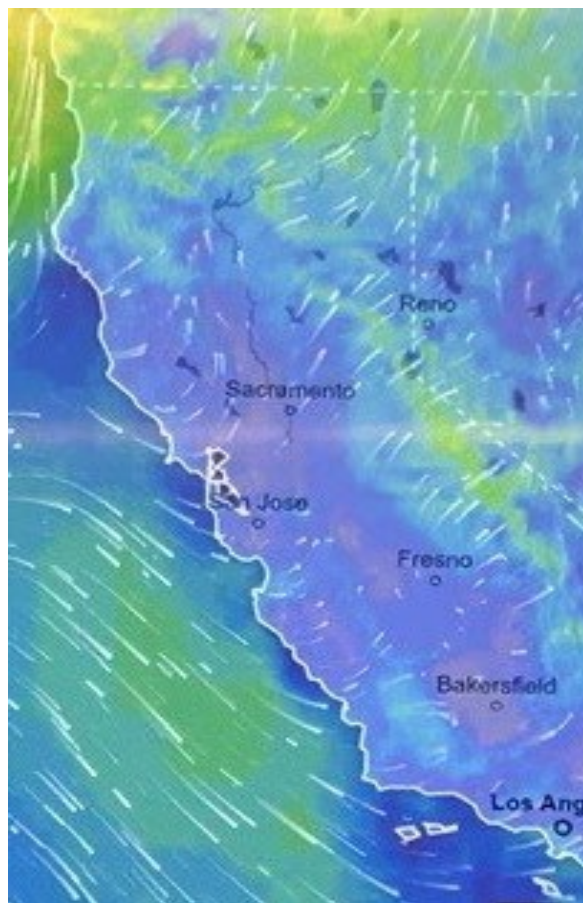




# Public Safety Power Shutoff (PSPS) Tabletop Exercise (TTX)

March 19, 2024

## After Action Report (AAR)



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2024 Public Safety Power Shutoff (PSPS)  
Tabletop Exercise (TTX)  
After Action Report (AAR)



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## INTRODUCTION

Pacific Gas & Electric (PG&E) conducted the 2024 PSPS Tabletop Exercise (TTX) on March 19, 2024. This exercise tested PG&E's ability to prepare for, respond to, and recover from a systemwide PSPS event based on the most recent PSPS Annex update (August 2023, v8). The exercise's primary focus was to give an annex update overview and validate the plan by testing the PSPS response and crisis management decision-making process.

## EXERCISE OVERVIEW

The one-day TTX was conducted to fulfill the CPUC's requirement to exercise the PSPS Annex to the Company Emergency Response Plan (CERP). The primary goal was to test PG&E's capability to prepare for, respond to, and recover from a PSPS event that put the company assets, customers, reputation, and/or safety at risk.

## EXERCISE OBJECTIVES

The TTX focused on six exercise objectives aligned to PG&E's incident management core capabilities.

1. **Objective 1 — Planning:** Implement a planning cycle according to CERP procedures, PSPS Annex, and ICS principles that uses the circuit information provided to conduct a PSPS and develop a restoration plan prior to receiving the "All Clear" from the Officer-in-Charge (OIC).
2. **Objective 2 — Operational Coordination and Communication:** Implement a response structure that effectively integrates EOC sections, Functional Areas (FAs), field crews, and external partners into a cohesive team capable of successfully aligning operational activities with internal and external priorities to safely manage the PSPS event.
3. **Objective 3 — Public Information and Warning:** Communicate strategic and required messages to key audiences including PG&E personnel, the public, response partners, and customers including developing press releases, social media posts, and frequently asked questions (FAQs) for the public and delivering required notifications to California Governor's Office of Emergency Services (Cal OES), California Public Utilities Commission (CPUC), and other regulatory bodies.
4. **Objective 4 — Situational Awareness:** Support company-wide situational awareness by establishing and maintaining a common operating picture across the response organizational structure to meet the needs of relevant internal and external stakeholders impacted by PSPS (e.g., critical, medical baseline, and commercial customers).
5. **Objective 5 — Critical Resources:** Analyze the impacted area to prioritize available resources in a way that reduces physical security concerns and minimizes impacts of the shutoff to company facilities and other critical infrastructure.
6. **Objective 6 — Natural and Cultural Resources:** Protect natural and cultural resources and historic properties through appropriate planning, mitigation, response, and recovery actions to preserve, conserve, rehabilitate, and restore them consistent with post-disaster community priorities and best practices and in compliance with applicable environmental and historic preservation laws and executive orders.



## EXERCISE ASSUMPTIONS AND ARTIFICIALITIES

In any exercise, assumptions and artificialities may be necessary to complete exercise play in the time allotted and/or account for logistical limitations. Such assumptions and artificialities are inherent in any exercise and are intended to augment, rather than distract from the scenario.

### Assumptions

Assumptions constituted the implied factual foundation for the exercise, and as such were assumed to be present before the exercise started. The following general assumptions applied to the exercise:

- The exercise was conducted in a no-fault environment wherein systems and processes, not individuals, were evaluated.
- The exercise scenario was plausible, and events occurred as they were presented.
- There were no “hidden agendas” nor were there any trick questions.

### Artificialities

The scenario assumed certain player actions throughout each of the modules, so players first discussed the actions stipulated by the scenario; however, players were encouraged to engage in “what if” discussions of alternative scenario conditions.



## EXERCISE SCENARIO

PG&E Meteorology tracked a dry, offshore wind event expected to develop Thursday, April 18<sup>th</sup>, 2024, with increasing winds during the late morning timeframe, before reaching peak intensity Thursday evening. Wind speeds were expected to be highly variable, reaching 25 – 35 mph with gusts of 45 – 55+ mph across elevated terrain. The Meteorology Services team implemented a Distribution System Operations (DSO) Storm Outage Prediction Project (SOPP) model to determine the severity of the incident.

The SOPP Model was used to predict the daily outage volume and resources needed to respond to weather events. DSO SOPP Model then projected a Cat 2 system total wind event, with Cat 3 outage totals possible for some divisions, indicating that significant adverse weather was possible. The DSO SOPP model showed the potential for up to 56,500 customers to be impacted on Thursday, April 18<sup>th</sup> and approximately 64,600 for Friday, April 19<sup>th</sup>.

The tabletop exercise discussion was covered in 4 modules, where each module addressed the phases of a PSPS event, as described in the following paragraphs.

### MODULE 1 - EVENT IDENTIFICATION & READINESS POSTURE

The PSPS Program Management Office provides an in-depth review of the PSPS Annex, to include the new PSPS EOC Section. The review includes PSPS process timeline, decision meetings, communication execution, overview of the PSPS Section positions, and an overview of the PSPS post-event reporting. When PG&E's Meteorology department identifies forecast models that show the potential for developing R5-Plus level conditions and there is advance time before de-energization is forecasted to be required, the on-call EOC Commander can call on representatives from select sections and officers to meet, track developing conditions, perform readiness tasks where possible, and when warranted, activate the EOC for a potential PSPS event. Readiness Posture is equivalent to EOC Activation Level 2, Enhanced Steady-State/Partial Activation, described within National Incident Management System (NIMS) as "certain EOC team members/organizations are activated to monitor a credible threat, risk, or hazard and/or to support the response to a new and potentially evolving incident." Readiness Posture concludes when the EOC activates. Required notifications to state agencies are sent upon EOC activation. 72-hour notifications to public safety partners are also sent at this time.

### MODULE 2 - EOC ACTIVATION, EVENT SCOPING, PLANNING AND NOTIFICATION

Event Scoping refers to the activity of determining which circuits are in scope based on Time-Place polygons developed by Meteorology. Electric Distribution conducts an analysis of impacted circuits that results in the initial Distribution Scope, while Electric Transmission conducts a direct impact analysis which results in the initial Transmission Scope. These initial scopes are then presented for approval and notification, which takes place during OIC Decision B (Approve Initial Scope) and C (Approve Initial Customer Notifications).

### MODULE 3 - DE-ENERGIZATION AND NOTIFICATION, EVENT MONITORING

Following OIC Decisions B and C, Electric Transmission conducts a Power Flow Analysis, which analyzes downstream impacts. Coordination with CAISO also takes place at this time. Further





refinement of the scope, including associated customer impacts, results in the Final Scope. This is presented for approval as part of OIC Decision D (Approve Final Scope), which is the final authority to de-energize power to affected circuits. OIC Decision E (Approve Additional Notifications) takes place concurrently and results in final customer and external agency notifications. Field crews and Control Center personnel then execute the de-energization through a series of functions in the control center and along circuits in the field. This is done in advance of the expected start time of the outage-producing wind event to prevent the ignition of fires caused by airborne debris contacting energized circuits, or by an energized circuit contacting the ground. The EOC Commander may call for a “Confirm/Cancel/Delay” decision meeting in ad hoc fashion if they determine that the predicted weather event may not be materializing, if the event’s timeline has shifted, or if further decision making is required.

#### **MODULE 4 - ALL-CLEAR, PATROL AND RESTORE, NOTIFICATION**

After the weather event has passed, Meteorology will advise the EOC Commander that conditions are dissipating. This will trigger OIC Decision F (Weather All-Clear). Weather condition dissipation may take place at different times for each Time-Place as such there may be several OIC-F meetings to determine the All-Clear based on varying conditions. During the weather event, Playbook F will have been developed, which is the Patrol and Restoration Plan. Upon approval of OIC-F, field crews and control center personnel begin the task of re-energizing impacted circuits. This process includes the patrol and inspection of every circuit that was de-energized to identify and repair any damage that occurred during the wind event. Such instances of damage are reported to the Intelligence and Investigations Section in the EOC for documentation and compliance reporting purposes. Circuits are required to be re-energized within 24 hours of the All-Clear decision for a given Time-Place, barring any damage to the system or other factors that would require repairs prior to re-energization. The final step in this process is the notification to customers that their service has been restored.



## MODULE DISCUSSIONS

### MODULE 1 DISCUSSION

Module 1 was discussed in plenary session on the EOC Main Floor. The PSPS Program Management Office provided an in-depth review of the PSPS Annex, which included the new PSPS EOC Section. The review included a PSPS process timeline, decision meetings, communication execution, overview of the PSPS Section positions, and an overview of the PSPS post-event reporting.

### MODULE 2-4 DISCUSSION

To enable more in-depth discussions, the participants were broken into three separate discussion groups for Modules 2-4 (described in detail below). Following the timed breakout session, the three groups returned to the plenary session to participate in a facilitated discussion about the key findings from their breakout groups.

#### Breakout Sessions

The groups were:

- Breakout Session A: Customer Strategy, Liaison, PIO, & External Partners
- Breakout Session B: PSPS Team, IT, Electric Distribution, & Electric Transmission
- Breakout Session C: Command & General Staff, EOC, RECs, & OECs



## KEY FINDINGS

On March 19, 2024, representatives from various Functional Areas (FAs), PG&E leadership, and external public safety partners participated in PG&E's 2024 PSPS Tabletop Exercise. The following sections provide a comprehensive summary of the findings identified during the exercise.

## ASSESSMENT OF OBJECTIVES

Objective	Met/Not Met	Rationale
Planning	Met	Clear understanding and execution of entire PSPS Process; August 2023 PSPS Annex (v8) updated prior to exercise.
Operational Coordination and Communication	Met	Enhanced level of Command & Control between echelons of support at the Division, Region, and Company EOC levels.
Public Information and Warning	Met	Improved Customer and Agency notification process
Situational Awareness	Met	Intelligence gathering tools between Meteorology & Fire Science and the HAWC elements are vastly improved over earlier versions
Critical Resources	Met	Prudent allocation of resources and clear understanding of incident priorities
Natural and Cultural Resources	Met	Vastly improved awareness and prioritization of attention to sensitive cultural sites and environmental protection



## IDENTIFIED STRENGTHS OR BEST PRACTICES

- ❖ Creation of the PSPS Section in the EOC has provided a more streamlined approach to operations and critical decision making.
- ❖ The continued increase of PG&E weather stations and wildfire camera installations has led to extremely accurate real-time situational awareness and understanding of risk specific to PSPS and Wildfire conditions.
- ❖ Timing of this TTX before the Full-Scale Exercise provided prime opportunity for key personnel to refresh PSPS-specific skills and procedures.
- ❖ Vendor pre-planning greatly streamlined the logistics process.
- ❖ Partnership with external agencies has reached a state of maturity; this TTX saw an external partner agency attend *in-person* and provide real time input and feedback.
- ❖ The PSPS Program Management Office (PMO) Team's two branches (Technology and Process) demonstrated the deep and granular understanding of the PSPS risks, system configurations, processes, and procedures.

## AREAS FOR IMPROVEMENT/DEVELOPMENT

**Area for Improvement 1:** Three key methods which are utilized to communicate PSPS information to agencies and customers are not synchronized.

**Analysis:** Tabletop participants noted there were three key applications and methods utilized to communicate PSPS scope, timing, and information to agencies and customers. The PSPS Portal, the PG&E website and direct customer notifications were discussed as examples. While each of these methods were agreed to be effective, it was noted they were not synchronized and required individual processes to update as the PSPS event evolved. As a result, updates did not appear at the same time across each platform.

**Recommendation:** Operational coordination and communication could be improved by utilizing technology to synchronize PSPS-related information delivered across all notification platforms.

**Area for Improvement 2:** PG&E EOC command staff were unfamiliar with the EOC Executive Summary and State Executive Briefing process.

**Analysis:** The PG&E Public Safety Power Shutoff Annex to the Company Emergency Response Plan, EMER-3106M, covers roles and responsibilities and the steps for Liaison and Plans sections to prepare the State Executive Briefing and the EOC Executive summary. However, in the exercise, the EOC command staff who were in the positions to deliver these briefings, were unfamiliar with the briefing process.



**Recommendation:** To increase familiarity and develop consistency with delivering EOC Executive and State Briefings, increased training and job shadowing for EOC Commanders should be performed specific to certain procedures that not all EOC Commanders may have experience with.

**Area for Improvement 3:** Additional EOC role-specific training is needed for PSPS response events, especially for the newly recruited team members who have not worked a PSPS event previously.

**Analysis:** PSPS events require EOC members to perform specific roles and responsibilities in the EOC which may differ from typical storm or emergency response actions. The PSPS Annex to the Company Emergency Response Plan, EMER-3106M, contains detailed information about roles and responsibilities and was found to be a valuable guidance document. However, during the exercise the EOC members who had not previously worked a PSPS event or were newly recruited to the EOC would have benefitted from position specific training for PSPS.

**Recommendation:** To increase situational awareness specific to PSPS response, new EOC members should be profiled for PSPS Web-Based Training (WBT) as soon as they are identified for a role. Utilizing annual exercises for staff training and practice would also increase capabilities for PSPS response.

**Area for Improvement 4:** There is no consistent accountability process across PG&E functional areas to mitigate safety risk associated with single-person field crews operating in areas without cellular or radio communications coverage.

**Analysis:** PSPS events often require field crews to operate and inspect equipment in remote areas. There is no consistent accountability process across PG&E functional areas to mitigate safety risk associated with single-person field crews operating in areas without cellular or radio communications coverage.

**Recommendation:** While this AAR was in draft, PG&E has developed a Lone-Worker standard through the Enterprise Health & Safety Department, which will be implemented throughout the workforce to which this matter applies.



## APPENDIX A IMPROVEMENT PLAN

As part of the exercise evaluation process, improvement planning provides an opportunity to build upon Areas for Improvement (AFI)s to identify specific corrective actions. Following input from PG&E's FA leadership, PG&E will complete the Improvement Plan to address AFIs and lessons learned stemming from this exercise. \*CAP (PG&E's Corrective Action Program)

Core Capability	Area for Improvement	Corrective Action	Responsible FA	FA Point of Contact	Start Date	End Date	CAP Needed
Operational Coordination and Communication	Three key methods which are utilized to communicate PSPS information to agencies and customers are not synchronized: <ul style="list-style-type: none"><li>• PSPS Portal</li><li>• Public PG&amp;E website</li><li>• Notifications delivered to customers</li></ul>	Explore technology options to synchronize PSPS-related information delivered across all platforms.	PSPS PMO  Digital Strategy  Customer Care  Electric OPS		5/19/24	12/31/24	No; ETOR and other information accuracy initiatives led by PSPS PMO already in progress.



Core Capability	Area for Improvement	Corrective Action	Responsible FA	FA Point of Contact	Start Date	End Date	CAP Needed
Operational Coordination and Communication	PG&E EOC command staff was unfamiliar with the EOC Executive Summary and State Executive Briefing process.	Conduct role-specific training for key personnel on identified subject matter.  Include content on EOC Executive Summary and State Executive Briefing in future updates of G-611-M EOC Management Course.  Ensure all newly appointed EOC Commanders conduct a shadowing evolution in the role prior to their first deployment.	PSPS PMO  EP&R T&E  EP&R Response		5/19/24   9/1/24	9/1/24   9/1/25	No
Situational Awareness	There is no consistent accountability process across PG&E functional areas to mitigate safety risk associated with single-person field crews operating in areas without cellular or radio communications coverage.	Determine and implement mitigants to reduce (or eliminate) residual risk to an acceptable level.	Ent. Health & Safety	Matt Hayes	Complete	N/A	
Situational Awareness	Additional EOC role-specific training is needed for PSPS response events, especially for the newly recruited team members who have not worked a PSPS event previously.	Develop role-specific training and exercise material for select work groups and EOC positions.	EP&R T&E  EP&R Resp		Complete	N/A	



Core Capability	Area for Improvement	Corrective Action	Responsible FA	FA Point of Contact	Start Date	End Date	CAP Needed
Exercise Design	Slight disruptions in audiovisual aids caused by the hybrid nature of the TTX.	Explore technology options to reduce audio feedback and synchronize Teams presentation with VERC Video Wall Display.	EP&R Resp  VERC IT		5/19/24	12/31/24	No





## APPENDIX B EXTERNAL EXERCISE PARTICIPANTS

Several Federal, state, local, and tribal partners observed the PSPS Tabletop Exercise "X" indicates entity participated, "I" indicates entity was invited (participation not confirmed).

Table 1: External Organizations Participating in the PSPS TTX

Participating External Agency	Player	Observer
<b>State/Federal Agency Partners</b>		
California Governor's Office of Emergency Services (Cal OES)	X	
California Department of Forestry and Fire Protection (CAL FIRE)		X
California Public Utility Commission (CPUC)	X	
<b>Local Agency Partners</b>		
Marin County OES	X	
Napa County OES		X
Yolo County OES	X	
Fresno County OES		X
Mariposa County OES	X	
Calaveras County OES		X
Madera County OES	X	
Butte County OES		I
Sonoma County OEM		I
Lake County OES		I
Trinity County OES		I
Amador County OES	X	
Mendocino County OES		I
Shasta Count OES		X
El Dorado County OES		X
Contra Costa County OES		X
Tehama County OES		X
<b>Utility Partners</b>		
Northern California Power Agency	X	
City of Lompoc Electric		X



## APPENDIX C ACRONYMS

AAR	After-Action Report
AFI	Areas for Improvement
AFN	Access Functional Needs
C/E/S	Controller/Evaluator/Simulator
Cal OES	California Governor's Office of Emergency Services
CAP	Corrective Action Program
CBO	Community Based Organizations
CCECC	Customer Contact Emergency Coordination Center
CERP	Company Emergency Response Plan
CPUC	California Public Utilities Commission
CRESS	Corporate Real Estate Strategy and Services
CSO	Customer Strategy Officer
CWSP	Community Wildfire Safety Program
DCC	Distribution Control Center
DCPP	Diablo Canyon Power Plant
DSO	Distribution System Operations
EDEC	Electric Distribution Emergency Center
EEG	Exercise Evaluation Guide
EndEx	End of Exercise
EOC	Emergency Operations Center
EP&R	Emergency Preparedness and Response
ETEC	Electric Transmission Emergency Center
ExPlan	Exercise Plan
FAQ	Frequently Asked Question
FBU	Functional Business Units
FCC	Facility Coordination Center
FEMA	Federal Emergency Management Agency
FIN	Finance & Administration Section
FSE	Full Scale Exercise
GCC	Grid Control Center
HRCC	Human Resources Coordination Center
HSEEP	Homeland Security Exercise and Evaluation Program
I&I	Intelligence & Investigation Section
ICS	Incident Command System
ITCC	Information Technology Coordination Center



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LNO	Liaison Officer
LOG	Logistics Section
MSEL	Master Scenario Events List
MTCC	Materials and Transportation Coordination Center
NLT	No Later Than
OEC	Operations Emergency Center
OIC	Officer-in-Charge
OPS	Operations Section
PauseEx	Pause Exercise
PG&E	Pacific Gas & Electric
PIO	Public Information Officer
PLANS	Planning Section
PMO	Project Management Office
POC	Point of Contact
PSPS	Public Safety Power Shutoff
QLR	Quick Look Report
REC	Regional Emergency Center
ResumeEx	Resume Exercise
SimCell	Simulation Cell
SIPT	Safety and Infrastructure Protection Teams
SO	Safety Officer
SOPP	Storm Outage Prediction Project