SOUTHERN CALIFORNIA EDISON®
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2021 WILDFIRE MITIGATION PLAN UPDATE

Public Safety Power Shutoffs (PSPS) Panel
2021 WMP Update Technical Workshop
February 23, 2021

Agenda

Presenter: Erik Takayesu, Vice President PSPS Readiness

Topics

1. PSPS WMP Update and Corrective Action Plan
2. PSPS Event Statistics
3. SCE's Strategy to Reduce Need for PSPS
4. 2021 PSPS Commitment

PSPS WMP Update and Corrective Action Plan

Significant improvements were made in 2020 to reduce the scope of PSPS events and support our customers and communities during these events

Challenges

Challenges for our customers and communities continue to exist

- Noted in President Batjer's letter dated January 19, 2021
- Commissioners, Public Safety Partners, and customers shared feedback during a CPUC meeting on January 26, 2021

Improvements

SCE is committed to improve the execution of PSPS processes and protocols in preparation for the upcoming fire season

PSPS Corrective Action Plan

SCE presented a **PSPS Corrective Action Plan (CAP)** to the Commission **on February 12, 2021** focused on the following improvements:

1. **Reduce the Use of PSPS**
2. Execute PSPS Events Effectively
3. Mitigate Impacts of PSPS
4. Keep Partners and Customer Informed
5. Enhance and Improve Post Event Reporting

PSPS Event Statistics

2020 PSPS Impacts Compared to 2019

Circuits de-energized ↑ 16%	Customers de-energized ↑ 13%
Average duration ↓ 33%	Customer minutes of interruption ↓ 22%
2019 impacted circuits de-energized in 2020 ↓ 46%	2019 impacted customers de-energized in 2020 ↓ 36%

- Although a significant number of de-energized circuits/customers in 2019 were not de-energized in 2020, the total number of circuits/customers de-energized in 2020 increased due to weather conditions
  - Sub-transmission de-energizations make about 1% of total de-energizations; Transmission is 0%
- Q4 2020 had significantly less precipitation, record dry fuel conditions, and more Santa Ana wind events
  - >600 circuits monitored in November/December 2020 compared to <150 circuits in the same duration in 2019
  - Six PSPS activations in November/December 2020 compared to two activations in the same duration in 2019
- 2020 PSPS improvements were primarily focused on sectionalizing
  - ~21K customer outages avoided (9% of total 2020 PSPS de-energizations)
  - Removed ~25K customers from 2021 PSPS scope

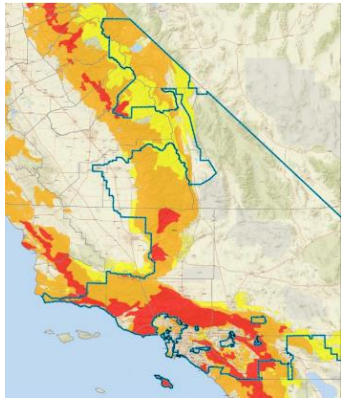
SCE's Strategy to Reduce Need for PSPS

SCE is focusing its efforts to reduce customer outages in the areas most frequently impacted by PSPS in 2019/2020 on its distribution system, via the following strategies:

- Circuit Exceptions
- Targeted Distribution Circuit Automation
- Grid Hardening

Circuit Exceptions

- Very site-specific situations where portions of our overhead distribution system traverse areas where persistent or prevalent wildfire risk are temporarily abated or no longer exist
  - Fuel loading less than represented by Tier or Reax risk
  - Burn scar
- Most cost-effective solution
- Requires fire science, engineering, and risk review



Targeted Distribution Circuit Automation

- Review of circuit configuration and operations to determine whether number of customers impacted can be reduced through further isolation
  - Benefits – generally low cost
  - Reduces the scope of additional grid hardening
  - Reduces exposure to customers located in urban vs rural, and underground areas
  - Enhances overall reliability

SCE's Strategy to Reduce Need for PSPS

Grid Hardening

- While wildfire risk models prioritize SCE's grid hardening deployment, the risk ranking of circuit segments does not necessarily coincide with segments de-energized for PSPS
- To account for the PSPS experiences in the last two years, SCE is utilizing additional criterion, resulting in accelerating grid hardening deployment to those areas with high wildfire risks where PSPS events have been more frequent
- Expedited grid hardening activities (e.g., covered conductor) on our most impacted circuits
- Covered conductor reduces the exposure to contact from foreign objects and allows wind thresholds to be raised
- Covered conductor is generally more cost effective and feasible than undergrounding

SCE's Strategy to Reduce Need for PSPS

Additional Situational Awareness

- Improving Weather and Fuels Forecasting Accuracy
  - Acquire additional data and use machine learning technology
  - Increase the resolution of SCE's in-house weather modeling
  - Use fire spread predictions to help with de-energization decisions
- Mobile Weather Stations
  - In areas where we do not have stationary weather stations, we use live field observations to provide current circuit conditions and transmit accurate data
- Artificial Intelligence (AI)
  - Implement AI platform to store, organize and analyze data collected for wildfire mitigation activities
  - Will help improve estimations of wind speeds at locations where PSPS has occurred most frequently in prior wildfire seasons

2021 PSPS Commitment

- Anticipated PSPS reductions will be driven primarily by two key PSPS mitigations:
  - SCE's circuit exception process
  - PSPS grid hardening (e.g., covered conductor deployment)
- Our grid hardening strategies and investments will ultimately create a more resilient system across our service area for all weather types and help reduce the use of PSPS
- These mitigations are expected to yield similar PSPS reduction benefits in future years, although SCE will continue to monitor PSPS execution and perform ongoing improvements based on 2021 events
- Based on current strategy for PSPS mitigations, SCE expects to significantly reduce commonly recurring PSPS de-energizations on frequently impacted circuits within the near term

2021 Anticipated PSPS Reductions* (Under 2020 Weather Conditions)

Scope	Frequency	Duration
↓ 15% (~27,000 Customers)	↓ 20% (~100 Circuits)	↓ 35% (~100 Million Minutes)

**Commitments are from the 2021 WMP Update and were established prior to SCE's CAP filing*

Thank You

PSPS Information and Resources:
https://www.sce.com/wildfire/psps
https://www.sce.com/safety/family/emergency-tips
https://www.sce.com/wildfire/customer-resources-and-support