area	San Francisco	1	1	2	2	1	1	2	2	1	1	2	2	1	1	2	2
	East Bay	1	2	2	4	1	2	2	4	1	1	2	2	1	1	2	2
	Diablo	1	2	2	4	1	2	2	4	1	2	2	4	1	2	2	4
	Peninsula	2	2	4	4	1	2	2	4	1	2	2	4	1	2	2	4
	Mission	1	2	2	4	1	1	2	2	1	1	2	2	1	1	2	2
	TOTAL	6	9	12	18	5	8	10	16	5	7	10	14	5	7	10	14
South Bay & Central Coast	De Anza	2	2	4	4	1	2	2	4	1	2	2	4	1	2	2	4
	San Jose	2	2	4	4	1	2	2	4	1	2	2	4	1	2	2	4
	Central Coast	3	4	6	7	3	4	6	7	3	4	6	7	3	4	6	7
	Los Padres	2	2	4	4	2	2	4	4	2	2	4	4	2	2	4	4
	TOTAL	9	10	18	19	7	10	14	19	7	10	14	19	7	10	14	19
Central Valley	Stockton	3	3	6	6	2	3	4	6	2	2	4	4	2	2	4	4
	Yosemite	4	5	7	9	3	4	6	7	2	3	4	6	2	3	4	6
	Fresno	7	9	12	16	5	6	9	11	4	5	7	9	4	4	7	7
	Kern	3	4	6	7	2	3	4	6	2	2	4	4	2	2	4	4
	TOTAL	17	21	31	38	12	16	23	30	10	12	19	23	10	11	19	21

\* Trouble Shooters & Crews range consists of an "Expected" and "Reasonable Worst Case" forecast and are based on the current range of predicted outages

\*\* Risk timing reflects the peak outage period

Use the [StaffingCalcs.png \(915x1360\) \(pge.com\)](#) link to view a copy of the Combined DSO SOPP Forecast Chart.

## Divisional and System-Wide Impact and Staffing Forecasts

All 19 electric divisions and a system-wide view of the daily individualized components of the Impact and Staffing Forecast product are posted to the [DSO Weather Page \(pge.com\)](#). As shown in Figure 5-6, Stockton Impact Reference Card Example, the charts show the following variables per the daily forecasted sustained outage range:

- Forecasted outage impact category
- Impact risk timing
- A range of forecasted customers impacted
- An average time of restoration to 90 – 99%
- A range of forecasted 911 standby events
- A calculated range of crews and troubleshooters needed to address the forecasted impact

The system-wide view provides 8 days of forecast material, with divisional charts expanding from 4 to 8 days when an extended forecast is issued.



Figure 5-6: Stockton Impact &amp; Staffing Forecast Example

<b>1 STOCKTON IMPACT &amp; STAFFING FORECAST</b> <i>(Based on the current range of predicted Sustained Outages)</i>								
	Mon, 08/12/2024		Tue, 08/13/2024		Wed, 08/14/2024		Thu, 08/15/2024	
	Expect	Worst Case	Expect	Worst Case	Expect	Worst Case	Expect	Worst Case
Predicted Sustained Outages (SO)*	5	6	5	6	5	6	5	6
Predicted Impact Category	1	1	1	1	1	1	1	1
Impact Risk Timing	None		None		None		None	
Customers Experiencing Sustained Outages (CESO)	900	1,100	900	1,100	900	1,100	900	1,100
Time of Restoration (Days)	0.4 - 0.8	0.4 - 0.8	0.4 - 0.8	0.4 - 0.8	0.4 - 0.8	0.4 - 0.8	0.4 - 0.8	0.4 - 0.8
911 Events	1	2	1	2	1	2	1	2
Crews	2	3	2	3	2	3	2	3
Trouble Shooters	4	6	4	6	4	6	4	6

\* Sustained Outages Transformer Level & Above

## Division and System Impact Reference Cards

As shown in Figure 5-7, Stockton Impact Reference Card Example, static Impact reference cards sit next to each Division and the System Impact and Staffing Forecast on the [DSO Weather Page \(pge.com\)](#). The cards provide the following useful categorical impact information for the system and all electric divisions:

- Sustained outage thresholds
- Typical number of customers out
- Average time of restoration
- Generalized qualitative/quantitative weather conditions needed to experience the impact level

- Typical number of 911-Standby Events per category
- The number of Crews and Troubleshooters calculated per impact category

Figure 5-7: Stockton Impact Reference Card Example

2 STOCKTON IMPACT REFERENCE CARD							
Stockton Categories of Impact / Matrix of Generalized Weather and Staffing (OEC/RECs generally activate due to weather when impact meets or exceeds Category 3)							
Categories of Impact	Sustained Outages (SO*)	Average Customers Out (CESO**)	Average Time of Restoration (Days***)	Generalized Qualitative / Quantitative Weather	911 Events	Crews	Trouble Shooters
<b>1. Normal Daily Impact Levels</b> Have a plan (Locally assigned crewing and resources)	< 10	< 3,900	0.4 - 0.8	<ul style="list-style-type: none"> <li>• Normal Blue Sky Day</li> <li>• Peak sustained less than 10 - 15 mph</li> <li>• Peak wind gusts less than 30 mph</li> <li>• Near normal temperatures</li> </ul>	< 4	< 4	< 7
<b>2. Adverse Weather Possible</b> Have a plan for escalation (All company and contractor resources)	10 - 18	< 8,100	0.5 - 2.5	<ul style="list-style-type: none"> <li>• Isolated thunderstorms</li> <li>• Moderate rainfall / Light Snow below 3500'</li> <li>• Peak sustained 15 - 25 mph</li> <li>• Peak wind gusts 25 - 40 mph</li> <li>• High Temps 95 - 110F</li> </ul>	1 - 8	4 - 8	7 - 14
<b>3. Adverse Weather Likely</b> Staffing & Timing as Directed (All company and contractor resources; localized mutual assistance)	19 - 50	500 - 20,100	1.1 - 6.0	<ul style="list-style-type: none"> <li>• Isolated to scattered thunderstorms</li> <li>• Moderate to heavy rainfall / Snow below 3000'</li> <li>• Peak sustained 20 - 30 mph</li> <li>• Peak wind gusts 35 - 45 mph; iso to 50 mph</li> <li>• High Temps 105 - 115F for consecutive days</li> </ul>	2 - 21	8 - 15	14 - 26
<b>4. Extreme Weather Possible</b> Staffing & Timing as Directed (All company and contractor resources; extensive mutual assistance)	51 - 125	8,600 - 30,000	2.8 - 10.0	<ul style="list-style-type: none"> <li>• Scattered to widespread thunderstorms</li> <li>• Moderate to heavy rainfall / Flooding Likely</li> <li>• Peak sustained 25 - 35 mph</li> <li>• Peak wind gusts 40 - 50 mph; iso to 55 mph</li> <li>• Moderate to Heavy snow below 2,500 - 3,000'</li> </ul>	4 - 59	15 - 32	26 - 55
<b>5. Extreme Weather Likely</b> Staffing & Timing as Directed (All company and contractor resources; extensive mutual assistance)	> 125	> 30,000	4.8 - 13.0	<ul style="list-style-type: none"> <li>• Widespread thunderstorms</li> <li>• Heavy rainfall / Flooding Likely</li> <li>• Peak sustained &gt; 30 mph</li> <li>• Peak wind gusts 50 - 60 mph+</li> <li>• Heavy snow below 2,500 - 3,000'</li> </ul>	> 30	> 32	> 55

\* SO = Number of Sustained Outages (transformer level and above) forecast for the day  
 \*\* CESO = Number of Customers Experiencing Sustained Outages forecast for the day  
 \*\*\* Based on 90% - 99% of Outages Restored By date

**Other Factors to Consider:**

- Storm stalls over the operating area
- Saturated soil conditions
- Foliage status/Full foliage exists
- On-going restoration activities from recent/prior storms
- Post Tropical/Tropical Storms
- "Atmospheric Rivers"
- Record Hot Temperatures (Cat3 Heat Events at Stockton Division usually require consecutive days of high temps above 105 - 115F)



### 5.1.3 Geosciences Alerts and Analysis

In coordination with Meteorology and the HAWC, PG&E's Geosciences issues two extreme weather-related alerts:

- Watch – an alert issued ahead of a forecast storm that has the potential for total precipitation sufficient to potentially trigger debris flows.
- Warning – an alert issued for heightened likelihood of debris flow potential based on actual precipitation measurements during the passage of a storm.

As necessary, PG&E Geosciences will disseminate maps showing cumulative precipitation and debris flow potentials near PG&E assets or facilities. They may also identify actual or potential ground movement locations threatening life safety and PG&E assets. See EMER-3105M Wildfire Annex for more details on debris flow monitoring.

In addition to debris flows, Geosciences also monitors for flooding, erosion and scour, and deep-seated landslides during high precipitation events.

To be added to the email distribution list for HAWC alerts, enter "HAWC" in your PG&E intranet browser, use the form link (top right button), and sign up for all HAWC facilitated alert notifications. This includes debris flow watches/warnings, observed land movement,



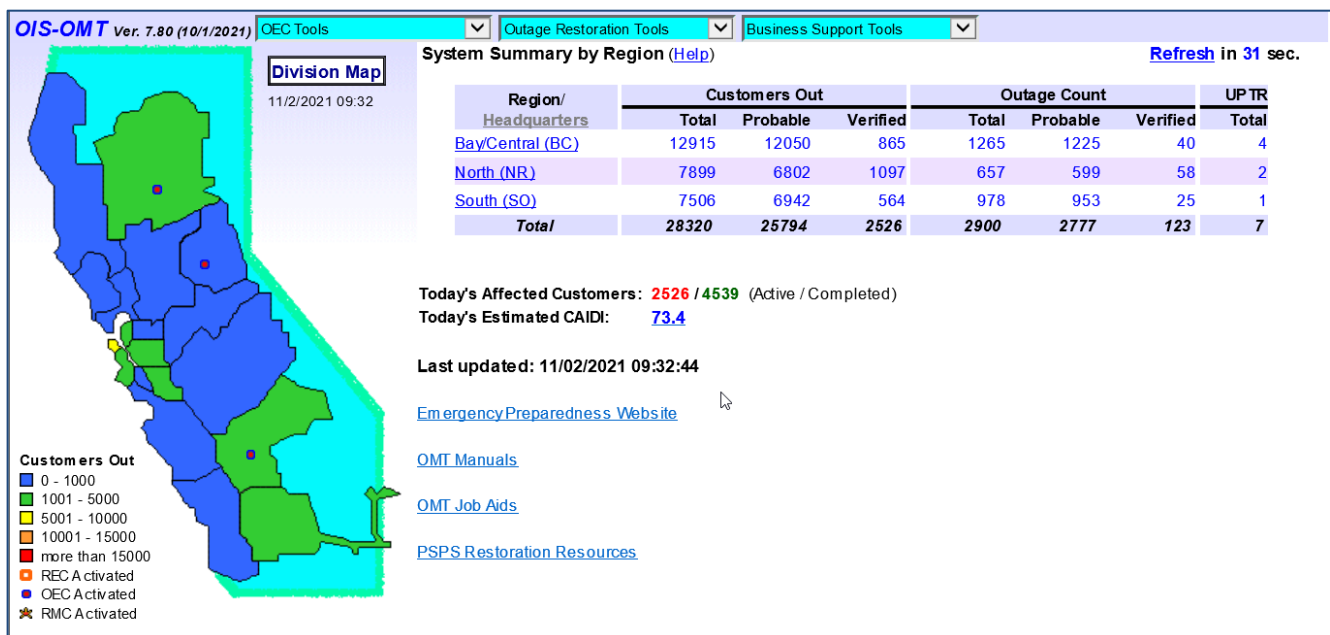
significant road hazards/washouts, flash flood warnings, avalanche warnings, and other immediate hazards.

### 5.1.4 Outage Information System - Outage Management Tool

Maintained by the PG&E's Business Application team, PG&E's [Outage Information System- Outage Management Tool \(OMT\)](#) (dashboard example) tracks real-time electric customer outages. The OMT is a web-based application used to gather and report information on customer outages, damage assessments, service restoration, and crew movements in emergency incidents affecting PG&E electric customers.

Electric distribution operators use the OMT on a daily basis to transmit outage information and coordinate the dispatch of electric troubleshooters and crews to outages within the PG&E service area. The OMT can also be used to identify a "Nested Outage" (i.e., when lower-level outages may be absorbed or rolled up into a new upstream outage) in cases when a customer on a new outage is also associated with a previous outage or an outage occurs within 30 minutes of a previously closed-out outage.

Figure 5-8: OMT Site



#### 5.1.4.1 Qualified Electrical Worker (QEW) Resource Status

PG&E tracks division-level QEW troubleshooter and crew resource statuses on OMT at [Crew Resources All Division \(pge.com\)](#) as shown in Figure 5-9.

Figure 5-9: QEW Electric Worker Status (Troubleshooters and Crews)

## Crew Resources for All Divisions (by Division)

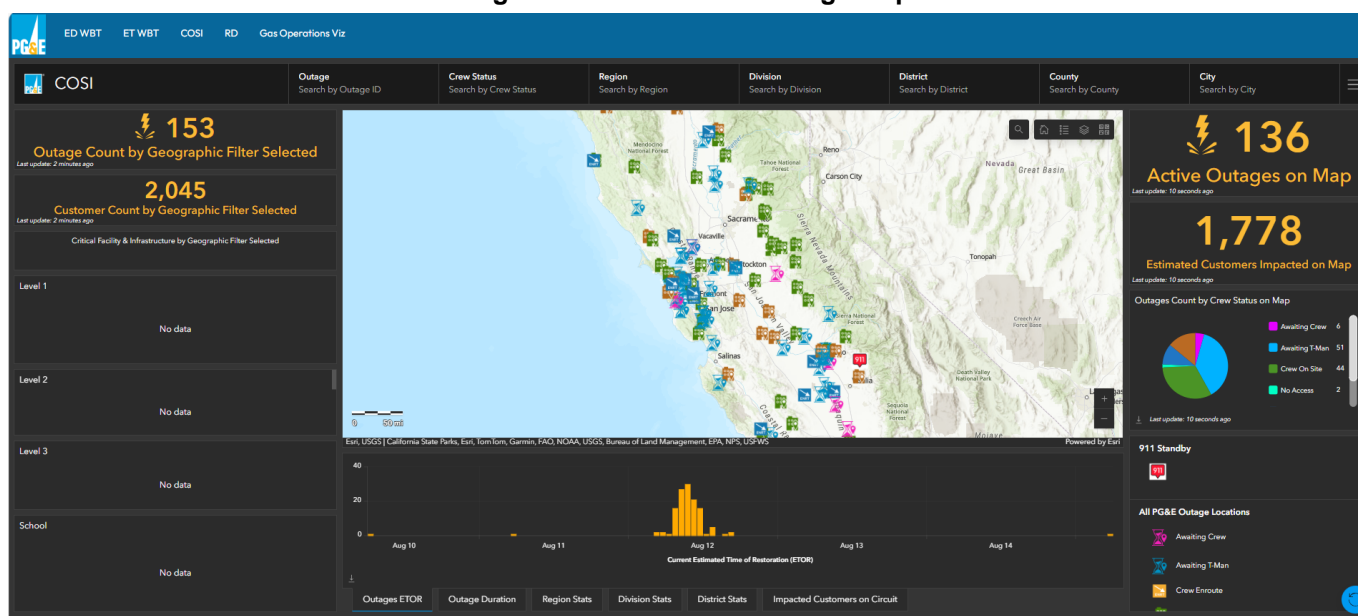
As of 7/16/2024 10:35:14 AM											Export to Excel									
Division	San Francisco	Peninsula	Diablo	East Bay	Mission	Central Coast	De Anza	San Jose	Fresno	Kern	Los Padres	Stockton	Yosemite	Sierra	Sacramento	North Valley	North Bay	Sonoma	Humboldt	Total
	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	# of Working Crew(s)	
ASSESSMT	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
FORESTER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MK SAFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T-MAN	10	10	9	9	8	19	7	11	21	8	9	18	19	21	16	29	10	13	19	266
CNTRATOR	0	2	1	1	0	3	1	0	1	1	3	5	2	6	4	1	5	5	1	42
ELECTRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GEN.CST.	0	1	2	1	1	0	1	1	0	1	0	0	2	0	0	1	0	0	0	11
MUTUAL.A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REPAIR	0	6	5	4	5	12	7	4	6	1	3	8	13	9	6	7	8	8	11	123
TREE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	10	19	17	15	14	34	16	16	30	11	15	31	36	36	26	38	23	26	31	444

The OMT is PG&E's primary outage status tool for electric asset-related emergency response. A copy of the [Outage Management Tool User Manual](#) is available on the OMT main screen at [OMT Main Menu \(pge.com\)](#).

## 5.1.5 Customer Outage Situational Intel Tool

The Customer Outage Situational Intel (COSI) tool at [Work Viz \(pge.com\)](#) is a data visualization tool that supports Regional Service Model maturity by streamlining workflows to access and visualize outage information in the context of both operational (e.g., region and division) and jurisdictional (e.g., city and district) boundaries. Enhancements to the COSI minimum viable product or "MVP" were released to a "live", production environment on July 22, 2024. The tool provides advanced situational awareness within emergency centers and Incident Management Teams (IMTs) enabling more effective integrated planning to respond to active outages. Figure 5-10 shows incident or event related outage operational status and useful elements such as outage locations, crew, and troubleshooter single-resource statuses.

Figure 5-10: Costumer Outage Map



To access the COSI dashboard, coworkers should submit a request to the GIS Production Viewer through [My Electronic Access \(MEA\)](#).

## 6. Training and Exercises

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### 6.1 Training Program

PG&E supports and conducts various training platforms throughout the year relating to and supporting PSPS response activity. This includes emergency preparedness, response principles, the CERP, and activity unique to a PSPS response.

PG&E's emergency preparedness and response efforts function on Incident Command System (ICS) principles. ICS and California Standardized Emergency Management System (SEMS) training courses are assigned to all emergency and coordination center personnel.

### 6.2 Exercise Program

PG&E's Emergency Preparedness & Response Strategy & Execution Exercise Team plans, coordinates, and conducts the exercises for PSPS and other hazards.

All exercises are designed and executed in accordance with Homeland Security Exercise and Evaluation Program (HSEEP) methodology and in alignment with the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the [Integrated Preparedness Plan](#) (IPP).

See [EMER-3001M-Company Emergency Response Plan \(CERP\)](#), *Training and Exercises Program*, for more information.

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## 7. After-Action Reports, Event Logs, and Records

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The After-Action Report (AAR) summarizes key information related to EOC activations and exercise play. EP&R S&E is responsible for ensuring that an AAR is completed for the annual exercise(s) as well as any incident involving the EOC activation. Contact AAR Process Owner or EP&R S&E Lead Technical Writer at EOCHotwash@pge.com for questions regarding the AAR.

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## 8. Appendices

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Appendix A, Acronyms

Appendix B, Directors' Alignment Call Agenda Template

Appendix C, Extreme Weather Playbook

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## Appendix A, Acronyms

Acronym	Meaning
AREP	Agency Representative
ARCOS	Automated Roster Callout System
CAISO	California Independent System Operator
CERP	Company Emergency Response Plan
COE	Critical Operating Equipment
CPUC	California Public Utilities Commission
EOC	Emergency Operations Center
EFO EMS	Emergency Field Operations Emergency Management Specialists
EP&R	Emergency Preparedness and Response
EP&R SE	Emergency Preparedness and Response Strategy and Execution
EPSS	Enhanced Powerline Safety Settings
ESRI	Environmental Systems Research Institute, Inc.
EWA	Extreme Weather Annex
FBU	Functional Business Unit
GCC	Grid Control Center
GDL	Guidance Document Library
GEC	Gas Emergency Center
GO	(CPUC) General Order
HAWC	Hazard Awareness and Warning Center
IC	Incident Commander
ICS	Incident Command System
ILIS	Integrated Logging and Information System
IVR	Interactive Voice Response
MEBA	Major Emergency Balancing Account
OEC	Operations Emergency Center
OMT	Outage Management Tool
PG&E	Pacific Gas and Electric Company
PSS	Public Safety Specialist
REC	Regional Emergency Center
SEMS	(California) Standardized Emergency Management System
SOPP	Storm Outage Prediction Project
TAD	Temperature Alarm Device
TPG	Temporary Primary Generator
WSAC	Weekly Situational Awareness Call

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## Appendix B, Directors' Alignment Call Agenda Template

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The suggested topics below are for discussion in preparation for a significant incident or event. The Directors' Alignment Call focuses around current and forecasted conditions, resource availability, and planning tactics. This information can be modified depending on the event scope and complexity.

### Directors' Alignment Call

- [Current SOPP](#)
- [Realtime Outage Impacts](#)
- [Infrared Pacific Loop](#)
- [Weather Page](#)

### Agenda

- Introduction
- Safety Discussion
- Meteorology
- HAWC
- Geosciences
- ET
  - GCC ETEC (system status, load at risk and grid stability)
  - Transmission Line M&C/Contractors
  - Substation M&C
- ED
  - Distribution Grid Operations
    - Dispatch
    - DCC (system status, load at risk and grid stability)
  - Field Operations (resource plans, staffing, priority planned work, By Sr. Director:
    - South Bay and Central Coast Region
    - Bay Region
    - Central Valley Region
    - North Coast Region
    - North Valley-Sierra Region
  - Field Operations Readiness (REC/OEC)
  - General Construction
- Distribution Design and Estimating Support
- Resource Unit
- New Business
- GIS/Mapping Support
- Contract Construction
- System Inspections
- Gas Operations
- Power Generation
- Diablo Canyon Power Plant (DCPP)
- Temporary Generation
- Vegetation Management

- Air Operations
- Logistics
- Information Technology
- Emergency Preparedness & Response Oversight and EOC readiness
  - EOC Team Days
  - EOC Team Nights
- Review and validation of meeting content or Action Items
  
- Action 1:
- Action 2:

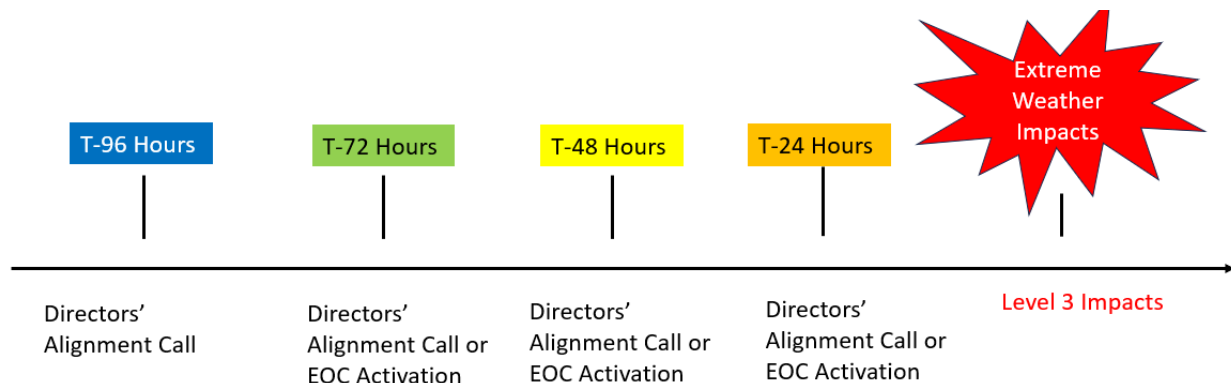
## Appendix C, Extreme Weather Playbook

To improve communication and respond timely and efficiently, PG&E has created this time-phased extreme weather response playbook. One of multiple tools in the PG&E emergency response toolbox, this playbook is used to coordinate and synchronize PG&E emergency operations across functional areas, at all levels. It provides a structure for how PG&E coworkers come together to address urgent extreme weather needs and keep internal and external stakeholders safe and informed.

This playbook accomplishes three extreme weather-related essential functions:

- Prescribe work assignments to organize the efforts of PG&E departments and functions for emergency response, restoration, and recovery.
- Provide a checklist of time-based actions to be accomplished by subject matter experts working together as emergency support functions.
- Support and provide organizational clarity to existing plans developed by PG&E as a hometown community member.

Derived from PG&E subject matter expert (SME) input across the PG&E enterprise, this extreme weather playbook identifies milestone actions across functions and teams at T-96 hours, T-72 hours, T-48 hours, and T-24 hours prior to a potential Level 3 extreme weather event.<sup>9</sup>



Playbook checklist actions (color-coded) support coordinated decisions and actions across functional areas and, when activated, EOC Command & General (C&G) staff positions. Checklist actions align PG&E functions under a structured, time-phased approach to ensure that each team operates optimally in its role to achieve the company's overarching objectives. When executed successfully, each function is aware of its role in the planning and timely execution of its actions in relation to other PG&E functions.

These actions may be taken in advance of or after extreme weather conditions.

<sup>9</sup> At Level 3, the EP&R Strategy & Execution Director or Vice President of EP&R may activate the company's EOC to coordinate incident resources, include movement and prestaging across regional boundaries in anticipation of areas of need.

## PG&E Functions



# **PLAY 1: T-96 HOURS**

## C.1 PLAY 1: T-96 HOURS

### Enterprise Health & Safety



- ☐ Summarize risks and hazards that can impact safety of coworkers working in the field and communities we serve.
- ☐ As necessary, ramp up field support staffing and reach out to PG&E's contract safety staffing agency to prepare to respond.
- ☐ As necessary, update personal protective equipment (PPE) on-boarding package for mutual assistance providers and contractors.
- ☐ As applicable, share availability and location of stocked tire chains for common sized tires and pre-stocked snow cleats for boots.

### Meteorology



- ☐ Provide estimated impacts for T-96-hour SOPP model.

### Geosciences



- ☐ Review meteorology sources for forecasted rainfall.
- ☐ Review National Weather Service (NWS) precipitation thresholds for burn scar areas.
- ☐ Check for NWS Flash Flood Warning Alerts.
- ☐ Review HAWC Notifications.
- ☐ Review Debris Flow Watch/Warning analysis document to determine alert status.
- ☐ As appropriate, request field reconnaissance and/or remote sensing data acquisition (e.g., lidar<sup>10</sup>, drone survey, and satellite imagery) leading up to the event and following the event as soon as site conditions are safe to do so. Pre-event

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<sup>10</sup> Light detection and ranging survey technology.



reconnaissance and data acquisition may be required if no prior baseline information exists.

### Hazard Awareness Warning Center



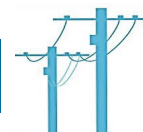
- ☐ Provide current all-hazard threat status.

### Grid Control Center, Electric Transmission Emergency Center



- ☐ Report electric transmission system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.
- ☐ As applicable, activate Capacity Shortage Event Incident Management Team.

### Electric Distribution Control Center



- ☐ Report electric distribution system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.
- ☐ Coordinate “down range” system operator field support.

### Electric Field Operations – South Bay and Central Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-96-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.

- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level Major Emergency Balancing Account (MEBA) cost tracking.<sup>11</sup>
- ☐ As applicable, monitor pilot Temperature Alarm Devices (TADs) on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in San Jose Division.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map (pge.com).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at Weather Map (pge.com) to determine damage assessment requirements.
- ☐ Activate OECs as required per EHS Emergency Response - EMER-4510S OEC Activation Requirements (sharepoint.com) standard.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – Bay Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-96-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.

<sup>11</sup> Account used to recover expenses for major emergencies. EMER-4510S, Operations Emergency Center (OEC) Activation Requirements, defines “major emergencies” as conditions where electric distribution facilities are at eminent hazard or have caused an outage during a level 2-5 emergency.

- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level Major Emergency Balancing Account (MEBA) cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in De Anza, Diablo, and Mission divisions.
- ☐ Activate OECs as required per EMER-4510S OEC Activation standard.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – Central Valley Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-96-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map (pge.com).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at Weather Map (pge.com) to determine damage assessment requirements.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.

- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – North Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-96-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

### Field Operations – North Valley/Sierra Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-96-hour resource plan.
- ☐ Report priority planned work.

- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map (pge.com).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at Weather Map (pge.com) to determine damage assessment requirements.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

#### Emergency Field Operations Emergency Management Specialists



- ☐ Identify operational impact potential.
- ☐ Advise electric emergency centers (i.e., REC, OEC) on readiness capabilities.

#### Distribution Design and Estimating Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

#### New Business



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

### GIS/Mapping Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

### Contract Construction



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

### System Inspections



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

### Gas Operations



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.
- ☐ As applicable, issue cold weather alerts and as required, service curtailments per [TD-4435S Gas System](#) Curtailment [Requirements](#).

### Power Generation



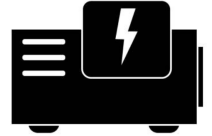
- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

### Diablo Canyon Power Plant (DCPP)



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

## Temporary Generation



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

## Vegetation Management



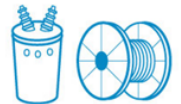
- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.
- ☐ As applicable, establish downed tree task force capability.

## Air Operations



- ☐ Prepare T-96-hour air operations support plan.
- ☐ Comply with AVI-3001 Helicopter Operations Field Manual requirements, to include special considerations for wind speed, direction, and variability.
- ☐ As applicable, establish post lightning aircraft patrol capability.

## Logistics



- ☐ Summarize T-96-hour operations support plan.
- ☐ Determine transformer inventory available and staged within Service Centers forecasted to be impacted by or in support of incident operations.
- ☐ Monitor transformer inventory levels at impacted Service Centers.
- ☐ As necessary, secure laydown yard sites proximate to potential lodging facilities.
- ☐ As necessary for snow and/or other potential impaired access, acquire tracked vehicles for field operations support.
- ☐ As applicable, determine PG&E materials support facilities (e.g., Marysville Material Facility, Fremont DC) in relation to routing and access to incident locations.

## Corporate Real Estate Strategy & Services



- ☐ As applicable, determine whether service centers planned for emergency resource staging are subject to incident related flooding.

## Information Technology



- ☐ Identify operational impact potential.
- ☐ Summarize T-96-hour operations support plan.

## Emergency Preparedness & Response



- ☐ Provide current emergency facility and mobile field incident management capability (i.e., EOC and Mobile Command Vehicle) status.
- ☐ Summarize T-96-hour operations support plan.
- ☐ As necessary, activate company EOC.
- ☐ Identify OEC and REC activation statuses.

## Customer



- ☐ Identify critical, essential electric customers in potential impact area.
- ☐ Identify critical, essential core gas customers in potential impact area.
- ☐ As applicable, identify most impacted counties from last low snow event to engage Community Based Organization (CBO) partners.

## Operations Communications/Public Information



- ☐ Develop media strategy and the public information plan.
- ☐ Oversee the development, approval and distribution of public information that is shared with employees, customers, media, government officials, and other external audiences



# **PLAY 2: T-72 HOURS**

## C.2 PLAY 2: T-72 HOURS

### Enterprise Health & Safety



- ☐ Summarize risks and hazards in the field that can impact coworker and community safety.
- ☐ As necessary, ramp up field support staffing and reach out to PG&E's contract safety staffing agency to prepare to respond.
- ☐ As necessary, update Personal Protective Equipment (PPE) on-boarding package for Mutual Assistance providers and contractors.
- ☐ As applicable, share availability of pre-stocked tire chains for common sized tires and pre-stocked snow cleats for boots.

### Meteorology



- ☐ Provide T-72-hour SOPP model impact estimates.

### Geosciences



- ☐ Review meteorology sources for forecasted rainfall.
- ☐ Review NWS precipitation thresholds for burn scar areas.
- ☐ Check for NWS Flash Flood Warning Alerts.
- ☐ Review HAWC Notifications.
- ☐ Review Debris Flow Watch/Warning analysis document to determine alert status.
- ☐ As appropriate, request field reconnaissance and/or remote sensing data acquisition (e.g., lidar, drone survey, and satellite imagery) leading up to the event and following the event as soon as site conditions are safe to do so. Pre-event reconnaissance and data acquisition may be required if no prior baseline information exists.

### Hazard Awareness Warning Center



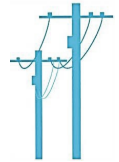
- ☐ Provide current all-hazard threat status.

### Grid Control Center, Electric Transmission Emergency Center



- ☐ Report electric transmission system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.

### Electric Distribution Control Center



- ☐ Report electric distribution system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.
- ☐ Coordinate “down range” system operator field support.

### Electric Field Operations – South Bay and Central Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-72-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in San Jose Division.

- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map (pge.com).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at Weather Map (pge.com) to determine damage assessment requirements.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – Bay Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-72-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in De Anza, Diablo, and Mission divisions.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.

- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – Central Valley Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-72-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map (pge.com).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at Weather Map (pge.com) to determine damage assessment requirements.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.
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### Electric Field Operations – North Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-72-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map ([pge.com](http://pge.com)).
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

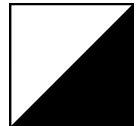
### Field Operations – North Valley/Sierra Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-72-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.

- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at Weather Map (pge.com).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at Weather Map (pge.com) to determine damage assessment requirements.
- ☐ Activate OECs as required per EMER-4510S OEC Activation Requirements.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

#### Emergency Field Operations Emergency Management Specialists



- ☐ Identify operational impact potential.
- ☐ Advise electric emergency centers (i.e., REC, OEC) on readiness capabilities.

#### Distribution Design and Estimating Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

#### New Business



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

### GIS/Mapping Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

### Contract Construction



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

### System Inspections



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

### Gas Operations



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.
- ☐ As applicable, issue cold weather alerts and as required, service curtailments per [TD-4435S Gas System Curtailment Requirements](#).

### Power Generation



- Identify operational impact potential.
- Summarize T-72-hour operations support plan.

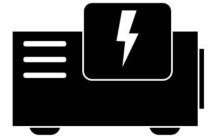
### Diablo Canyon Power Plant (DCPP)



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.



### Temporary Generation



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

### Vegetation Management



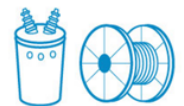
- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.
- ☐ As applicable, establish downed tree task force capability.

### Air Operations



- ☐ Prepare T-72-hour air operations support plan.
- ☐ Comply with [AVI-3001 Helicopter Operations Field Manual](#) requirements, to include special considerations for wind speed, direction, and variability.
- ☐ As applicable, establish post lightning aircraft patrol capability.

### Logistics



- ☐ Summarize T-96-hour operations support plan.
- ☐ Determine transformer inventory available and staged within Service Centers forecasted to be impacted by or in support of incident operations.
- ☐ Monitor transformer inventory levels at impacted Service Centers.
- ☐ As necessary and applicable, secure laydown yard sites proximate to potential lodging facilities.
- ☐ As necessary for snow and/or other potential impaired access, acquire tracked vehicles for field operations support.
- ☐ As applicable, determine PG&E materials support facilities (e.g., Marysville Material Facility, Fremont DC) in relation to routing and access to incident locations.

## Corporate Real Estate Strategy & Services



- ☐ As applicable, determine whether service centers planned for emergency resource staging are subject to incident related flooding.

## Information Technology



- ☐ Identify operational impact potential.
- ☐ Summarize T-72-hour operations support plan.

## Emergency Preparedness & Response



- ☐ Provide current emergency facility and mobile field incident management capability (i.e., EOC and Mobile Command Vehicle) status.
- ☐ Summarize T-72-hour operations support plan.
- ☐ As necessary, activate company EOC.
- ☐ Identify OEC and REC activation statuses.
- ☐ Deploy, as required, Incident Management Teams per [EMER-4501S Electric IMT Framework](#) to impacted OECs.

## Customer



- ☐ Identify critical, essential electric customers in potential impact area.
- ☐ Identify critical, essential core gas customers in potential impact area.
- ☐ As applicable, identify most impacted counties from last low snow event to engage Community Based Organization (CBO) partners.

## Operations Communications/Public Information



- ☐ Develop media strategy and the public information plan.
- ☐ Oversee the development, approval and distribution of public information that is shared with employees, customers, media, government officials, and other external audiences

# **PLAY 3: T-48 HOURS**

### C.3 PLAY 3: T-48 HOURS

#### Enterprise Health & Safety



- ☐ Summarize risks and hazards in the field that can impact coworker and community safety.
- ☐ As necessary, ramp up field support staffing and reach out to PG&E's contract safety staffing agency to prepare to respond.
- ☐ As necessary, update personal protective equipment (PPE) on-boarding package for mutual assistance providers and contractors.
- ☐ As applicable, share availability and location of pre-stocked tire chains for common sized tires and pre-stocked snow cleats for boots.

#### Meteorology



- ☐ Provide T-48-hour SOPP model impact estimates.

#### Geosciences



- ☐ Review meteorology sources for forecasted rainfall.
- ☐ Review NWS precipitation thresholds for burn scar areas.
- ☐ Check for NWS Flash Flood Warning Alerts.
- ☐ Review HAWC Notifications.
- ☐ Review Debris Flow Watch/Warning analysis document to determine alert status.
- ☐ As appropriate, request field reconnaissance and/or remote sensing data acquisition (e.g., lidar, drone survey, and satellite imagery) leading up to the event and following the event as soon as site conditions are safe to do so. Pre-event reconnaissance and data acquisition may be required if no prior baseline information exists.

#### Hazard Awareness Warning Center



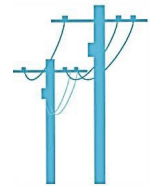
- ☐ Provide current all-hazard threat status.

### Grid Control Center, Electric Transmission Emergency Center



- ☐ Report electric transmission system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.

### Electric Distribution Control Center



- ☐ Report electric distribution system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.
- ☐ Coordinate “down range” system operator field support

### Electric Field Operations – South Bay and Central Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-48-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.

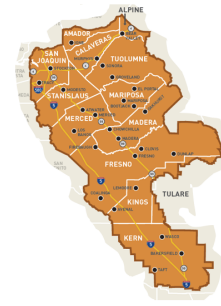
- ☐ As applicable, review subsurface electric asset heat mitigation status in San Jose Division.
- ☐ Activate OECs as required per [EHS Emergency Response - EMER-4510S OEC Activation Requirements \(sharepoint.com\)](#) standard.
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – Bay Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-48-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in De Anza, Diablo, and Mission divisions.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – Central Valley Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-48-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at [Weather Map \(pge.com\)](http://Weather Map (pge.com)).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at [Weather Map \(pge.com\)](http://Weather Map (pge.com)) to determine damage assessment requirements.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

### Electric Field Operations – North Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-48-hour resource plan.



- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

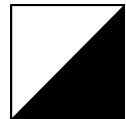
### Field Operations – North Valley/Sierra Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-48-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at [Weather Map \(pge.com\)](#).

- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at [Weather Map \(pge.com\)](http://Weather Map (pge.com)) to determine damage assessment requirements.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](http://AGREEMENT (ibew1245.com))) subsection 202.17 (Change of Hours - First Four Days).

#### Emergency Field Operations Emergency Management Specialists



- ☐ Identify operational impact potential.
- ☐ Advise electric emergency centers (i.e., REC, OEC) on readiness capabilities.

#### Distribution Design and Estimating Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

#### New Business



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

#### GIS/Mapping Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

#### Contract Construction



- ☐ Identify operational impact potential.

- ☐ Summarize T-48-hour operations support plan.

### System Inspections



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

### Gas Operations



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.
- ☐ As applicable, issue cold weather alerts and as required, service curtailments per [TD-4435S Gas System Curtailment Requirements](#).

### Power Generation



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

### Diablo Canyon Power Plant (DCPP)



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

### Temporary Generation



- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

## Vegetation Management



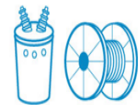
- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.
- ☐ As applicable, establish downed tree task force capability.

## Air Operations



- ☐ Prepare T-48-hour air operations support plan.
- ☐ Comply with [AVI-3001 Helicopter Operations Field Manual](#) requirements, to include special considerations for wind speed, direction, and variability.
- ☐ As applicable, establish post lightning aircraft patrol capability.

## Logistics



- ☐ Summarize T-48-hour operations support plan.
- ☐ Determine transformer inventory available and staged within Service Centers forecasted to be impacted by or in support of incident operations.
- ☐ Monitor transformer inventory levels at impacted Service Centers.
- ☐ As necessary and applicable, secure emergency sites proximate to potential lodging facilities.
- ☐ As necessary for snow and/or other potential impaired access, acquire tracked vehicles for field operations support.
- ☐ As applicable, determine PG&E materials support facilities (e.g., Marysville Material Facility, and Fremont DC) in relation to routing and access to incident locations.

## Corporate Real Estate Strategy & Services



- ☐ As applicable, determine whether service centers planned for emergency resource staging are subject to incident related flooding.



## Information Technology

- ☐ Identify operational impact potential.
- ☐ Summarize T-48-hour operations support plan.

## Emergency Preparedness & Response



- ☐ Provide current emergency facility and mobile field incident management capability (i.e., EOC and Mobile Command Vehicle) status.
- ☐ Summarize T-48-hour operations support plan.
- ☐ As necessary, activate company EOC.
- ☐ Identify OEC and REC activation statuses.
- ☐ Deploy, as required, Incident Management Teams per [EMER-4501S\\_Electric+IMT+Framework+Std+\(Rev+1\).pdf](#) to impacted OECs.

## Customer



- ☐ Identify critical, essential electric customers in potential impact area.
- ☐ Identify critical, essential core gas customers in potential impact area.
- ☐ As applicable, identify most impacted counties from last low snow event to engage Community Based Organization (CBO) partners in those areas earlier.

## Operations Communications/Public Information



- ☐ Develop media strategy and the public information plan.
- ☐ Oversee the development, approval, and distribution of public information that is shared with employees, customers, media, government officials, and other external audiences

# **PLAY 4: T-24 HOURS**

## C.4 PLAY 4: T-24 HOURS

### Enterprise Health & Safety



- ☐ Summarize risks and hazards in the field that can impact coworker and community safety.
- ☐ As necessary, coordinate the evacuation of coworkers pre- and post-incident.
- ☐ As necessary, ramp up field support staffing and reach out to PG&E's contract safety staffing agency to prepare to respond.
- ☐ As necessary, update personal protective equipment (PPE) on-boarding package for Mutual Assistance providers and contractors.
- ☐ As applicable, share availability of pre-stocked tire chains for common sized tires and pre-socked snow cleats for boots.

### Meteorology



- ☐ Provide T-24-hour SOPP model impact estimates.

### Geosciences



- ☐ Review meteorology sources for forecasted rainfall.
- ☐ Review NWS precipitation thresholds for burn scar areas.
- ☐ Check for NWS Flash Flood Warning Alerts.
- ☐ Review HAWC Notifications.
- ☐ Review Debris Flow Watch/Warning analysis document to determine alert status.
- ☐ As appropriate, request field reconnaissance and/or remote sensing data acquisition (e.g., lidar, drone survey, and satellite imagery) leading up to the event and following the event as soon as site conditions are safe to do so. Pre-event reconnaissance and data acquisition may be required if no prior baseline information exists.

### Hazard Awareness Warning Center



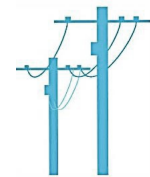
- ☐ Provide current all-hazard threat status.

### Grid Control Center, Electric Transmission Emergency Center



- ☐ Report electric transmission system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.

### Electric Distribution Control Center



- ☐ Report electric distribution system status.
- ☐ Report load at risk.
- ☐ Report grid stability status.
- ☐ As necessary, deploy Distribution Operators to OECs or RECs.
- ☐ As necessary, activate Electric Distribution Control Center (Concord, Fresno, Rocklin) Tap Line Desk for OMT circuit segment update reporting.
- ☐ As applicable, establish OEC Incident Command and General Staff structure to support/utilize Circuit Base Restoration Strategy.
- ☐ As necessary, use Public Safety Power Shutoff (PSPS) Circuit Base Process Model/Approach assigning Task Force Leads & Team Leads by circuit/substation, breaker, line recloser and/or device level.
- ☐ As necessary, establish Task Forces composed of Troubleshooters, Electric Repair Construction Crew/Crews, Make Safe Electric Crew/Crews, Vegetation Crew/Crews to patrol, assess, repair, and restore.
- ☐ As necessary, assign 911 Stand-By resources to Division Yards and confirm Electric Dispatch and Scheduling is dispatching accordingly in support of restoration Task Forces.
- ☐ As necessary, breakdown and balance available crews to enable damage assessment and job packet creation 4-5 hours ahead of work execution.



- ☐ Pre-stage PG&E resources (staff, equipment, and materials).



### Electric Field Operations – South Bay and Central Coast Region

- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-24-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in San Jose division.
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at [Weather Map \(pge.com\)](http://Weather Map (pge.com)) to determine damage assessment requirements.
- ☐ Shut down PG&E facilities and/or operations as required to protect personnel, equipment, and/or the system.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

## Electric Field Operations – Bay Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-24-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, review subsurface electric asset heat mitigation status in De Anza, Diablo, and Mission divisions.
- ☐ Shut down PG&E facilities and/or operations as required to protect personnel, equipment, and/or the system.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

## Electric Field Operations – Central Valley Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-24-hour resource plan.

- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at [Weather Map \(pge.com\)](http://Weather Map (pge.com)) to determine damage assessment requirements.
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at [Weather Map \(pge.com\)](http://Weather Map (pge.com)) to determine damage assessment requirements.
- ☐ Shut down PG&E facilities and/or operations as required to protect personnel, equipment, and/or the system.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

## Electric Field Operations – North Coast Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-24-hour resource plan.
- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ Shut down PG&E facilities and/or operations as required to protect personnel, equipment, and/or the system.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement (AGREEMENT (ibew1245.com)) subsection 202.17 (Change of Hours - First Four Days).

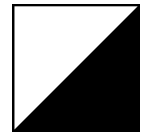
## Field Operations – North Valley/Sierra Region



- ☐ Identify current division level troubleshooter and crew allocation and, if applicable, shortfalls.
- ☐ Summarize T-24-hour resource plan.

- ☐ Report priority planned work.
- ☐ Notify the EFO EMS Duty Officer at [REDACTED] (external) of incident activation.
- ☐ Review all planned work for pending or cancellation based on weather impacts and available resources.
- ☐ Coordinate division level MEBA cost tracking.
- ☐ As applicable, monitor pilot TADs on oil-filled distribution transformers.
- ☐ As applicable, monitor PG&E Meteorology Operations and Analytics lightning ground strikes at [Weather Map \(pge.com\)](http://Weather Map (pge.com)).
- ☐ As applicable, correlate lightning strike locations with asset locations using PG&E's lightning monitoring network at [Weather Map \(pge.com\)](http://Weather Map (pge.com)) to determine damage assessment requirements.
- ☐ Shut down PG&E facilities and/or operations as required to protect personnel, equipment, and/or the system.
- ☐ Activate OECs as required per [EMER-4510S OEC Activation Requirements](#).
- ☐ As necessary, activate RECs.
- ☐ As necessary, pre-arrange represented field personnel schedules per January 1, 2022, IBEW Local 1245/PG&E Bargaining Unit Letter of Agreement ([AGREEMENT \(ibew1245.com\)](#)) subsection 202.17 (Change of Hours - First Four Days).

#### Emergency Field Operations Emergency Management Specialists



- ☐ Identify operational impact potential.
- ☐ Advise electric emergency centers (i.e., REC, OEC) on readiness capabilities.
- ☐ Advise electric emergency centers on activation triggers and processes per EMER 4510S and 4510P.
- ☐ Provide in person support to impacted electric emergency centers (i.e., REC, OEC).

#### Distribution Design and Estimating Support



- ☐ Identify operational impact potential.

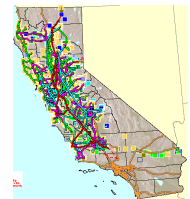
- ☐ Summarize T-24-hour operations support plan.
- ☐ As necessary, establish OEC night shift estimating and clerical support.

### New Business



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.

### GIS/Mapping Support



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.
- ☐ As necessary, activate and/or deploy mappers when projected to exceed 50 work tags for GIS and/or job closing documentation.

### Contract Construction



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.

### System Inspections



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.

### Gas Operations



- ☐ Identify operational impact potential.

- ☐ Complete T-24-hour operations support plan to include potential use of gas resources for debris cleanup.
- ☐ As applicable, issue cold weather alerts and as required, service curtailments per [As applicable, issue cold weather alerts and as required, service curtailments per TD-4435S Gas System Curtailment Requirements](#).
- ☐ As necessary, activate Gas Locate and Mark (L&M) coworkers to perform gas pipeline depth of cover surveys.

### Power Generation



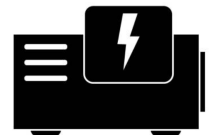
- ☐ Identify operational impact potential.
- ☐ Complete T-24-hour operations support plan to include potential use of hydro resources for debris cleanup.

### Diablo Canyon Power Plant (DCPP)



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.

### Temporary Generation



- ☐ Complete T-24-hour operations support plan.
- ☐ As necessary, provide temporary power generation per utility procedure [TD-2700P-23 Operational Use of Temporary Primary Generator Use on Distribution Primary Lines and Substation Equipment](#).

### Vegetation Management



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.
- ☐ As applicable, establish downed tree task force capability.

## Air Operations



- ☐ Prepare T-24-hour air operations support plan.
- ☐ Comply with [AVI-3001 Helicopter Operations Field Manual](#) requirements, to include special considerations for wind speed, direction, and variability.
- ☐ As applicable, establish proactive Air Ops Plan using both Helicopters and Drones, including identification of all qualified Flyers and Certified Drone Operators.
- ☐ As applicable, establish post lightning aircraft patrol capability.

## Logistics



- ☐ Summarize T-24-hour operations support plan, to include Identification of Staging Areas and Laydown Yards.<sup>12</sup>
- ☐ Determine transformer inventory available and staged within Service Centers forecasted
- ☐ to be impacted by or in support of incident operations.
- ☐ Monitor transformer inventory levels at impacted Service Centers.
- ☐ Deliver, as required, bottled water.
- ☐ As necessary for snow and/or other potential impaired access, acquire tracked vehicles for field operations support.
- ☐ As applicable, determine PG&E materials support facilities (e.g., Marysville Material Facility, Fremont DC) in relation to routing and access to incident locations.
- ☐ As applicable, secure Sno-Cat tracked vehicles and long line human and material load capabilities.
- ☐ As applicable, pre-stage all available Specialty Track/Snow Removal and Access Equipment from all Departments both supporting and not supporting impacted Divisions.

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<sup>12</sup> Where possible, secure laydown yard sites proximate to potential lodging facilities.



- ☐ As applicable, confirm inventory of 200 snow chains at Materials and Transportation Coordination Center (MTCC).
- ☐ As necessary, share availability of common, pre-stocked tire chains and snow cleats for boots.
- ☐ As necessary, identify tire chain installation locations proximate to snowfall locations for inbound crews and equipment.
- ☐ As applicable, identify 13 emergency field sites for environmental and land releases.<sup>13</sup>
- ☐ As necessary, coordinate with Caltrans and the California Highway Patrol to access asset and facility locations.
- ☐ Pre-stage PG&E resources (staff, equipment, and materials).

#### Corporate Real Estate Strategy & Services



- ☐ As applicable, determine whether service centers planned for emergency resource staging are subject to incident related flooding.

#### Information Technology



- ☐ Identify operational impact potential.
- ☐ Summarize T-24-hour operations support plan.

#### Emergency Preparedness & Response



- ☐ Provide current emergency facility and mobile field incident management capability (i.e., EOC and Mobile Command Vehicle) status.
- ☐ Summarize T-24-hour operations support plan.
- ☐ As necessary, activate Company EOC.
- ☐ Pre-stage PG&E resources (staff, equipment, and materials).

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<sup>13</sup> Per 02.21.2023 Wind-Low Snow Event lessons learned after action analysis.

- ☐ Identify OEC and REC activation statuses.
- ☐ Deploy, as required, Incident Management Teams per [EMER-4501S Electric IMT Framework Std](#) to impacted OECs.
- ☐ As necessary, coordinate OEC/Public Safety Specialists engagement with County and State agencies to prioritize access to roads parallel to PG&E mainline assessment and restoration priorities.

#### Customer, Local Government Affairs



- ☐ Assess as required deployment of CRCs to augment public agency community support and evacuation centers (i.e., cooling, and warming centers).
- ☐ As necessary, conduct outreach and communication to customers and Public Safety partners on the length and scope of potential outages.

#### Corporate Communications, Customer, Local Government Affairs



- ☐ Use visual storytelling including increased use of imagery and video to tell PG&E's story, engender trust and communicate empathy.

#### Customer, Supply Chain/Materials



- ☐ As necessary, prepare to deploy per [EMER-7001P-05 All Hazards Community Resource Center Deployment](#) Community Resource Center (CRC) augmentation for public agency community support centers.

#### Customer



- ☐ Identify critical, essential electric customers in potential impact area.
- ☐ Identify critical, essential core gas customers in potential impact area.
- ☐ As applicable, identify most impacted counties from last low snow event to engage Community-Based Organization (CBO) partners in those areas earlier.
- ☐ Offer as necessary per [EMER-7001S Enhanced Customer and Community Support During All Hazards Standard](#) enhanced customer and community support offerings to County Emergency Management Agency.

- ☐ Deliver, as required, back-up power for Emergency Services CC1 facilities (e.g., hospitals, fire and police stations, and Emergency Operations Centers).
- ☐ As necessary, prepare to provide temporary power at mass care shelters (CC2 Emergency Services facilities).
- ☐ As necessary, coordinate temporary power generation per utility procedure [TD-2700P-23 Operational Use of Temporary Primary Generator Use on Distribution Primary Lines and Substation Equipment](#).

#### Operations Communications/Public Information



- ☐ Develop media strategy and the public information plan.
- ☐ Oversee the development, approval and distribution of public information that is shared with employees, customers, media, government officials and other external audiences

## Appendix D, Additional Response Elements by Hazard

Extreme weather response requires a clear understanding of response elements. The following table provides a summary of additional operational requirements aligned to extreme weather categories.

**Table 8-1: Response Elements**

<b>Response Elements</b>	<b>Heavy Precipitation</b>	<b>Mainstem River Flooding</b>	<b>Tulare Lake Scenario</b>	<b>Low Snow</b>	<b>Heat</b>	<b>Thunderstorm &amp; Lightning</b>	<b>Wind</b>
Shut down of PG&E facilities and/or operations to protect personnel, equipment, and/or the system.	X	X	X				X (per EH&S guidance)
Establishment of regional response tactics and processes.	X	X	X	X	X	X	X
Evacuation of personnel pre- and post-incident.	X	X	X				
Need to pre-stage PG&E resources (staff, equipment, and materials).				X			X
Use of Sno-Cat tracked vehicles and long line human and material load techniques.				X			
Identification of tire chain installation locations proximate to snowfall for inbound crews and equipment.				X			
Identification of critical, essential (Electric) and core (Gas) customers in the potential impact area.	X	X	X	X	X		X
Acquisition of public agency organized cooling center locations, including senior centers, community centers, shopping malls, churches, and other potential temporary facilities.					X		
Acquisition of transformer inventory available within the PG&E system and within each service					X	X	

Response Elements	Heavy Precipitation	Mainstem River Flooding	Tulare Lake Scenario	Low Snow	Heat	Thunderstorm & Lightning	Wind
center forecasted to be impacted.							
Identification of regionally controlled commodities.	X	X	X	X	X	X	X
Monitoring of transformer inventory levels at impacted service centers to ensure adequate stock throughout the incident.					X		
Monitor Temperature Alarm Devices.					X		
Robust damage assessment and estimating support for job package creation.	X	X	X	X	X	X	X
Assessment of vegetation failure rates.	X			X			X
Establish downed tree task force capability.	X			X		X	X
Assessment of locations and/or facilities impaired by or made non-accessible due to weather damage	X	X	X				X
Establish post lightning aircraft patrol capability.						X	
Monitoring of weather conditions to comply with safe aerial equipment operations.	X					X	X
Compliance with AVI-3001M, Helicopter Operations Field Manual requirements, to include special considerations for wind speed, direction, and variability.							X