



# Public Safety Power Shutoff (PSPS) Tabletop Exercise (TTX) May 17, 2022

## After Action Report (AAR)



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## HANDLING INSTRUCTIONS

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## INTRODUCTION

Pacific Gas & Electric (PG&E) conducted the 2022 PSPS Tabletop Exercise (TTX) on May 17, 2022. This exercise tested PG&E's ability to prepare for, respond to, and recover from a systemwide PSPS event. The exercise's primary focus was to test PSPS response and crisis management decision-making rather than individual technical competency.

## EXERCISE OVERVIEW

The one-day virtual 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 puts company assets, customers, reputation, and/or safety at risk.

### Exercise Scenario

The exercise scenario consisted of a dry, offshore wind event developing systemwide with increasing winds during afternoon hours. Sustained Winds were 25-35 MPH with maximum wind gusts reaching 45-55+ MPH, primarily over elevated terrain. The scope of the event was postulated to impact approximately 70,000 customers. The scenario was divided into four distinct modules or activities, or phases, designed to simulate the approximate stages of an incident:

### Module 1: Readiness Posture

When PG&E's Meteorology department identifies forecast models that have 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 make a recommendation to the OIC to 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 with OIC Decision A, which if approved triggers the activation of the EOC and the execution of required notifications to state agencies.

### Module 2: Event Scoping, Planning, 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: Response (De-Energization and Notification)**

Following OIC Decisions B and C, Electric Transmission conducts a Power Flow Analysis, which analyzes downstream impacts. Coordination with CAISO takes place during this time as well. 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, Monitor, Restore, Patrol, Notifications**

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 conditions dissipating 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 took place 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.



## 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 use 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 Business Units (FBUs), 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 constitute the implied factual foundation for the exercise, and as such are assumed to be present before the exercise starts. The following general assumptions apply to the exercise:

- The exercise is conducted in a no-fault environment wherein systems and processes, not individuals, will be evaluated.
- The exercise scenario is plausible, and events occur as they are presented.
- There is no “hidden agenda” nor are there any trick questions.

### Artificialities

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



## KEY FINDINGS

On May 17, 2022, representatives from various Functional Business Units (FBU), PG&E leadership, local agency and tribal partners<sup>1</sup> participated in PG&E's 2022 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; critical reference documents up to date prior to the exercise
Operational Coordination and Communication	Met	Interaction between sections and branches within the EOC and critical ancillary entities
Public Information and Warning	Met	Attention to customer and external agency notifications
Situational Awareness	Met	Situational Awareness products significantly enhance ability to mitigate PSPS events in granular detail
Critical Resources	Met	Identification and adherence to criteria for use of emergency field sites and other assets
Natural and Cultural Resources	Met	Consideration of the effect that restoration work can potentially have on sensitive cultural and historical sites and infrastructure, and implementation of mitigants to ensure protection and preservation thereof

<sup>1</sup> See Appendix B for a complete list of external agencies that were invited and that participated.



## IDENTIFIED STRENGTHS OR BEST PRACTICES

- *Quality of the TTX and Players' level of professional skill allowed the team to examine and work through a PSPS process that normally takes 5 working days in a single day session*
- *Scenario was plausible, realistic, and detailed*
- *Numerous Players afforded the opportunity to experience their first EOC activity in a no-fault environment*
- *Adherence to Cal OES and CPUC requirements for executing the required steps for a PSPS Event*
- *Superior understanding of roles and responsibilities regarding ancillary field activities including SIPT and Vegetation Management*
- *Improved communications and notification process over previous iterations, primarily due to the establishment of a Communications Huddle and Joint Information System approach between Customer, Liaison, and PIO organizations*
- *Improved availability and adherence to reference documents and established best practices compared to previous iterations*

## AREAS FOR IMPROVEMENT/DEVELOPMENT

- *Opportunity to improve OMT Hawks' engagement at OEC/REC level & participation in Comms Huddle*
- *Opportunity to Improve understanding and engagement of the newly formed All-Hazards Incident Management Teams*
- *Opportunity to improve command relationship between EOC, REC, and OEC, as well as Coordination Centers*
- *Opportunity to offer refresher training on the Emergency Field Site request process to EOC Logistics staff.*
- *Opportunity to revise the process of requesting and employing the newly adjusted Legal Advisor role*
- *Opportunity to enhance the communications between the Power Generation Branch in the EOC and the on-duty Station Manager at DCP, to include updating the CERP, PSPS Annex, and other applicable documentation*
- *Identification of pre-staged Temporary Generation assets to include microsites and microgrids*



## 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 FBU 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)

Finding	Corrective Action	Responsible FBU	FBU POC	Start Date	End Date	*CAP Needed
<b>Readiness Posture</b>						
Lack of alignment or understanding between echelons regarding Emergency Center activation and coordination (ETEC, EDEC, etc.)	Standardize command relationship between echelons (EOC/REC/OEC), as well as coordination centers (ETEC, EDEC, CCECC, et al.)	EP&R Response		Working Group	TBD	Working group, No
	Evaluate with appropriate FBUs working group	Emergency Field Ops		Aug 15, 2022	Possible CAP for guidance docs based on outcome of working group evaluation	
Develop and publish written guidance documents and/or conduct training as applicable		PSPS Team				
		GCC/ETEC		Sep 1, 2022	Dec 1 2022	
		EDEC/DCC				
		EP&R Prevention and Planning				
		Electric Distribution				



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Finding	Corrective Action	Responsible FBU	FBU POC	Start Date	End Date	*CAP Needed
Lack of awareness, training, or understanding of role of newly formed Incident Management Teams (IMT)	Evaluate training provided on IMT to EOC for inclusion in EOC Orientation or WBT as applicable	EP&R Training & Exercise		Oct 15, 2022	Jan 31, 2023	No
Inadequate or lack of uniformity in application of Officer in Charge procedures; changes for 2022 may not be explicitly spelled out in CERP or PSPS Annex; document review required	Evaluate training EOC Commanders/OICs in 2022 on PSPS Annex changes	PSPS PMO		Aug 1, 2022	Aug 30, 2022	No
Inadequate understanding of correct file storage locations for critical documents	No action needed; player was provided coaching during exercise	N/A	N/A	N/A	N/A	N/A
<b>Event Scoping</b>						
Inadequate understanding or training on use of Emergency Field Site request procedures and associated policies	Offer refresher training on the Emergency Field Site request process to EOC Logistics staff.	EP&R Response  Logistics		Sept 1, 2022	Dec 1, 2022	No
Lack of roster or database for pre-staged Temporary Generation (Temp Gen) Assets; ADD microsites and microgrid to this due to close correlation.	Develop and publish job aids, update Temp Gen Teams site, and conduct training	Temp Gen		In Progress	Aug 15, 2022	No



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Finding	Corrective Action	Responsible FBU	FBU POC	Start Date	End Date	*CAP Needed
Lack of documentation, awareness, or understanding of procedures regarding inclusion of the Diablo Canyon Nuclear Power Plant (DCPP) Station Director in internal PSPS situational reports and other communications.	Review Power Generation Branch Director job aid and modify to reflect DCPP communication and situational awareness actions.  Provide familiarization of process to DCPP Station Directors.	Power Generation		Sept 1, 2022	Oct 31, 2022	No
		DCPP Emergency Preparedness		In Progress	Nov 1, 2022	
Lack of documentation in PG Annex regarding PPS Event roles and responsibilities	Add language to Power Generation Annex to outline roles and responsibilities during a PPS Event; alternatively, evaluate adding such language to the PPS Annex, looking possibly at next level of detail	EP&R Planning and Prevention		Sept 1, 2022	Oct 31, 2022	No



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Finding	Corrective Action	Responsible FBU	FBU POC	Start Date	End Date	*CAP Needed
<b>Patrol and Restoration</b>						
Lack of alignment regarding Comms Huddle roles across all echelons of emergency response (EOC/REC/OEC), particularly as pertains to All-Clear messaging.	Provide training to all individuals who are involved in the Communications Huddle - <u>Training provided prior to FSE</u>	PSPS PMO		Complete	NA	NA
Inadequate understanding or training on updated Legal Advisor procedures and associated policies	Provide training to all individuals who coordinate with legal advisor - <u>Training provided prior to FSE</u>	EP&R Training & Exercise		Complete	NA	NA
	<u>Update CERP to reflect new "Legal Advisor" role (in process)</u>	EP&R Planning & Prevention		In Process	Oct 22, 2022	



## 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

<b>State/Federal Agency Partners</b>	
California Governor’s Office of Emergency Services (CalOES)	X
California Department of Forestry and Fire Protection (CAL FIRE)	I
California Public Utility Commission (CPUC)	X
California Department of Water Resources	X
California Highway Patrol – Santa Barbara	I
USFS	I
<b>Local Agency Partners</b>	
City of Albany	I
City of Fremont	I
City of Lompoc	I
City of Morgan Hill	I
City of Paradise	X
City of Santa Rosa Department of Emergency Management	I
City of Sonoma OES	I
City of Ukiah	X
Livermore Pleasanton Fire Department	I
Alameda County	I
Butte County	I
Contra Costa County	I
Fresno County OES	I
Kern County OES	X
Kings County	X
Kings County Public Health	X
Lake County Sheriff’s OES	X
Marin County Sheriff’s Office/OES	X
Madera County OES	I
Mariposa County	X
Mendocino County	I
Merced County OES	I
Napa County	I
Nevada County Sheriff	X



Orange County Sheriff	I
Plumas County Sheriff	I
San Mateo County	I
Santa Maria City Fire Department	I
San Luis Obispo County	X
Santa Barbara County	X
Sierra County OES	I
Solano County	I
Sonoma County OES	I
Sonoma County Office of Education	I
Stanislaus County OES	X
Town of Danville	X
Tuolumne County	I
Yolo County	X
Yuba County	X
<b>Tribal Partners</b>	
Coverdale Rancheria of Pomo Indians	X
Hopland Tribe	I
Hoopla	I
Pinoleville Rancheria	I
Wilton Rancheria	I
<b>Telecoms/Water Agencies</b>	
Cal Water	X
Comcast	X
Sierra Telephone	X
Solano Irrigation District	X
Suddenlink	I
Charter Communication	I
Redwood Coast RC	I
AT&T	I
GFNET	I
<b>Community Partners</b>	
CFILC	X
Contra Costa Crisis Center	X
CVRC	I
DDS of California	I
211/ICFS	I
<b>Utility Partners</b>	
Northern California Power Agency	X
BART	I
Southern California Edison	I

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SoCal Gas	I
<b>Other</b>	
Filsinger	X
Gannett Fleming	X
Keadjian	X
Cal Terra	I



## 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
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