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August 05, 2022

Leslie Palmer, Director Safety Enforcement Division California Public Utilities Commission 505 Van Ness Avenue San Francisco, CA 94102

SUBJECT: SCE PSPS Post Event Report – July 22, 2022, to July 23, 2022

Dear Director Palmer:

As required by Resolution ESRB-8 and in accordance with Ordering Paragraph 1 of California Public Utilities Commission (CPUC) Decision (D.) 19-05-042, Southern California Edison Company (SCE) respectfully submits a compliance report for the de-energization event initiated on July 22 and concluded on July 23.

This report has been verified by an SCE officer in accordance with Rule 1.11 of the Commission's Rules of Practice and Procedure.

If you have any questions, please do not hesitate to call.

Sincerely,

<u>/s/ Tara Kaushik</u> Tara Kaushik

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Southern California Edison Public Safety Power Shutoff (PSPS) Post-Event Report July 22, 2022

Filed with: The California Public Utilities Commission Submitted to: Director of the Safety and Enforcement Division Dated: August 05, 2022

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Introduction

SCE submits this post-event report to address the de-energization event that started on July 22nd, 2022, at 8:13am and ended on July 23rd 2022, at 3:06pm, in portions of Kern County and Los Angeles County; and to demonstrate its compliance with the California Public Utilities Commission's (CPUC or Commission) PSPS guidelines including Resolution ESRB-8, PSPS Order Instituting Rulemaking (OIR) Phase 1 (Decision (D.) 19-05-042), Phase 2 (D.20-05-051), Phase 3 (D.21-06-034) and PSPS Order Instituting Investigation (OII) (D.21-06-014).¹ SCE de-energized 209 customers during this event. This report explains SCE's decision to call, sustain, and conclude the de-energization event, and provides detailed information to facilitate the Commission's evaluation of SCE's compliance with applicable PSPS guidelines.

SCE appreciates that proactive de-energizations pose significant challenges and hardships for our customers and the public safety partners that provide vital services to the affected communities. SCE's decision to activate its PSPS protocol is based on careful consideration and weighing of multiple factors, including forecasted weather, fuel conditions, infrastructure vulnerabilities, and potential impacts of PSPS on public safety partners and the communities we serve.

SCE remains committed to continuously improving its PSPS processes and welcomes input from its customers, public safety partners, community representatives, and local governments on ways we can work together to minimize the impact of PSPS events on all stakeholders.

¹ This PSPS post-event report is based on the best information and data available as of the 10-business-day filing deadline for the report. However, some of the information and data may be preliminary and not fully validated, or not available at all for inclusion in the post-event report. SCE continues to gather, analyze, and validate some of the underlying data, and will supplement this report with updated information, as needed, in its annual 2022 post-season report. See D.21-06-014, Ordering Paragraph 66, p. 305 (directing SCE to "provide aggregate data . . . in an annual report, including aggregate data that may not have been available at the time the utility filed the 10-day post-event report").

Section 1. Executive Summary

1. Brief description of the PSPS event starting from the time when the utility's Emergency Operation Center is activated until service to all customers have been restored.

At approximately 7 am on July 22nd, SCE began observing rapidly escalating wind speeds, decreasing humidity levels, and high Fire Potential Index (FPI) values in isolated portions of Kern and Los Angeles counties and made the decision to de-energize portions of the Tejon circuit at 8:13am to ensure public safety. Although SCE was aware of the potential for elevated fire weather prior to that morning, weather models were predicting a low probability (less than 25%) of meeting or exceeding PSPS criteria and below SCE's current threshold for activation of the Dedicated IMT. Therefore, SCE did not activate its Dedicated Incident Management Team (IMT) until the first de-energization on July 22nd. SCE activated its Emergency Operations Center at approximately 9am on July 22nd to manage this event and de-energized additional customers on the Tejon circuit at 10:55am and on the Kinsey circuit at 11:26am in response to rapidly escalating fire weather conditions. SCE was able to reduce customer impacts through mitigation as detailed in Section 10 and ultimately de-energized 209 customers on two circuits in Kern and Los Angeles counties on July 22nd through 23rd.

During this event, SCE's meteorology and fire science experts consulted the Geographic Area Coordination Center $(GACC)^2$ for forecast alignment, and the GACC's published forecast was aligned on elevated fire weather potential for Kern and Los Angeles counties. In addition, the National Weather Service issued Red Flag Warnings on the morning of July $22^{\,\mathrm{nd}}$, which stayed in effect through 6 am on July $23^{\,\mathrm{rd}}$ for Southern California, including those portions of Kern and Los Angeles counties where SCE was observing elevated fire weather conditions and had de-energized customers.

On the morning of Saturday, July 23rd, weather conditions began to improve in some areas and SCE was able to restore portions of both the Tejon and Kinsey circuits. However, actual fire weather conditions continued to be observed in de-energized areas, and SCE meteorologists extended the period of concern from 9am to 12pm that morning. As elevated fire weather conditions continued to abate over the course of the day on July 23rd, SCE was able to patrol circuits and re-energize customers, with all customers restored on by 3:06 pm on July 23rd.

Due to the rapidly escalating fire weather conditions that had not been forecasted in advance, SCE was unable to provide all pre-event notifications to some public safety partners, critical infrastructure, or customers prior to de-energization on the Tejon circuit. SCE did provide required in-event notifications to customers at de-energization initiation, before re-energization, and after completion of restoration. SCE also inadvertently notified five customers in Ventura County that were out of scope for this event due to incorrect mapping of these customers to circuits. *See* also Section 5 (1-7): Notifications for additional details related to notifications during this event.

² The GACC is the physical location of an interagency, regional operation center for the effective coordination, mobilization, and demobilization of federal state and local wildland fire agencies through logistical coordination of resources throughout the geographic area, as well as with other geographic areas.

2. A table including the maximum number of customers notified³ and actually de-energized; number of counties de-energized; number of tribes de-energized; number of Medical Baseline customers de-energized; number of transmission and distribution circuits de-energized; damage/hazard count; number of critical facilities and infrastructure de-energized.

Table 1: PSPS Event Summary⁴

PSPS Event Summary										
	Total Customers	;		De-en	ergized		N			
PSPS Notified	De-energized	Cancelled	MBL Customers	Number of Counties	Number of Tribes	Critical Facilities and Infrastucture	Transmission De-energized	Distribution Circuits in Scope	Distribution De-energized	Damage Count
187	209	5	4	2	0	39	0	2	2	0

3. A PDF map depicting the de-energized area(s)



³ SCE makes every effort to notify customers, public safety partners, and other impacted entities within two hours of a decision to cancel an anticipated de-energization event or to remove from scope. When the period of concern is over for a circuit or a circuit segment originally in scope and after the circuit is removed from the Monitored Circuit List, SCE sends an "All-Clear – Event Avoided" cancellation notification to impacted entities and customers that had been notified of a potential deenergization, but not de-energized. Because weather conditions can change unexpectedly, SCE is not always able to make a final decision that notified customers will not experience a de-energization until an "All Clear" declaration has been issued for all circuits in scope for the PSPS event.

⁴ Of the 209 de-energized customers, 27 customers could not be notified, either because they did not have valid contact information on file or have opted out of PSPS notifications. *See* also, Section 5-7 and Section 11 for additional info.

Section 2. Decision-Making Process

1. A table showing factors considered in the decision to shut off power for each circuit deenergized, including sustained and gust wind speeds, temperature, humidity, and moisture in the vicinity of the de-energized circuits. ⁵

Table 2: Factors Considered in De-Energization⁶

Factors Considered in De-Energization									
Circuit	Su	stained Wind Spee	Gust Wind Speed			Fire Poten (FF	Firecast Output		
De-energized	Activation Threshold	_	Actual	Activation Threshold		Actual	Threshold	Actual	Ratio
KINSEY	31	29.45	29.9	46	43.7	41.2	13	15.39	340.9210604
TEJON_3	31	29.45	29.1	46	43.7	43.7	13	13.07	326.4971431
TEJON_6	31	29.45	36.9	46	43.7	49.4	13	13	326.4971431

2. Decision criteria and detailed thresholds leading to de-energization including the latest forecasted weather parameters versus actual weather. Also include a PSPS decision-making diagram(s)/flowchart(s) or equivalent along with narrative description.

SCE uses preset thresholds for dangerous wind conditions that create increased fir e potential (including wind speeds, humidity, fuel moisture levels and other factors as the basis for PSPS decision-making, as described in SCE's technical paper. ⁷ These thresholds are set for each of the circuits in SCE-designated high fire risk areas (HFRAs) and are continuously reviewed to calibrate the risk of significant events against the potential for harm to customers from the loss of power.

All circuits have an activation threshold, defined by the Fire Potential Index (FPI) and the wind speed at which they are considered at risk. Activation thresholds are computed for each circuit for the season.

FPI is calculated using the following inputs:

Wind speed—Sustained wind velocity at 6 meters above ground level.

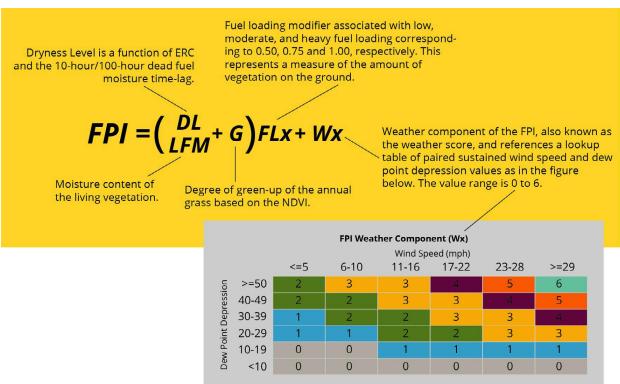
⁵ SCE incorporates temperature, humidity (air dryness), and fuel moisture data in its Fire Potential Index (FPI) rating calculations. These variables, while potential contributors to fire spread, are not distinct "factors considered" in SCE's deenergization decisions, and thus are not reported separately in Table 2. The FPI is a tool that utilizes weather and other data – including temperature, dew point depression (a measure of how dry the air is), and fuel conditions (vegetation moisture content) – to rate the daily fire potential across our service region and estimate the likelihood of a spark turning into a major wildfire. FPI uses a whole-number scale with a range from 1 to 17, with the following categorizations: normal (1-11), elevated (12-14) and extreme (15+). Historical FPI and state and federal fire data show that the most severe fires in terms of number of acres damaged occur at the higher levels of FPI. Temperature, air dryness, and fuel moisture variables are accounted for in the actual FPI rating for each de-energized circuit shown in Table 2. SCE also addresses relative humidity for this event in Section 2-2 below under "Forecasted vs. actual weather parameters."

⁶ Due to the rapidly escalating elevated fire weather conditions observed during this event, the Tejon_3 circuit segment had to be de-energized on short notice before a risk calculation could be performed. Consequently, the Incident Commander made the decision to de-energize the Tejon_3 segment based primarily on observed winds and the FPI index exceeding threshold, and without the benefit of the Firecast Output Ratio. A subsequent calculation was performed showing that the benefit of PSPS outweighed the risk of PSPS for this circuit. The resulting ratio is included in Table 4: PSPS Risk vs. Benefit Comparison Tool.

⁷ SCE's detailed technical paper, Quantitative and Qualitative Factors for PSPS Decision-Making, can be found at https://energized.edison.com/psps-decision-making and in Attachment C of this report.

- Dew point depression—The dryness of the air as represented by the difference between air temperature and dew point temperature at 2 meters above ground level.
- Energy release component (ERC)- "The available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire ... reflects the contribution of all live and dead fuels to potential fire intensity." 8
- 10-hour dead fuel moisture—A measure of the amount of moisture in ¼-inch diameter dead fuels, such as small twigs and sticks.
- 100-hour dead fuel moisture—A measure of the amount of moisture in 1- to 3-inch diameter dead fuels, i.e., dead, woody material such as small branches.
- Live fuel moisture—A measure of the amount of moisture in living vegetation.
- Normalized Difference Vegetation Index (NDVI)— "... used to quantify vegetation greenness and is useful in understanding vegetation density and assessing changes in plant health." 9

<u>Visual 1. Fire Potential Index Equation 10</u>



SCE has set the FPI at 13 for most areas and most events based on a risk analysis of historical fire data. 11 The following details exceptions in which the FPI threshold will continue to be set at 12:

⁸ U.S. Department of Agriculture. n.d. "Energy Release Component (ERC) Fact Sheet." Forest Service. Accessed April 14, 2021. https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5339121.pdf.

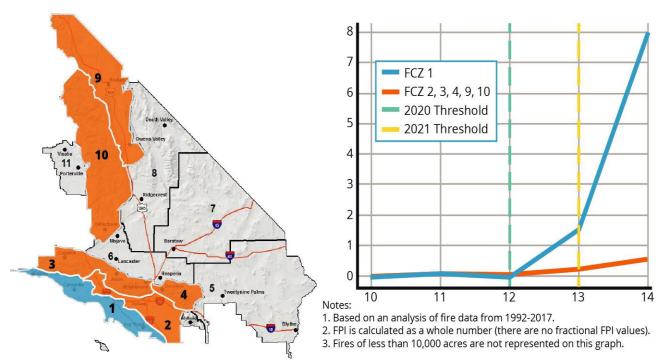
⁹ Department of the Interior. n.d. Landsat Normalized Difference Vegetation Index. Accessed April 14, 2021. https://www.usgs.gov/core-science-systems/nli/landsat/landsat-normalized-difference-vegetation-index?qt-science_support_page_related_con.

¹⁰ U.S. Fire Potential Index adapted from San Diego Gas & Electric (https://www.sdge.com/sites/default/files/regulatory/SDGE_Fire_Prevention_Plan_2018.pdf, pages 25-27) and modified to serve SCE's needs, including the insertion of the Live Fuel Moisture variable.

¹¹ Short, Karen C. 2017. Spatial wildfire occurrence data for the United States, 1992-2015 [FPA_FOD_20170508]. 4th Edition.

- Fire Climate Zone 1 (FCZ1) (Coastal region) The threshold for FCZ1 is staying at 12 because probability calculations indicated a significantly higher ignition risk factor at an FPI threshold of 13 for this FCZ than for the other FCZs (2, 3, 4, 9, and 10).
- Geographic Area Coordination Center (GACC) preparedness level of 4 or 5 The GACC coordinates multiple federal and state agencies to track and manage regional fire resources. It provides a daily fire preparedness level on a score of 1-5. A high score signals that there could be resource issues in responding to a fire.
- Circuits located in an active Fire Science Area of Concern (AOC) AOCs are areas within FCZs that are at high risk for fire with significant community impact. This designation is based on factors that are common to FPI as well as egress, fire history, and fire consequence. Further details about AOCs can be found in SCE's Wildfire Mitigation Plan. 12

Visual 2. Probability of Wind-Driven Fires at 10,000 Acres at FPI 12 and 13¹³



For each PSPS event, every circuit also has a de-energization threshold. De-energization thresholds are determined separately for each circuit to prioritize circuits for de-energization based on the specific risks of the event. This is particularly important for large events where many circuits must be evaluated simultaneously. There are a handful of circuits that have legacy thresholds below the NWS advisory level because they have a history of local circuit outages at lower wind speeds.

De-energization thresholds account for circuit health, including any issues identified through patrols, and are also informed by a consequence score for each specific high fire risk area. The consequence score

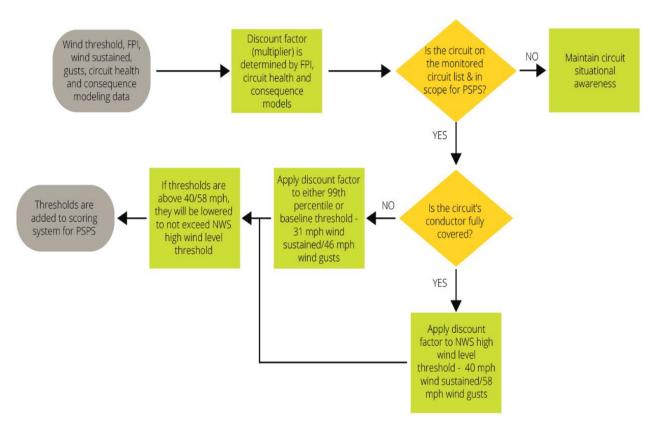
Fort Collins, CO: Forest Service Research Data Archive https://doi.org/10.2737/RDS-2013-0009.4 Supplemented with 2016-2017 ignition data supplied directly by CalFIRE via email.

¹² SCE's 2022 Wildfire Mitigation Plan Update dated February 18, 2022.

¹³ Based on back cast FPI calculation.

estimates the impact of an ignition on communities. The higher the score, the greater the risk to a particular location from wildfires. SCE's process for calculating de-energization thresholds is outlined below.

Visual 3. PSPS Decision-Making Flowchart/Diagram



If actual conditions suggest more risk, or in large-scale events when many circuits are under consideration for shutoffs, the de-energization thresholds may be lowered (discounted), meaning power on a circuit will be turned off at lower wind speeds. This step prioritizes the circuits that represent the highest risk to be evaluated for de-energization before circuits at lower risk. Conversely, de-energization thresholds are raised for segments or circuits that have had covered conductor installed. The de-energization threshold for segments with covered conductor is 40 mph sustained/58 mph gusts, which aligns with the National Weather Service high wind warning level for windspeeds at which in frastructure damage may occur.

The thresholds for the two circuits in scope for de-energization during this event were set as follows:

Table 3: Circuit Thresholds

Circuit Thresholds								
Circuit	CDI Throchold Dating	Wind Speed Activ	vation Thresholds	De-Energizati	on Thresholds			
Circuit	FPI Threshold Rating	Sustained Wind	Sustained Wind Gust Wind		Gust Wind			
TEJON_3	13	31	46	29.45	43.7			
TEJON_6	13	31	46	29.45	43.7			
KINSEY	13	31	46	29.45	43.7			

Forecasted versus actual weather parameters for this event were as follows:

- Wind: Wind gusts of 45-to-55 MPH were forecast for Kern and Los Angeles counties during this event. Actual highest observed winds speeds during this event were 39 MPH sustained and 52 MPH gust in the de-energized area.
- Relative humidity: Relative humidity during this event was forecast to be between 8% and 15% across Kern and Los Angeles counties concurrent with the strong winds. Observed relative humidity ranged from 9% to 30% during this event.
- 3. A thorough and detailed description of the quantitative and qualitative factors SCE considered in calling, sustaining, or curtailing each de-energization event including any fire risk or PSPS risk modeling results, and a specification of the factors that led to the conclusion of the deenergization event.

SCE's PSPS decisions are based on quantitative analyses while accounting for qualitative factors such as societal and emergency management impacts. SCE utilizes proactive de-energization as a measure of last resort when all other alternatives to de-energization have been exhausted. The decision to de-energize customers during this PSPS event was based on considering and weighing the quantitative and qualitative factors detailed below.

- Coordination with the GACC regarding the potential for elevated fire weather within the SCE service territory during the period of concern. SCE made several unsuccessful attempts to contact the GACC, however, their published forecast agreed with SCE's forecast of elevated fire weather potential for both Kern and Los Angeles.
- Ongoing assessments before the period of concern from SCE's in-house meteorologists using highresolution weather models to determine the potential scope of the PSPS event; as well as real time weather data from SCE weather stations and publicly available weather stations during the period of concern to inform actual de-energization decisions. Weather models were predicting a low probability (less than 25%) of meeting or exceeding PSPS criteria ahead of the morning of July 22nd.
- Fire spread modeling to identify areas having the greatest potential for significant fire activity. Results of this modeling by SCE identified the potential for fire in the 9-to-12-thousand-acre range in the areas of concern during the period of concern.
- Relative humidity levels. Relative humidity levels in the areas of concern for this PSPS event ranged from 9% to 30%.

- Observed weather parameters for this PSPS event, to include wind speeds and Fire Potential Index ratings for the circuits in scope relative to the preset thresholds for this event. De-energization thresholds were reached or exceeded for the de-energized circuits during this event as detailed in Table 2: Factors Considered in De-Energization in Section 2-1. *See* also Section 2-2 for additional details.
- National Weather Service-issued watches and warnings for areas of concern in the SCE service area.
 There were Red Flag Warnings for Kern and Los Angeles Counties and Wind Advisories for Los Angeles County during this PSPS event.

SCE considered the following factors when deciding to conclude this de-energization event:

- Improving weather modeling for the areas of concern: SCE's meteorologists indicated elevated fire weather would continue to abate throughout the day on July 23rd due to decreasing wind speeds and FPI ratings.
- Observed wind speeds and FPI ratings: Observed wind and FPI ratings no longer met de-energization threshold criteria as of July 23rd at 12:10pm.
- 4. An explanation of how the utility determined that the benefit of de-energization outweighed potential public safety risks, and analysis of the risks of de-energization against not de-energizing. The utility must identify and quantify customer, resident, and the general public risks and harms from de-energization and clearly explain risk models, risk assessment processes, and how the power disruptions to customers, residents, and the general public is weighed against the benefits of a proactive de-energization.

For each de-energization event, SCE assesses and compares potential public safety risks associated with proactive de-energization (PSPS risk) and simulated wildfire risk (PSPS benefit in avoiding a wildfire) for all circuits in scope, using its PSPS In-Event Risk Comparison Tool. ¹⁴ Inputs into this Tool include, among others, in-event weather, and wildfire simulation models, as well as circuit-specific data. The results of the analysis are displayed on the Incident Commander Dashboard and used by Incident Commanders to inform de-energization decisions, in conjunction with other relevant quantitative and qualitative factors described in Section 2 of this report. Incident Commanders consider the output of the Tool to assess the risk versus the benefit of de-energization on a circuit-by-circuit basis.

The comparative PSPS and wildfire risk estimates are based on the following circuit-specific criteria and information:

 PSPS Risk: Customers served, estimated population, and the relative ranking of the circuits in scope by the percentage of Access and Functional Needs (AFN) and Non-Residential Critical Infrastructure (NRCI) customers.

¹⁴ SCE will continue to refine the PSPS In-Event Risk Comparison Tool based on real-time experience, additional data, modeling enhancements, and ongoing benchmarking with other IOUs. Estimates and assumptions described herein are based on risk models reflecting current industry best practices (such as FireCast) and are subject to being updated as the modeling improves.

• **Wildfire Risk**: Wildfire simulations (using Technosylva FireCast¹⁵ modeling) for potential ignitions based on dynamic, in-event weather and wind conditions in proximity to the circuits in scope for deenergization. These conditions are used to determine the extent of an estimated fire footprint (or fire shed). Within that fire shed, the risk of a wildfire is calculated based on the number of structures, population, and acres potentially threatened within the impacted area.

This information is used to calculate potential Safety, Financial, and Reliability impacts (or attributes) of: (1) a wildfire and (2) a proactive de-energization event, as summarized in the table below:

Risk Attribute	Wildfire Consequences	PSPS Consequences
Safety	SCE calculates the estimated number of fatalities and serious injuries based on a forecast of impacted population within the Technosylva wildfire consequence simulation. This number, in turn, is converted into the Safety index.	SCE leverages epidemiological studies and information drawn from past widespread power outage events including the 2003 Northeast Blackout, the 2011 Southwest Blackout, and the IOUs' 2019 PSPS post-event reports. ¹⁶ The resulting estimates of fatalities and serious injuries per customer minutes interrupted (CMI) are intended to approximate potential safety consequences due to the power outage, such as illnesses resulting from food spoilage or exacerbation of existing underlying health conditions. SCE enhanced the PSPS safety attribute through the application of a circuit-specific AFN/NRCI multiplier. This multiplier represents the relative ranking of each circuit based on the number of AFN and NRCI customers on the circuit.
Reliability	SCE assumes 24 hours without power per customer on each circuit in scope due to wildfire. This duration was used to maintain consistency with Technosylva 24-hour fire propagation simulation, as well as the PSPS impact duration.	SCE estimates the total customer minutes interrupted (CMI) due to proactive deenergization on a circuit. It is the product of the number of customers on a circuit and the total number of minutes of estimated interruption. SCE assumes 1,440 CMI per customer (24 hours x 60 minutes) to represent de-energization over a 24-hour period.
Financial	SCE calculates the financial impact of	SCE conservatively assumes \$250 ¹⁸ per

¹⁵ Technosylva is a suite of wildfire simulation models or tools. While relying on a similar underlying fire propagation engine, each model is designed to support a unique use case. FireCast is specifically designed to forecast ignition risk associated with electric utility assets over a 3-day horizon based on expected short-term weather conditions.

¹⁶ See, e.g., Anderson, G.B., Bell, M.B (2012). Lights Out: Impact of the August 2003 Power Outage on Mortality in New York, NY, *Epidemiology* 23(2) 189-193. doi: 10.1097/EDE.0b013e318245c61c.

¹⁸ SCE utilizes \$250 per customer, per de-energization event to approximate potential financial losses on average, recognizing that some customers may experience no financial impact, while other customers' losses may exceed \$250. The \$250 value is a conservative assumption used for the limited purpose of estimating the potential financial consequences of PSPS as one of

Risk Attribute	Wildfire Consequences	PSPS Consequences
	wildfire by assigning a dollar value to the buildings and acres within the fire shed potentially threatened by wildfire. For buildings, SCE uses a system average replacement value assumption. For acres, SCE uses assumed costs of suppression and restoration. 17	customer, per de-energization event to quantify potential financial losses for the purpose of comparing PSPS risk to wildfire risk. The figure represents potential customer losses, such as lost revenue/income, food spoilage, cost of alternative accommodations, and equipment/property damage. This value is based on a Value of Lost Load (VoLL), which is a widely accepted industry methodology to estimate a customer's willingness to accept compensation for service interruption. VoLL is dependent on many factors, including the type of customer, the duration of the outage, the time of year, the number of interruptions a customer has experienced. SCE's VoLL estimate is consistent with academic and internal studies to estimate VoLL for a single-family residential customer for a 24-hour period.

SCE quantifies the resulting PSPS risks and wildfire risks using natural unit consequences for each risk type or attribute—structures impacted, acres burned, customer minutes interrupted, serious injuries and fatalities, etc. "Safety" risk is expressed as an index, "Reliability" risk is measured in terms of customer minutes interrupted (CMI), and "Financial" risk is measured in dollar amounts.

SCE then applies a Multi-Attribute Risk Score (MARS) framework to convert these natural unit consequences to unitless risk scores—one score for PSPS risks and one score for wildfire risks. ¹⁹ These risk scores are compared to each other by dividing the wildfire risk score (*i.e.*, the potential benefit of PSPS) by the PSPS risk score (*i.e.*, the potential public harm of PSPS), yielding a benefit/risk ratio for each circuit in scope of the PSPS event. If the resulting ratio is equal to 1, the risks are equivalent. If the ratio is greater than one, the wildfire risk exceeds the PSPS risk (the higher the

many inputs into SCE's PSPS In-Event Risk Comparison Tool. It is not an acknowledgment that any given customer has or will incur losses in this amount, and SCE reserves the right to argue otherwise in litigation and other claim resolution contexts, as well as in CPUC regulatory proceedings.

¹⁹ MARS is SCE's version of Multi-Attribute Value Function (MAVF). The MAVF was developed as part of the Safety Model Assessment (S-MAP) proceeding and is used in the utilities' 2018 Risk Assessment Mitigation Phase (RAMP) Report (I.18-11006, pp. 1-28) filings to compare risks and mitigation alternatives. SCE has improved its MARS framework since first developing it for the 2018 RAMP. SCE MARS 2.0 attributes, units, weights, ranges, and scales are shown below, and are further described in SCE's 2022 RAMP report See A.21-05-13, Chapter 2 – Risk Model and RSE Methodology.

Attribute	Unit	Weight	Range	Scaling
Safety	Index	50%	0 - 100	Linear
Reliability	CMI	25%	0 – 2 billion	Linear
Financial	\$	25%	0 – 5 billion	Linear

¹⁷ Suppression costs are based on a five-year average of California's reported wildfire suppression costs from 2016-2020. Restoration costs are assumed to be \$1,227/acre based on research papers published by the Bureau of Land Management.

resulting number, the more the wildfire risk outweighs the PSPS risk). If the ratio is less than 1, the PSPS risk outweighs the wildfire risk.

The table below displays circuit-specific inputs—such as the number of customers on a circuit, AFN/NRCI multiplier, number of acres and buildings potentially threatened—which are used to calculate the PSPS and wildfire risk scores (shown in columns titled "PSPS Risk" and "Wildfire Risk") and drive the final output of the Tool. These risk scores are then compared in the last column (highlighted in yellow) titled "FireCast Output Ratio," which shows the ratios of wildfire risk (corresponding to potential benefit of PSPS) to PSPS risk (corresponding to potential public harm from PSPS) for each circuit in scope. All ratios in the "FireCast Output Ratio" column for are greater than 1, meaning that the wildfire risk exceeded PSPS risk for all circuits in scope. These results were presented to the Incident Commanders in advance of de-energization to inform PSPS decision-making.

Table 4: PSPS Risk vs. Benefit Comparison Tool

F	PSPS Risk vs. Benefit Comparison Tool										
	Circuit	All Customers	Population	AFN/NRCI Multiplier	24 Hour CMI (24 x 60)		Firecast Buildings	Firecast Population	PSPS Risk (24 hr Impact- PSPS Model)	Wildfire Risk (24hr Impact- PSPS Model)	Firecast Output Ratio
	KINSEY	110	330	1.343621022	110	9679.8	70	43	0.000023447	0.007993712	340.92106
	TEJON	488	1464	1.244122802	488	11727	330	312	0.000103275	0.033718879	326.49714

For this de-energization event, the results of the In-Event PSPS Risk Comparison Tool supported SCE's decision to de-energize, indicating that all circuits in scope for potential de-energization during this event had a PSPS benefit/risk ratio greater than 1. Thus, the estimated benefit of PSPS outweighed the estimated risk of PSPS for this event.

5. Explanation of alternatives to de-energization considered and evaluation of each alternative.

During this event, SCE determined based on weather forecast data, fire weather modeling information, and the results of the PSPS Risk Comparison Tool that precautionary measures typically implemented ahead of the period of concern—enacting operating restrictions, implementing fast curve settings, prepatrolling circuits in scope, and performing switching operations—either did not sufficiently reduce the risk to public safety or could not be timely deployed because of the sudden onset of fire weather conditions. Thus, PSPS was determined to be necessary as a last resort measure to protect public safety, and there were no other available alternatives to mitigate identified wildfire risk.

SCE considered various measures to limit the size of this PSPS event. This included, leveraging circuit sectionalization devices, relying on real-time weather station data and information from live field observers monitoring prevailing environmental conditions such as potential damage from wind gusts, airborne vegetation, or flying debris. Using these measures, SCE was able to limit the size of this PSPS event to 209 customers.

Section 3. De-Energized Time, Place, Duration and Customers

1. The summary of time, place, and duration of the event, broken down by phase if applicable.

This PSPS event began when SCE de-energized a portion of the Tejon circuit in Kern County at 8:13am on July 22nd in response to rapidly escalating fire weather conditions and ended for all circuits in scope on July 23rd at 3:06pm when service was restored to all de-energized customers. This event impacted customers in Kern County and Los Angeles County. *See* also Section 1-1 above for additional information.

2. A zipped geodatabase file that includes PSPS event polygons of de-energized areas. The file should include items that are required in Section 3.3.

A zipped geodatabase file that includes all information in Section 3.3 is included with this filing.

3. A list of circuits de-energized, with the following information for each circuit. This information should be provided in both a PDF and excel spreadsheet.

The following table details the specified information for each circuit de-energized during this PSPS event and has also been included in the required PSPS Event Data Workbook filed with this report.

- County
- De-energization date/time
- Restoration date/time
- "All Clear" declaration date/time
- General Order (GO) 95, Rule 21.2-D Zone 1, Tier 2, or Tier 3 classification or non-High Fire Threat District
- Total customers de-energized
- Residential customers de-energized
- Commercial/Industrial customers de-energized
- Medical Baseline (MBL) customers de-energized
- AFN other than MBL customers de-energized²⁰
- Other Customers
- Distribution or transmission classification

²⁰ SCE maintains extensive data on customer populations that are included in the AFN definition referenced in CPUC decisions, with a focus on identifying AFN customers particularly vulnerable during PSPS events. Currently, SCE reports on impacted AFN customers who have self-certified as sensitive (not enrolled in SCE's MBL or Critical Care programs). SCE also reports on impacted customers that provide shelter to the homeless population, as these entities are included among critical facilities and infrastructure. SCE will endeavor to provide more complete data on impacted AFN customers in the annual post-season report.

Table 5: Circuits De-Energized 21

Circuits De-Ene	rgized							,	
County	Circuit Name	De-energization Date	De-energization Time (2400)	All Clear Declaration Date	All Clear Declaration Time (2400)	Restoration Date	Restoration Time (2400)	GO 95, Tier HFTD Tier(s) 1,2,3	Distribution / Transmission Classification
Los Angeles	KINSEY	07/22/22	11:26	07/22/22	14:21	07/23/22	10:35	Non HFRA, T2	Distribution
Kern	TEJON_3	07/22/22	8:13	07/23/22	11:36	07/23/22	15:06	Non HFRA, T2	Distribution
Kern/Los Angeles	TEJON_6	07/22/22	10:55	07/22/22	14:38	07/23/22	14:21	Non HFRA, T2	Distribution
Circuits De-Ene	rgized (cont.)								•
County	Circuit Name	Residential Customers De-energized	Commercial / Industrial customers De-energized	Medical Baseline customers De-energized	AFN other than MBL customers De- energized	Total customers De-energized	GO 95, Tier HFTD Tier(s) 1,2,3	Other Customers	
Los Angeles	KINSEY	60	50	0	0	110	Non HFRA, T2	0	
Kern	TEJON_3	0	3	0	0	3	Non HFRA, T2	0	
Kern/Los Angeles	TEJON_6	78	18	4	0	96	Non HFRA, T2	0	

²¹ Tejon circuit shown as two separate entries because it spans both Kern and Los Angeles counties. In addition, the two Tejon circuit portions have different de-energization thresholds and were managed separately during the event.

Section 4. Damage and Hazards to Overhead Facilities

- 1. Description of all found wind-related damages or hazards to the utility's overhead facilities in the areas where power is shut off.
 - N/A. No wind-related damages or hazards were identified related to this PSPS event.
- 2. A table showing circuit name and structure identifier (if applicable) for each damage or hazard, county that each damage or hazard is located in, whether the damage or hazard is in a High Fire Threat District (HFTD) or non-HFTD and the type of damage/hazard.
 - N/A. No wind-related damages or hazards were identified related to this PSPS event.
- 3. A zipped geodatabase file that includes the PSPS event damage and hazard points. The file should include fields that are in the table above.
 - N/A. No wind-related damages or hazards were identified related to this PSPS event.
- 4. A PDF map identifying the location of each damage or hazard.
 - N/A. No wind-related damages or hazards were identified related to this PSPS event.

Section 5. Notification

1. A description of the notice to public safety partners, local/tribal governments, paratransit agencies that may serve all the known transit or paratransit dependent persons that may need access to a community resource center, multi-family building account holders/building managers in the AFN community²², and all customers, including the means by which utilities provide notice to customers of the locations/hours/services available for CRCs, and where to access electricity during the hours the CRC is closed.

SCE includes paratransit agencies that may be de-energized in its PSPS notifications and classifies these agencies overall as critical facilities and infrastructure to ensure they receive priority notifications. All multi-family building SCE account holders receive customer notifications. In its customer notification, SCE directs potentially impacted customers to www.sce.com/psps for information related to the location, hours, and services available at Community Resource Centers. Instructions on where customers can access electricity during the hours the centers are closed has been made available on the SCE website. A description of the notices to public safety partners, local governments and Tribal Nations during this event is provided below.

Notification Descri	Notification Descriptions							
Type of Notification	Recipients	Description						
Expected Shutoff	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community). Customers (including multi-family building account holders).	Power shutoff expected soon (1-4 hours before potential deenergization).						
Shutoff	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs	Power has been shut off (when de-energization is initiated).						

²² SCE notifies multi-family building account holders in the ordinary course along with other customers of record in scope for a potential de-energization. SCE does not currently have a way to identify which multi-family building account holders have residents in their buildings who may be members of the AFN community. SCE conducts PSPS-related outreach via flyers and trade publications to increase awareness of PSPS among building/property managers who are not account holders. SCE also instituted an address-level alert program, which allows non-SCE account holders (such as building/property managers) to sign up for PSPS alerts for specific addresses.

Notification Descriptions							
Type of Notification	Recipients	Description					
	and paratransit agencies serving the AFN community).						
	Customers (including multi-family building account holders).						
Continued Shutoff	Customers (including multi-family building account holders).	Status update to those customers with an overnight de-energization.					
Patrol and Inspect	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	Inspection/patrols of de- energized circuits for PSPS restoration has begun and power will be restored shortly. (re-energization is imminent)					
Prepare to Restore	Customers (including multi-family building account holders).						
Restore	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	Power has been restored.					
Event- Concluded-All Clear	Public Safety Partners and Critical Facilities & Infrastructure (including local and Tribal governments, Community Choice Aggregators, hospitals, water/wastewater and telecommunications providers, CBOs and paratransit agencies serving the AFN community).	PSPS event is concluded and no further de-energization expected.					

Notification Descriptions							
Type of Notification	Recipients	Description					
PSPS Ended Restored & All Clear	Customers (including multi-family building account holders).	PSPS event concluded-no further PSPS expected.					
PSPS Restored; NOT All Clear, PSPS Risk Remains	Customers (including multi-family building account holders).	PSPS event remains ongoing re-energization is temporary and additional PSPS risk is possible.					

2. Notification timeline including prior to de-energization, initiation, restoration, and cancellation, if applicable. The timeline should include the required minimum timeline and approximate time notifications were sent.

Please see Table 07: Notification Timeline in the attached event data workbook for a notification timeline, including the approximate times the notifications were sent to local/tribal governments, public safety partners, and customers for this PSPS event. SCE makes every effort to adhere to the notification timelines required by the CPUC. However, notifications may be delayed or missed due to circumstances such as the sudden onset of dangerous fire weather that was not forecasted or when such weather conditions manifest earlier than predicted by the forecast.

During this event, SCE's ability to send PSPS notifications in accordance with the minimum timeline was impacted by the rapid onset of elevated fire weather and SCE's commitment to minimize customer de-energizations through the use of sectionalization. Despite these challenges, approximately 95% of de-energized customers received at least one notification prior to de-energization. *See* also Section 11: Lessons Learned for additional details.

3. For those customers where positive or affirmative notification was attempted, use the following table to report the accounting of the customers (which tariff and/or access and functional needs population designation), the number of notification attempts made, the timing of attempts, who made the notification attempt (utility or public safety partner) and the number of customers for whom positive notification was achieved. "Notification attempts made" and "Successful positive notification" must include the unique number of customer counts. When the actual notification attempts made is less than the number of customers that need positive notifications, the utilities must explain the reason. In addition, the utilities must explain the reason of any unsuccessful positive notifications.

Table 8: Positive Notification²³

Positive Notification					
Category	Total Number of Customers	Timing of Attempts	Notification Attempts	Successful Positive Notification	Who made the notification
Medical Baseline	4	Daily	4	4	SCE
Self Certified	N/A	N/A	N/A	N/A	N/A

4. A copy or scripts of all notifications with a list of all languages that each type of notification was provided in, the timing of notifications, the methods of notifications and who made the notifications (utility or public safety partners).

Scripts of all notifications that SCE sends are attached hereto in Attachment A. SCE performs all primary customer notifications and encourages public safety partners to amplify PSPS messages on their platforms as appropriate. SCE offers all notifications in the following languages: English, Spanish, Cantonese, Mandarin, Vietnamese, Tagalog, and Korean. Khmer, Armenian, Farsi, Arabic, Japanese, Russian, Punjabi, Thai, Hmong, Portuguese, Hindi, French, German, Mixteco (indigenous - spoken only), Zapoteco (indigenous - spoken only), and Purapecha (indigenous - spoken only).

²³ Successful positive notification includes secondary verification by Consumer Affairs and escalated contact attempts, up to and including door knocks, if necessary.

5. If the utility fails to provide notifications according to the minimum timelines set forth in D.19-05-042 and D.21-06-034, use the following table to report a breakdown of the notification failure and an explanation of what caused the failure.

Given the rapid onset of fire weather during this event, SCE was unable to send all notifications according to the minimum guidelines set forth by the Commission. Any notification failures during this PSPS event are included on the following page.

Table 09: Breakdown of Notification Failure

Breakdown of Notification Failures				
Notifications sent to	Notification Failure Description	Number of Entities or Customer Counts	Explanation	
Public Safety Partners excluding Critical Facilities and	Entities who did not receive 48-to 72-hour advance notification.	3	Not forecasted in scope by 48 hours before de-energization.	
	Entities who did not receive 1–4-hour imminent notification.	3	Rapidly escalating weather conditions that required immediate de-energization.	
	Entities who did not receive any notifications before de-energization.	3	Rapidly escalating weather conditions that required immediate de-energization.	
	Entities who were not notified immediately before re-energization.	0		
	Entities who did not receive cancellation notification within two hours of the decision to cancel.	0		
	Facilities who did not receive 48–72-hour advance notification.	39	Not forecasted in scope by 48 hours before de-energization.	
Critical Facilities and Infrastructure	Facilities who did not receive 1-4 hour of imminent notifications.	14	13 facilities could not be notified due to rapidly escalating weather conditions that required immediate de-energization. 1 critical facility and infrastructure customer on the Kinsey circuit opted out of PSPS notifications.	
	Facilities who did not receive any notifications before de- energization.	1		
	Facilities who were not notified at de-energization initiation.	1	1 critical facility and infrastructure customer on the Kinsey circuit opted	
	Facilities who were not notified immediately before re- energization.	1	out of PSPS notifications.	
	Facilities who were not notified when re-energization is complete.	1		
	Facilities who did not receive cancellation notification within two hours of the decision to cancel.	0		
	Customers who did not receive 24–48-hour advance notifications.	170	Not forecasted in scope by 48 hours before de-energization.	
All other affected customers	Customers who did not receive 1–4-hour imminent notifications.	104	86 customers could not be notified due to rapidly escalating weather conditions that required immediate de-energization. 26 customers did not have validated contact information or have opted out of PSPS notifications.	
	Customers who did not receive any notifications before de- energization.	29	3 customers could not be notified due to rapidly escalating weather conditions that required immediate de-energization. 26 customers did not have validated contact information or have opted out of PSPS notifications.	
	Customers who were not notified at de-energization initiation.		Customore did not have velideted	
	Customers who were not notified immediately before re-energization.	26	Customers did not have validated contact information or have opted out of PSPS notifications.	
	Customers who were not notified when re-energization is complete.	26		
	Customers who did not receive cancellation notification within two hours of the decision to cancel.	5	These customers were incorrectly assigned to the Tejon circuit and are in the process of being mapped to the correct electrical equipment.	

6. Explain how the utility will correct the notification failures.

SCE continues to make progress towards improving the accuracy and granularity of its weather and fuel modeling capabilities. These efforts will increase precision in notifications and will help to identify the scope and duration of de-energizations more accurately. More precise weather and fuel forecasts will address some, but not all of SCE's inherent challenges in capturing details in the timing and magnitude of predicted fire weather events. These improvements will collectively help to identify the scope of where, when, and how long potential de-energizations may occur more clearly, reducing the number of "short notice" and missed notifications.

Despite these important improvements, as demonstrated in this event, there may still be instances where SCE is unable to meet all notification requirements due to sudden onset of unexpected weather, given the unavoidable differences between forecast and actual weather conditions.

7. Enumerate and explain the cause of any false communications citing the sources of changing data.

SCE is aware of the following situations during this PSPS event that may be viewed as "false communications," as clarified by the Commission in D.21-06-034 (pp. 78-80).

Missed/Insufficient Notice:

- Refer to Table 09: Breakdown of Notification Failure in Section 5-5 above for specifics related to this topic.
- Approximately 27 of the 209 de-energized customers have not provided contact information or have opted out of PSPS notifications. During PSPS events, SCE is only able to notify those customers with available contact information who are enrolled in SCE's emergency alerts. *See* also Section 11 Lessons Learned for additional info.

Incorrect Notice:

An additional five customers in Ventura County that were not in scope for this event received PSPS
related notifications in error. These customers were incorrectly assigned to the Tejon circuit and
are in the process of being mapped to the correct electrical equipment. SCE has a larger effort
underway to identify and correct these types of errors proactively on other circuits that could be
subject to PSPS and will continue to make corrections as they are discovered. See also, Section 11
Lessons Learned for additional info.

Cancelled Notice:

Five customers in Ventura County received PSPS event notifications but were not actually in scope and not de-energized during this event. SCE accounted for these customers in Table 1, but they did not receive cancellation notifications because the mapping issue was not identified until after the event.

Section 6. Local and State Public Safety Partner Engagement

1. List the organization names of public safety partners including, but not limited to, local governments, tribal representatives, first responders, emergency management, and critical facilities and infrastructure the utility contacted prior to de-energization, the date and time on which they were contacted, and whether the areas affected by the de-energization are classified as Zone 1, Tier 2, or Tier 3 as per the definition in CPUC General Order 95, Rule 21.2-D.

Please see Table 10: Public Safety Partners Contacted in the attached event data workbook for a list of local public safety partners that received notifications related to this event.

2. List the names of all entities invited to the utility's Emergency Operations Center for a PSPS event, the method used to make this invitation, and whether a different form of communication was preferred by any entity invited to the utility's emergency operation center.

SCE extends a daily invitation for agency representatives to its Emergency Operations Center (currently virtual only) during agency coordination calls with public safety partners and critical infrastructure providers as applicable during the event. SCE also shares daily situational reports from these calls with all impacted public safety partners and critical infrastructure providers that includes contact information for requesting/receiving an agency representative to the Emergency Operations Center. Please see Table 11: Entities Invited to SCE Emergency Operations Center in the attached event data workbook for a list of agencies invited to the daily coordination calls.

3. A statement verifying the availability to public safety partners of accurate and timely geospatial information, and real time updates to the GIS shapefiles in preparation for an imminent PSPS event and during a PSPS event.

As soon as available, SCE provided accurate geospatial information and real-time updates to GIS shapefiles via the SCE Representational State Transfer Service (REST) to public safety partners during the PSPS event. SCE also provided this information to public safety partners on its Public Safety Partner Portal (Portal), although there was a delay in getting the Portal up and running on the morning of July 22^{nd} due to the emergent nature of the event and the inherent lag between activation of the Dedicated IMT and situational awareness tools being available during events. *See* also, Section 11 Lessons Learned for additional info.

4. A description and evaluation of engagement with local and state publicsafety partners in providing advanced outreach and notification during the PSPS event.

SCE submitted the CalOES Notification forms via the State Dashboard beginning on July 22^{nd} at 9:18am as required; SCE conducted operational briefings with State and local public safety partners, as well as critical infrastructure entities, to provide critical incident updates and a forum for resolving issues on July 22^{nd} . Table 10: Public Safety Partners Contacted in the attached event data workbook details a list of local public safety partners that received notifications related to this event.

5. Specific engagement with local communities regarding the notification and support provided to the AFN community.

SCE initially contacted representatives of local communities beginning on July 22nd and maintained contact with these local representatives for the duration of the event to address any emergent issues. SCE invited CBOs and paratransit agencies to the Operational Briefing on July 22nd to keep them informed about the PSPS event and any impacts to the AFN community. The following Community-Based Organizations (CBOs) were invited to the daily operational briefing: California Department of Developmental Disabilities Regional Center-Kern and Los Angeles County, American Red Cross, Independent Living Centers-Kern and Los Angeles County, 211 CA Network, and other CBOs supporting wildfire and emergency preparedness marketing and outreach efforts.

- 6. Provide the following information on backup power (including mobile backup power) with the name and email address of a utility contact for customers for each of the following topics:
 - a. Description of the backup generators available for critical facility and infrastructure customers before and during the PSPS.
 - SCE maintains a total of 20 mobile generators for use by critical facilities and infrastructure during PSPS events as needed.
 - b. The capacity and estimated maximum duration of operation of the backup generators available for critical facility and infrastructure customers before and during the PSPS.
 - The generators SCE maintains for PSPS events are rated at 20-500 KW and have an estimated maximum duration of operation of 24 hours with a continuous fuel plan to ensure there is no interruption of power while the generators are deployed for usage.
 - c. The total number of backup generators provided to critical facility and infrastructure customer's site immediately before and during the PSPS.
 - N/A. No critical facilities or infrastructure customers requested backup power; as such, SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.
 - d. How the utility deployed this backup generation to the critical facility and infrastructure customer's site.
 - N/A. No critical facilities or infrastructure customers requested backup power; as such, SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.
 - e. An explanation of how the utility prioritized how to distribute available backup generation.
 - N/A. No critical facilities or infrastructure customers requested backup power; as such,

SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.

f. Identify the critical facility and infrastructure customers that received backup generation.

N/A. No critical facilities or infrastructure customers requested backup power; as such, SCE did not deploy any backup generation to critical facility and infrastructure customers during this event.

Any questions related to the information under this item may be directed to SCE at the following e-mail address: SCEBCDCustomersupport@sce.com.²⁴

²⁴ Although there is no designated contact person for questions, this e-mail inbox is monitored by SCE's Business Customer Division.

Section 7. Complaints and Claims

1. The number and nature of complaints received as the result of the de-energization event and claims that are filed against the utility because of de-energization. The utility must completely report all the informal and formal complaints, meaning any expression of grief, pain, or dissatisfaction, from various sources, filed either with CPUC or received by the utility as a result of the PSPS event.

To date, there were 4 reported complaints and zero claims associated with this PSPS event. SCE will include any complaints or claims related to this PSPS event received after the filing of date of this report in its annual post-season report.

Nature of Complaints	Number of Complaints
PSPS Frequency/Duration Including, but not limited to complaints regarding the frequency and/or duration of PSPS events, Including delays in restoring power, scope of PSPS and dynamic of weather conditions.	2
Safety/Health Concern Including, but not limited to complaints regarding difficulties experienced by AFN/MBL populations, traffic accidents due to non-operating traffic lights, inability to get medical help, well water or access to clean water, inability to keep property cool/warm during outage raising health concern	0
Communications/Notifications Including, but not limited to complaints regarding lack of notice, excessive notices, confusing notice, false alarm notice, problems with getting up-to-date information, inaccurate information provided, not being able to get information in the prevalent languages and/or information accessibility, complaints about website, Public Safety Partner Portal, REST/DAM sites (as applicable)	1
Outreach/Assistance Including, but not limited to complaints regarding community resource centers, community crew vehicles, backup power, hotel vouchers, other assistance provided by utility to mitigate impact of PSPS	0
General PSPS Dissatisfaction/Other Including, but not limited to complaints about being without power during PSPS event and related hardships such as food loss, income loss, inability to work/attend school, plus any PSPS-related complaints that do not fall into any other category.	1
Total	4

Section 8. Power Restoration Timeline

1. A detailed explanation of the steps the utility took to restore power, including the timeline for power restoration, broken down by phase if applicable.

On July 22nd SCE's real-time weather station data and forecast models were trending downward for the Kinsey and Tejon_6 circuits, with no indication of additional potential for dangerous fire weather conditions. Given this, the Incident Commander approved restoration operations and initiated full patrols of the de-energized portions of the Kinsey and Tejon_6 circuits at approximately 2:21 pm and 2:38 pm, respectively. Following the same process f, on July 23rd, the Incident Commander initiated a full patrol of the de-energized portion of the Tejon_3 circuit at approximately 11:36 am. Once patrols were completed and the circuits were deemed safe to energize, SCE restored power to impacted customers on July 23rd at 10:35 am on the Kinsey circuit, at 2:21 pm on the Tejon_6 circuit, and at 3:06 pm on the Tejon_3 circuit.

2. For any circuits that require more than 24 hours to restore, the utility shall use the following table to explain why it was unable to restore each circuit within this timeframe.

N/A. There were no circuits that required more than 24 hours to restore.

Section 9. Community Resource Centers

1. Using the following table, report information including the address of each location during a de-energization event, the location (in a building, a trailer, etc.), the assistance available at each location, the days, and hours that it was open, and attendance (i.e., number of visitors).

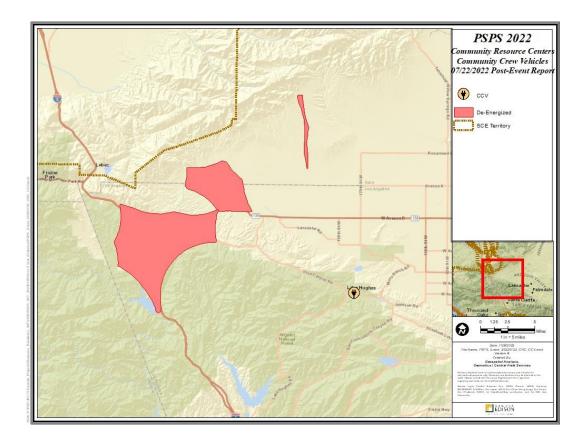
Table 15: Community Resource Centers

Community Resource Centers				
Address	Location Type	Describe the assistance available	Hours of Operations ¹ (Date / Time)	Number of Visitors
Lake Hughes Community Center, 17520 Elizabeth Lake Rd, Lake Hughes, CA 93532	CCV	Small portable device charging (such as a cell phone, laptop, and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets, and wood as needed, and customer resiliency kits	6pm-10pm, 7/22	6
Lake Hughes Community Center, 17520 Elizabeth Lake Rd, Lake Hughes, CA 93532	ccv	Small portable device charging (such as a cell phone, laptop, and small medical devices), seasonal heating and cooling, ice vouchers or ice, water, snacks, blankets, and wood as needed, and customer resiliency kits	8am-3pm, 7/23	17

2. Any deviations and explanations from the CRC requirement including operation hours, ADA accessibility, and equipment.

SCE sometimes deviates from the CRC normal hours of operation of 8am to 10pm during PSPS events to either follow the period of concern more closely and provide appropriate customer support to best meet the needs of the community or when circuits had been re-energized and customer support is no longer necessary. In this event for which there was no advance notice as discussed above, SCE could not activate in advance, but was able to mobilize a CCV on the afternoon of July 22^{nd} to support deenergized customers. With staff recruitment, pre-departure tailboard meeting, logistics coordination, travel time, and CCV site set-up, the earliest SCE could open the site, once fully deployed, was 6pm on July 22^{nd} . SCE de-mobilized the CCV at approximately 3 pm on July 23^{rd} after all power was restored to customers.

$3. \ \, A\,map\,identifying\,the\,location\,of\,each\,CRC\,and\,the\,de-energized\,areas$

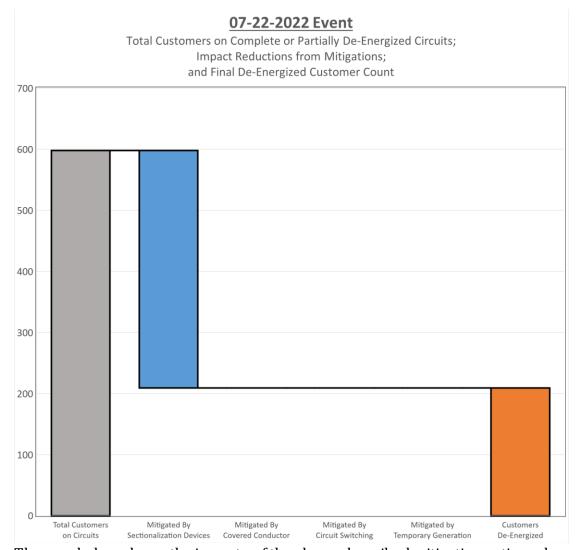


Section 10. Mitigation to Reduce Impact

 Mitigation actions and impacts (both waterfall graph and map) including: sectionalization devices, temporary generation, microgrids, permanent backup generation, transmission switching, covered conductor, and any other grid hardening that mitigated the impact of the event

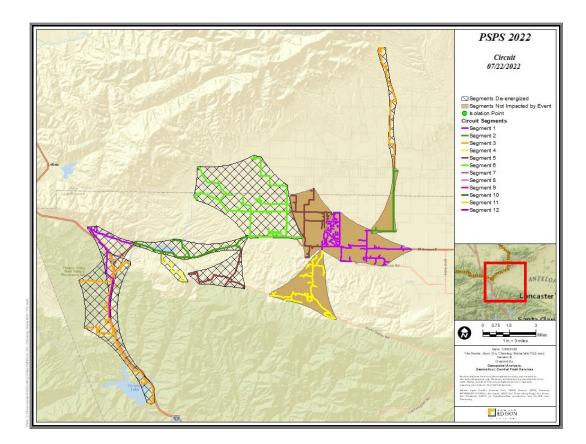
During the period of concern, SCE considered various measures to minimize customer impacts on the Kinsey and Tejon circuits. Leveraging circuit sectionalization devices, relying on real-time weather stations data and information from live field observers monitoring prevailing environmental conditions, such as potential damage from wind gusts, airborne vegetation, or flying debris, SCE was able to limit the size of this PSPS event and remove from scope 391 customers.

The below waterfall graph shows the impact of SCE's mitigation measures implemented during the PSPS event for the Tejon circuit. The mitigation measures included the use of sectionalizing devices in combination with higher resolution situational awareness. Absent this mitigation and under the same weather conditions, it would have been necessary to de-energize approximately 600 customers on the entire Kinsey and Tejon circuits compared to 209 customers actually de-energized in this PSPS event.



The map below shows the impacts of the above-described mitigation action where sectionalization

was successfully deployed to limit the scope of de-energization. The shaded areas identify segments of each circuit that remained safely energized as a result of sectionalization mitigation measure. The circuit and circuit segments that had to be de-energized are identified by the crosshatched overlay.



Section 11. Lessons Learned

1. Threshold analysis and the results of the utility's examination of whether its thresholds are adequate and correctly applied in the de-energized areas.

SCE believes our thresholds are adequate and correctly applied in de-energized areas as detailed in Attachment B - Quantitative and Qualitative Factors in PSPS Decision-Making Technical Paper.

2. Any lessons learned that will lead to future improvement for the utility.

Issue	Description	Resolution
SCE was not able to send advance notifications for this event due to sudden onset of unexpected weather.	The PSPS IMT was not activated because weather models 12 hours ahead of this event showed a relatively low probability (less than 25%) of reaching PSPS criteria.	SCE will examine current protocols for activating the PSPSIMT for marginal weather conditions to determine if changes to activation criteria should be made.
Circuit to customer mapping errors exist in SCE's source system databases.	Source data discrepancies resulted in erroneous notifications to 5 customers in Ventura County that were not in scope.	SCE has launched an ongoing effort to identify and proactively correct these types of data errors on circuits that could be subject to PSPS.
Some de-energized customers could not be notified during this event because they were not enrolled or have opted out of SCE's PSPS alerts.	Some customers in High Fire Risk Areas have not enrolled in or opted out of SCE's PSPS alerts. As a result, they could not be notified during this event.	SCE is in the process of auto-enrolling all customers that live in the High Fire Risk Areas but are not currently enrolled to ensure they receive PSPS alerts. In October 2022, SCE will also discontinue the customer opt-out feature for PSPS alerts.
Some de-energized customers could not be notified because did not have validated contact information on file.	Some customers in High Fire Risk Areas have not provided validated contact information to SCE. As result, they could not be notified during this event.	SCE is in the process of enhanced outreach to these customers to confirm their contact information and enroll them in PSPS notifications.
The Public Safety Partner Portal was not immediately available for situational awareness at the beginning of this PSPS event.	There is an inherent lag between PSPS activation and when in-event management and situational awareness tools are available for use on the Portal. This lag translated to delays in the availability of event-specific information on the Portal during this PSPS event.	To the extent possible, SCE is evaluating options to pre-stage inevent management and situational awareness tools when marginal (low probability) fire weather conditions are expected to reduce lag time for establishing situational awareness during events.
Approximately 50% of all Satellite-based weather stations stopped receiving updated weather reads.	There was a satellite network failure that impacted some weather stations being used to monitor real time fire weather conditions and guide reenergization decisions. The team was able to place live field observers in the field to support re-energization decision-making.	SCE is in the process of converting select weather stations to both cellular and satellite coverage to mitigate these issues and has established an escalation process with the vendor for quick resolution of issues

Section 12. Other Relevant Information

1. This section includes any other relevant information determined by the utility.

SCE has instituted an engagement survey process to capture feedback from State and county public safety partners and critical infrastructure customers during PSPS events. SCE encourages these stakeholders to provide survey feedback in daily coordination calls and emails links to the engagement survey once the event has concluded. Five participants completed SCE's engagement survey; of those five, three rated the engagement with SCE as positive, one rated the engagement as good, and one rated the engagement as fair.

Attachments

Attachment A-Public Safety Partner and Customer Notification Scripts

Initial (72-hour) LNO Notification

Description:

Sent one time per county, preferably starting 72 hours in advance of a possible PSPS event, when possible, alerting contacts that our weather specialists forecast potential extreme weather ahead. Includes the Situational Awareness (SA) spreadsheet with information about weather event timing and circuits and locations that could be impacted. Sent to all impacted jurisdictions and other LNO contacts, grouped by county.

Notification Subject Line and Message

SCE Initial Notice for PSPS Event in **COUNTY NAME** on [start POC DATE].

Public Safety Power Shutoff initial notification for official use: Due to projected fire weather conditions, we may need to shut off power in high fire risk areas in COUNTY NAME. Please refer to the attached spreadsheet for status and periods of concern for specific circuits.

We are working to reduce the number of customers affected and weather patterns might change, so **not all circuits on the watch list will have their power shut off.**

Customers on the affected circuits will be notified starting two days before the forecasted start date, however the maps on sce.com/psps will reflect this information today.

We have set up an incident management team for this event including in-house meteorologists, fire scientists, liaison and public information officers, and other technical staff.

Recommended Language to Share with the Public: SCE is forecasting dangerous wind-driven fire conditions starting in the next three days and might need to shut off power during this time. For more information, visit sce.com/PSPS.

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at <u>sce.com/PSPS</u> starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a

weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: (800) 674-4478

Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>--Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations.

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS
Non-PSPS outages: sce.com/outages

<u>Updated Conditions (Update) Notification</u>

Description:

Sent once daily after the Initial Notification to provide updates as the period of concern approaches. Includes the Situational Awareness (SA) spreadsheet with information about weather event timing and circuits and locations that could be/are impacted. Sent to all impacted jurisdictions, grouped by county. **Notification Subject Line and Message:**

SCE Update Notice for PSPS Event in [County Name].

Public Safety Power Shut-Off update notification for official use: We are providing ongoing information and periods of concern for PSPS circuits in [County Name], based on updated weather reports. A complete list, including both the forecasted start and end times for all circuits is attached.

Customers on the affected circuits are being updated if they are within two days of the period of concern, or if there has been a change to their status. The map on sce.com/psps is being continually updated to reflect current status.

Information about Community Resource Centers and Community Crew Vehicles will be available one day in advance of the period of concern at sce.com/psps.

Recommended Language to Share with the Public: *SCE is forecasting dangerous wind-driven fire conditions and might need to shut off power. For more information, visit <u>sce.com/PSPS</u>.*

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at <u>sce.com/PSPS</u> starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at <u>sce.com/outages</u>.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public) First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: (800) 674-4478

Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>--Only monitored during emergency activations.

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Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations. SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS Non-PSPS outages: sce.com/outages

Expected De-Energize Notification (previously: Imminent De-Energization) Description:

Sent up to 4 hours in advance of expected power shut off, when possible, for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. Sent to all impacted jurisdictions. Note: as of 5/15/2021 we still don't have a way to eliminate duplicate notifications when a circuit crosses county lines – all jurisdictions are included with each notification sent for a circuit.

Notification Subject Line and Message:

SCE Expected Shutoff Notice for PSPS Event in County Name.

Public Safety Power Shutoff update notification for official use: SCE may need to shut off power in the next 4 hours to reduce the risk of wildfire ignition. Areas that may be impacted include:

Circuit: [CIRCUIT name]

County:

Segment: [if listed] Incorporated City of:

Unincorporated County Area:

Shutoffs may occur earlier or later depending on actual weather conditions.

This notice expires after 4 hours; however, the listed circuit(s) will remain on the watch list and will be subject to PSPS until the conclusion of this weather event.

Customers on the affected circuits are being notified. Information about Community Resource Centers and Community Crew Vehicles is available at sce.com/psps.

Recommended Language to Share with the Public: Due to current weather conditions increasing the risk of wildfires, SCE may shut off power on specific circuits within the next 4 hours to protect public safety. Visit <u>sce.com/PSPS</u> for more information about the shutoffs and SCE's available customer care options.

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at <u>sce.com/PSPS</u> starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at <u>sce.com/outages</u>.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com SCE Contact Information for Public Officials only (Please DO NOT share with the public) First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: (800) 674-4478

Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>--Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations. SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS Non-PSPS outages: sce.com/outages

Shutoff Notification (De-energization notification)

Description:

Sent after a PSPS power shut off has been authorized for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. In 2021 these no longer include the official date/time of the de-energization. Sent to all impacted jurisdictions, grouped by County.

Notification Subject Line and Message:

SCE Shutoff Notice for PSPS Event on [CIRCUIT NAME] Circuit in [COUNTY NAME].

Public Safety Power Shutoff update notification for official use: SCE is shutting off power to reduce the risk of wildfire ignition.

Impacted circuits and locations are:

Circuit: [CIRCUIT name]
County: [COUNTY NAME].
Segment: If entered in Pega

Incorporated City of: [Incorporated City]

Unincorporated County Area: [unincorporated area description]

SCE is notifying customers who are being shut off. The map on sce.com/psps are being updated to reflect the current PSPS outages. Information about Community Resource Centers and Community Crew Vehicles is available at sce.com/psps.

When weather conditions improve, crews will inspect and repair the lines and restore power. Typically power is restored 3 to 8 hours after the end of the weather event.

Recommended Language to Share with the Public: Power has been shut off as part of public safety power shutoffs in our area. Please remember that all non-working traffic lights should be considered 4-way stop signs. Visit sce.com/PSPS for more information about the shutoffs and SCE's available customer care options. _____

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at <u>sce.com/PSPS</u> starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com SCE Contact Information for Public Officials only (Please DO NOT share with the public)

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: (800) 674-4478

Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>--Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations. SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS
Non-PSPS outages: sce.com/outages

Patrol and Inspection (formerly: imminent re-en)

Description:

Sent once inspections are underway and with 1-hour advance notice of expected power restoration, when possible, for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. Sent to all impacted jurisdictions, grouped by County.

Notification Subject Line and Message:

SCE is inspecting [CIRCUIT NAME] Circuit in [COUNTY NAME] for PSPS restoration.

Public Safety Power Shutoff update notification for official use: Our crews are inspecting the following circuits or circuit segments to restore power as soon as it is safe to do so:

Circuit: [CIRCUIT name]
Segment(s): if entered in Pega

Incorporated City: [incorporated city]

Unincorporated County Area: [unincorporated area description]

Typically, power is restored in 3-8 hours. Exceptions include circuits in remote areas and circuits that have sustained significant damage.

SCE is notifying customers. The map on sce.com/psps will be updated to reflect the current status.

Recommended Language to Share with the Public: SCE is inspecting its lines and, in most cases, will restore power within 3-8 hours. Exceptions include circuits in remote areas and circuits that have sustained significant damage. Please remember to treat all traffic lights that are out as 4-way stops. Visit <u>sce.com/PSPS</u> for more information.

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com SCE Contact Information for Public Officials only (Please DO NOT share with the public) First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: (800) 674-4478

Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>-Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations. SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS Non-PSPS outages: sce.com/outages

Restore Notification (formerly: RE-ENERGIZE)

Description:

Sent after a PSPS re-energization has occurred for specific circuit(s). No spreadsheet attachment, all content is on the body of the notification. Sent to all impacted jurisdictions, grouped by County.

Notification Subject Line and Message:

Important: SCE Restoration Notice for PSPS Event on [CIRCUIT NAME] Circuit in [COUNTY NAME].

Public Safety Power Shutoff update notification for official use:

SCE crews have restored power on the following circuit or circuit segments:

Circuit: [CIRCUIT name]
Segment(s): if entered in Pega

Incorporated City: [incorporated city]

Unincorporated County Area: [unincorporated area description] SCE is also notifying customers that power has been turned back on.

Recommended Language to Share with the Public: SCE has restored power that was shut off during the PSPS event. Visit <u>sce.com/PSPS</u> for more information. If your power is out, visit sce.com/outages.

-____

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

SCE Contact Information for Public Officials only (Please DO NOT share with the public)

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Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

 $Email: {\color{red} \underline{SCELiaisonOfficer@sce.com}}. {\color{red} \textbf{Note: Only monitored during emergency activations.}}$

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS Non-PSPS outages: sce.com/outages

Event Concluded Notification

Example 1: Use when <u>ALL</u> circuits have been restored. If any remain off, use Example 2, below. Note: this is not a county-specific "all clear." The automation system figures out all the jurisdictions that were notified during a specific activation and sends to each of them a finally event all-clear.. This is a single last activity performed at the end of the activation that includes all involved in the activation that the event is over. DO NOT send this notification while a PSPS activation is still in progress -- it will incorrectly tell ALL jurisdictions that the event is over!

Notification Subject Line and Message:

SCE PSPS Event Concluded in [COUNTY NAME].

Public Safety Power Shutoff update notification for official use:

Power has been restored to all customers in [county name.] and the PSPS event has concluded,

Recommended Language to Share with the Public: The public safety power shutoff in your area has concluded. If your power is still out, please visit <u>sce.com/outages</u> for more information.

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

Public Safety Partner Portal (available June 1, 2021)

PDFs of High Fire Risk Area (HFRA) circuit maps and GIS layers: sce.com/maps.

Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com

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Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations.

SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS Non-PSPS outages: sce.com/outages

Update customer contact information: sce.com/pspsalerts.

Example 2: Use when most circuits have been restored but one or more circuit remains deenergized. Note: this is not a county-specific "all clear." When the POC has passed but some circuits remain out, most typically because of 1) delays in patrol (for example requiring air-ops), 2) significant repairs required, or 3) access prohibited by fire crews. Those circuits may be transitioned to Operations and closed out from a PSPS standpoint. That information is included in the Event Concluded notification, indicating power is not fully restored for that circuit(s). DO NOT send this notification while a PSPS activation is still in progress -- it will incorrectly tell ALL jurisdictions that the event is over!

Notification Subject Line and Message:

SCE PSPS Event Concluded Notice for [COUNTY NAME].

Public Safety Power Shutoff update notification for official use:

The PSPS event has concluded, however some customers in [county name] remain without power.

Repairs and restoration for these customers will be handled by SCE's regular grid operations:

Circuit:

Segments:

Incorporated City of:

Unincorporated County Area:

Reason for continued outage:

Recommended Language to Share with the Public: The public safety power shutoff in your area has concluded, however some customers remain without power. If your power is still out, please visit sce.com/outages for more information.

Message cadence: The SCE Liaison Officer provides a rolling three-day advance warning of potential PSPS events, when possible, and sends update notifications every day. We will also notify you with time-sensitive shutoff and restoration information at the circuit level. Sudden weather changes may impact SCE's ability to provide advanced notice: a shutoff could occur sooner than anticipated.

Spreadsheet content: All circuits currently on the watch list in your county are listed in the attached spreadsheet. As the weather forecast becomes more exact, additional circuits could be added or removed from our watch lists. Circuits marked *Updated Period of Concern* in the Circuit Notification Status column will have new periods of concern or other changed status. Definitions are on the second tab of the spreadsheet. Please email SCELiaisonOfficer@sce.com with concerns or questions about the spreadsheet.

Weather forecasting: SCE's forecasting relies on in-house meteorologists and fire scientists. SCE

may notify for a potential PSPS in advance of Red Flag Warnings being declared by the National Weather Service, and weather forecasts on radio and television may provide different information.

Online outage information: Information and maps are available at sce.com/PSPS starting three days before the forecasted start date. If an outage does not appear on the PSPS map, it might be a weather-related or repair outage in the same area. These are mapped and listed at sce.com/outages.

For More Information:

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Weather conditions: sce.com/fireweather.

Post-PSPS reports:sce.com/psps.

REST service (web-based password-protected access to GIS layers), contact: SCERestInfo@sce.com **SCE Contact Information for Public Officials only (Please DO NOT share with the public)**

First Responders and Emergency Managers:

Phone: Business Resiliency Duty Manager 24/7 hotline: (800) 674-4478

Email: Business Resiliency Duty Manager/emergencies: <u>BusinessResiliencyDutyManager@sce.com</u>--

Only monitored during emergency activations.

Government/tribal officials:

Phone: Liaison (government relations) 24/7 hotline: 800-737-9811. Only monitored during emergency activations.

Email: <u>SCELiaisonOfficer@sce.com</u>. Note: Only monitored during emergency activations. SCE Contact Information for the Public: (Please DO share this information via web and social media).

Outage-specific customer service issues: 800-611-1911

Billing and service inquiries: 800-684-8123

PSPS event status: sce.com/PSPS Non-PSPS outages: sce.com/outages

PSPS Variable Notification Templates-Customers 9/29/2021 Activation

1 | Initial Notification

TEXT/SMS

SCE Safety Outage Alert: High winds and fire conditions are forecasted in your area from 'Day of week' 'morning/afternoon/evening' through 'End Day of week' 'morning/afternoon/evening'. We may have to shut off your power to decrease risk of dangerous wildfires. We are working to reduce the number of customers affected. We'll keep you updated so you know whether your power will be shut off. Visit sce.com/psps for the latest information. For downed power lines, call 911. View in more languages: www.sce.com/PSPSInitial Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safety outage alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... High winds and fire conditions are forecasted in your area from 'Day of week' 'morning/afternoon/evening' through 'End Day of week' 'morning/afternoon/ evening'. We may have to shut off your power to decrease risk of dangerous wildfires. We are working to reduce the number of customers affected. We'll keep you updated so you know whether your power will be shut off. Visit sce dot com slash psps for the latest information. If you see a downed power line call 911.

EMAIL

Subject: SCE Safety Outage Initial Notification: Public Safety Power Shutoff (PSPS) **From:** do not reply@scewebservices.com

Southern California Edison

For more information on PSPS in your preferred language, click below:

<u>ESPAÑOL</u> <u>한국어</u> <u>中文</u> <u>TIÊNG VIÊT</u> <u>TAGALOG</u> 1-800-441-2233 1-800-628-3061 1-800-843-8343 1-800-327-3031 1-800-655-4555

MORE LANGUAGES

Important Safety Message from Southern California Edison:

High winds and dangerous fire conditions are forecasted in your area from ^Day of week^ ^morning/afternoon/evening^ through ^End Day of week^ ^morning/afternoon/evening^ We may have to shut off your power to decrease risk of dangerous wildfires. We are working to reduce the number of customers affected. We'll keep you updated so you know whether your power will be shut off.

This alert applies to the following address(es):

Customer Address Service Account Meter Number Rate

- For the latest updates, outage map, and information about customer care services, visit sce.com/psps.
- For information about preparing for a power outage, visit sce.com/safety/family/emergency-tips.
- REMEMBER: If you see a downed power line call 911 first, and then notify SCE at 1-800-611-1911.

Thank you for your patience as we work to keep your community safe!

4| Imminent Shutdown PSPS EXPECTED 1-4 HOURS BEFORE SHUTOFF

TEXT/SMS

SCE Safety Outage Alert: It's likely we will need to shut off your power in the next 4 hours due to wind-driven fire conditions in your area. Conditions could last through <u>^End Day of week^ ^morning /afternoon /evening^</u>. We'll keep you updated and notify you again at the time of shutoff if we need to shut off your power. Weather could affect shutoff timing and wind-related outages may also occur. Thanks for your patience. Visit sce.com/psps for the latest information and availability of community resources. For downed power lines, call 911. View in more languages: www.sce.com/PSPSExpected Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safety outage alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... It's likely we will need to turn off your power in the next 4 hours due to wind-driven fire conditions in your area. Conditions could last through 'End Day of week' 'morning /afternoon /evening'. We'll keep you updated and notify you again at the time of shutoff if we need to turn off your power. Weather could affect shutoff timing and wind-related outages may also occur. Thank you for your patience. Visit sce dot com slash psps for the latest information and availability of community resources. If you see a downed power line call 911.

EMAIL

Subject: SCE Safety Outage Alert: Expected Public Safety Power Shutoff (PSPS) **From:** do not reply@scewebservices.com

Southern California Edison

For more information on PSPS in your preferred language, click below:

<u>ESPAÑOL</u> <u>한국어</u> <u>中文</u> <u>TIÉNG VIÊT</u> <u>TAGALOG</u> 1-800-441-2233 1-800-628-3061 1-800-843-8343 1-800-327-3031 1-800-655-4555

MORE LANGUAGES

Important Safety Message from Southern California Edison:

It's likely we will need to turn off your power in the next 4 hours due to wind-driven fire conditions in your area. Conditions could last through <u>^End Day of week^ ^morning</u> <u>/afternoon /evening^</u>. We continue working to reduce the number of customers affected. We'll keep you updated and notify you again at the time of shutoff if we need to turn off your power. Weather could affect shutoff timing and wind-related outages may also occur.

We understand this is inconvenient. We appreciate your patience as we work to keep your community safe.

This alert applies to the following address(es):

Customer Address

Service Account

Meter Number

Rate

For the latest updates, outage map, and availability of community resources, visit sce.com/psps.

For information about preparing for a power outage, visit sce.com/safety/family/emergency-tips.

REMEMBER: If you see a downed power line, call 911 first, and then notify SCE at 1-800-611-1911.

Thank you again for your continued patience as we work to keep your community safe!

5 | De-Energized

SMS/TEXT

SCE Start of Shutoff Alert: We are temporarily shutting off your power due to high risk of wind-driven wildfire in your area. These conditions could last through <u>*End Day of week* *morning/ afternoon/ evening*.</u> We will restore your power as soon as it's safe. Restoration typically takes 3-8 hours but could take longer if there is damage in your area. Remember to turn off or unplug appliances or equipment that may start automatically when power is restored. Thanks for your patience. Visit sce.com/psps for the latest information and availability of community resources. For downed power lines, call 911. View in more languages: www.sce.com/PSPSShutoff Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safety outage alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... We are temporarily shutting off your power due to high risk of wind-driven wildfire in your area. These conditions could last through ^End Day of week^ ^morning/ afternoon/ evening^. We will restore your power as soon as it's safe. Restoration typically takes 3 to 8 hours but could take longer if there is damage in your area. Remember to turn off or unplug appliances or equipment that may start automatically when power is restored. Thank you for your patience. Visit sce dot com slash psps for the latest information and availability of community resources. If you see a downed power line call 911.

EMAIL

Subject:SCE Safety Outage Alert:Start of Public Safety Power Shutoff (PSPS)From:do not reply@scewebservices.comSouthern California Edison

For more information on PSPS in your preferred language, click below:

<u>ESPAÑOL</u> <u>한국어</u> <u>中文</u> <u>TIÊNG VIÊT</u> <u>TAGALOG</u> 1-800-441-2233 1-800-628-3061 1-800-843-8343 1-800-327-3031 1-800-655-4555

MORE LANGUAGES

Important Safety Message from Southern California Edison:

We are temporarily shutting off your power due to high risk of wind-driven wildfire in your area. These conditions could last through <u>*Pind Day of week* morning/afternoon/evening*</u>. We will restore your power as soon as it's safe. Restoration typically takes 3-8 hours but could take longer if there is damage in your area. Please remember to turn off or unplug appliances or equipment that may start automatically when power is restored. We will update you as conditions change.

This alert applies to the following address(es):

Customer Address Service Account Meter Number

Rate

For the latest information, outage map, and availability of community resources, visit sce.com/psps.

REMEMBER: If you see a downed power line, call 911 first and then notify SCE at 1-800-611-1911.

We understand this is inconvenient. We appreciate your continued patience as we work to keep your community safe.

7 | PREPARING TO RE-ENERGIZE (IMMINENT RESTORATION)

SMS/TEXT

SCE PSPS Safe Restoration Alert: We're working to restore power in your area now that winds have died down. This typically takes 3-8 hours but could take longer if there is damage in your area. We will alert you again when your power comes back on. Please turn off or unplug appliances or equipment that may start automatically when power is restored and inspect your property for downed power lines. Visit sce.com/psps for the latest information and availability of community resources. For downed power lines, call 911. Thank you for your patience as we work to keep your community safe. View in more languages: www.sce.com/PSPSPrepRestore Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safe restoration alert. To continue in English, press 1. [Spanish press 2], all other languages press 3.... We're working to restore power in your area now that winds have died down. This process typically takes 3 to 8 hours but could take longer if there is damage in your area. We will alert you again when your power comes back on. Please turn off or unplug appliances or equipment that may start automatically when power is restored and inspect your property for downed power lines. If you see a downed power line stay away and call 911. For more information on the restoration process and availability of community resources, please visit sce dot com slash psps. Thank you for your patience as we work to keep your community safe.

EMAIL

Subject: SCE PSPS Safe Restoration Alert: Power will be Restored Soon
From: do not reply@scewebservices.com
Southern California Edison

For more information on PSPS in your preferred language, click below:

 ESPAÑOL
 한국어
 中文
 TIÊNG VIÊT
 TAGALOG

 1-800-441-2233
 1-800-628-3061
 1-800-843-8343
 1-800-327-3031
 1-800-655-4555

MORE LANGUAGES

Important Safety Message from Southern California Edison:

We're working to restore power in your area now that winds have died down. This process typically takes 3-8 hours but could take longer if there is damage in your area. We will alert you again when your power comes back on. Please turn off or unplug appliances or equipment that may start automatically when power is restored and inspect your property for downed power lines. If you see a downed power line, stay away, and call 911 first, then report it to SCE at 1-800-611-1911.

This alert applies to the following address(es):

Customer Address Service Account Meter Number Rate

For more information on SCE's restoration process and availability of community resources, please visit sce.com/psps.

We understand that Public Safety Power Shutoff events can be disruptive and thank you for your patience as we work to keep your community safe.

9-A | PSPS ENDED - RESTORED & ALL CLEAR [NO MORE RISK OF PSPS]

SMS/TEXT

SCE PSPS Safe Restoration Alert: We were able to restore power in your area and end this Public Safety Power Shutoff due to improved weather conditions. If your power is still off, please call 1-800-611-1911 or visit sce.com/outage. We understand that safety outages are inconvenient and thank you for your patience. View in more languages: www.sce.com/PSPSEnded Please reply with 1 to confirm receipt of this message. Please reply with 1 to confirm receipt of this message.

VOICE

Important SCE safe restoration alert... To continue in English, press 1. [Spanish press 2], all other languages press 3.... We were able to restore power in your area and end this Public Safety Power Shutoff due to improved weather conditions. If your power is still off, please call 1-800-611-1911 or visit sce dot com slash outage. We understand that safety outages are inconvenient and thank you for your patience.

EMAIL

Subject: SCE PSPS Safe Restoration Alert: All Power Restored **From:** do_not_reply@scewebservices.com Southern California Edison

For more information on PSPS in your preferred language, click below:

MORE LANGUAGES

Important Safety Message from Southern California Edison:

We were able to restore power in your area and end this Public Safety Power Shutoff due to improved weather conditions. If your power is still off, please call 1-800-611-1911 or visit sce.com/outage. We understand that safety outages are inconvenient and thank you for your patience.

This alert applies to the following address(es):

Customer Address Service Account Meter Number Rate

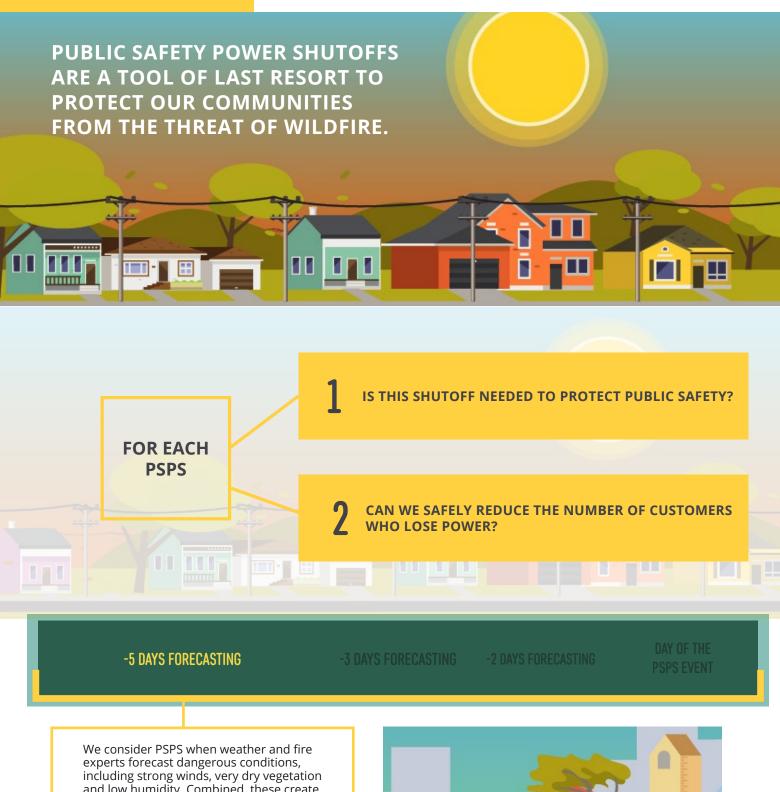
For more information about PSPS and wildfire safety, please visit sce.com/psps.

Attachment B-Quantitative and Qualitative Factors in PSPS Decision-Making Technical Paper



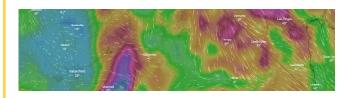
PUBLIC SAFETY POWER SHUTOFF:

DECISION-MAKING



including strong winds, very dry vegetation and low humidity. Combined, these create the risk that flying debris or other damage to our wires and equipment could cause a fire with the potential to spread rapidly.





Our meteorologists and fire scientists continue to review weather conditions, using both internal and external weather models and National Weather Service forecasts, alerts and warnings.



The PSPS Incident Management Team develops a list of circuits that could be impacted. We speak with county offices of emergency management to discuss any public safety issues.



The team is led by an incident commander. Incident commanders undergo continual training for this role and are responsible for all shutoff decisions.



Field crews look for factors that could increase the risk of fire such as existing damage or other hazards to poles and wires.

DECISION POINT

If the weather report is inconclusive, we will wait for additional weather reports or field assessments before we notify customers. We confer with the National Geographic Area Coordination Center (GACC) about fire danger risk.



DECISION

The PSPS Incident
Management Team reviews
options for supplying
customers with power from
different circuits to keep
them energized.





The Incident Management Team looks at twice-daily weather reports to see if the weather pattern has shifted. As the forecast becomes more precise, we update the list of circuits that might be impacted. If the weather pattern has weakened, or shifted outside of high fire risk areas, we will cancel the event.

We notify customers.
We try to visit our
Critical Care and Medical
Baseline customers
who rely on life-saving
medical equipment to
confirm they have been
informed about the
event.

-5 DAYS FURECASTING

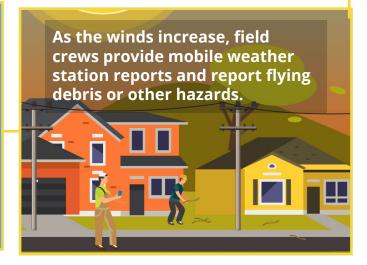
-3 DAYS FORECASTING

-2 DAYS FORECASTING

DAY OF THE PSPS EVENT

3-6 Hours: Before the winds are forecasted to hit peak speeds, the Incident Management Team begins monitoring conditions. A team, including experts in grid operations, meteorology and fire science, advise the incident commander, who will make the final decisions to shut off power.





DAY OF THE PSPS EVENT



Weather:

Every 10 minutes, weather station readings are updated for each circuit. Meteorologists identify weather trends that could slow or speed up decision-making.



DECISION POINT

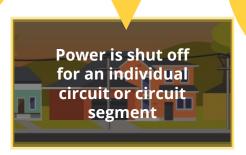
Grid Operations:

The team looks for opportunities to turn off individual segments of a circuit to keep the rest of the circuit powered.



Recommendation:

The lead PSPS operator recommends shutting off power to a circuit or segment when wind speeds are about to hit or exceed our predetermined threshold for unsafe conditions, or field crews advise of an urgent hazard in the field.





Authorization:

The incident commander reviews the recommendation and asks follow-up questions, if necessary, before approving the decision.

AS THE WINDS DIE DOWN, POWER IS RESTORED TO ALL CUSTOMERS When dangerous winds diminish, field crews inspect the lines that had been shut off. Usually, this is done by crews in utility trucks. If there is no damage to the lines, electricity will be restored immediately. The average time for restoration in 2020 was five to six hours, excluding lines that were damaged or required air or foot patrol. Some of these patrols will take longer because they must be done in daylight hours.

Attachment C-PSPS Event Data Workbook (Excel File Under Separate Cover)

Officer Verification

I am an officer of the applicant corporation herein and am authorized to make this verification on its behalf. I am informed and believe that the matters stated in the foregoing document are true.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 5th day of August 2022 in Cerritos, California

Shinjini Menon

Shinjini Manon

Vice President,

Asset Management & Wildfire Safety