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PSPS Forecasted Elevated Fire Weather Conditions

After Action Report / Improvement Plan
DATE: 11.24.2021

Name	PSPS 11.24.21 IMT Activation	Activation Dates	11.22.21 – 11.25.21
Type / Category	PSPS Activation - Forecasted Elevated Fire Weather Conditions		

Activation Summary, Scenario

SCE activated its Emergency Operations Center on November 22, 2021, at 2:15 pm after SCE's meteorologists became aware of the potential for elevated fire weather for portions of Central and Southern California beginning November 24th.Over the next few days, successive weather models continually increased the strength of the event and this ultimately brought more circuits into scope. The expected peak wind gusts predicted by the weather models on November 22nd were around 55- 60 MPH. However, on November 24th, the first day of the event, new weather model guidance was suggesting that wind gusts could be up to 75-80 MPH in some isolated locations. This same increase in intensity was also observed in successive runs of the external weather models, such as those used by the National Weather Services (NWS). As a result, the number of circuits in scope increased from about 77 circuits on the 22nd to about 154 circuits (including downstream circuits) on the 24th. In the end, winds ended up being much higher than originally forecasted, but weather models were correct in predicting the increasing strength of the event with the highest wind gust recorded at 89 MPH.

At approximately 10:00 am on November 24th, SCE began observing rapidly escalating wind speeds, decreasing humidity levels, and high Fire Potential Index (FPI) values in portions of Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. As part of SCE's scope of work and as a best practice, SCE's meteorology and fire science experts consulted the Geographic Area Coordination Center (GACC). GACC personnel indicated that due to the anticipated severity, widespread nature and duration (potentially longest of the year) of the weather event, a High Risk would be entered on the GACC's 7-Day Significant Fire Potential product that assesses the chance for a large fire, along with a Moderate rating on the Santa Ana Wildfire Threat Index (SAWTI). GACC personnel also confirmed that there was potential for a large fire due to the historically dry Energy Release Component (ERC) levels for the time of year and extreme dryness of the vegetation in the areas of concern. These same concerns were also amplified by SCE's Fire Scientist who also alerted the Dedicated PSPS IMT to extreme conditions as a result of the wind speed intensity, the state of the fuels and the potential extended duration of the event. Additionally, SCE also took into consideration when calling this event, the National Weather Service issued Red Flag Warnings beginning the morning of November 24th and continuing through 6 pm on November 26th for most of Southern California, including Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties.

By the afternoon on that day, actual fire weather conditions in the areas of concern met or exceeded SCE's established PSPS thresholds for proactive de-energization. SCE ultimately de-energized 78,514 customers on

102 circuits in Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties on November 24th and November 25th. SCE was able to reduce customer impacts through mitigations, as detailed in Section 10.

Weather conditions began improving and SCE began re-energizing customers in some of the impacted areas by late afternoon of Wednesday, November 24th, continuing through Friday, November 26th. After patrolling the de-energized circuits and remediating identified damage, service to customers on all but one circuit segment was restored by November 26th at 4:15 pm. Service to the remaining customers was restored on November 26th by 7:48 pm.

The notification process was impacted by the fast-moving weather and SCE's commitment to minimize de-energizations through partial circuit de-energizations. Despite these challenges, approximately 95% of customers received at least one notification prior to de-energization. SCE remains committed to improving notification performance, and as detailed later, this performance should be notably improved with the completion of a fully automated system, scheduled for early 2022.

Strengths:

The dedicated PSPS IMT Team continues to work diligently to ensure the communities we serve are protected from the potential of dangerous wildfires, by safeguarding the importance of strong communications, teamwork, and collaboration across the various sections/branches.

- No injuries
- No fire starts from our equipment
- Virtual EOC environment continues to work well for PSPS activations

Areas for improvement:

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.

- Nine participants completed SCE's engagement survey; five participants rated the engagement as fair or better; four rated it as poor

Three overarching issues were core to most of the gaps during this event:

1) **Operational complexity outmatched the legacy system used to manage data and communications.** Relying on systems that were not talking to each other, i.e. the Beckerboard (in-house event management system) to manage the event, Microsoft Teams for communication, OMS to verify customer data, and

separate notification systems for CS and LNO meant that actions were not automatically aligned, creating significant notification delays, gaps, missed information and inconsistent counts.
Cascading issues included:

a. Delayed issuance of the MCL/POC, which in turn delayed notifications and reporting to CalOES.
b. Reduced ability to track or notify at the circuit segment level, leading to operational misses (e.g. Sebastian circuit re-energization) and lack of bandwidth to notify at the segment level (e.g. pre-event and next day notifications)

2) **Resource issues:** Across work groups, it was difficult to bring on additional resources on Thanksgiving Day, night, and following day. This contributed to slow overnight restoration, inability to restock CRC/CCV locations, delayed reporting to CalOES, and system inaccuracy.
3) **Restoration delays:** Delays caused by protocols and potentially resource planning hampered speedy restoration, leading to a 9-hour average restoration time

Lessons Learned / Corrective Actions					
	#	Discussion	Recommended Solution	Owner/Date	
Notification and Stakeholder Engagement	1	The complexity of this event (fast moving weather, # of circuits, segmentation) led to some delayed and missed customer and public safety partners notifications and inconsistent reporting to state agencies. New automation tools to handle the complexity are not yet implemented across all workstreams.	SCE to accelerate adoption of Foundry automation tools (use cases 1-4) across workstreams.	"employee name removed"	Q4/21-Q1/22
	2	IMT did not have access to situational awareness data for circuits de/re-energized, including counts of customers impacted (e.g. residential, MBL, CC, CI, etc.). This resulted in delayed and missed customer and public safety partners notifications and inconsistent reporting to state agencies. Need one source of truth for all situational awareness.	Add and implement a Foundry use case to provide IMT with near real-time access to circuit status, including corresponding counts of customers impacted.	"employee name removed"	3/31/2022
	3	Inability to efficiently filter pre-event notifications to account for higher thresholds on circuits and circuit segments with covered conductor resulted in processing delays and led to over-notification when this practice was paused for expediency.	Add a Foundry use case to bypass customers from pre-event notifications on circuits / circuit segments with covered conductor unless forecast is expected to exceed higher thresholds.	"employee name removed"	3/31/2022

	4	Notification issues included: •We did not have pre-developed notifications for situations where the POC had ended but patrol had not started. Ad hoc notifications were not feasible because they would have to be produced in multiple languages. •Typical restoration language (3-8 hours) did not anticipate extended overnight delays. • Continued shutoff notification was unworkable due to segmentation.	Translate and implement additional "special use notifications." Evaluate current restoration language and adjust wording to account for situations where restoration patrols may be delayed due to darkness; evaluate ways to provide more precise estimates for circuits with known restoration delays, such as canyon areas (that take longer to patrol) and circuits that must be patrolled during daylight hours. Develop capability and implement required automation to efficiently manage continued shutoff notifications for circuits that are partially re-energized.	"employee name removed"	6/30/2022
	5	There was internal confusion on when a secondary verification is needed for undelivered notifications to MBL and SS customers. This led to calls being made to these customers that where unnecessary during this event.	Evaluate current strategy for performing secondary verification calls for MBL and SS customers and make adjustment to documentation and provide training as necessary.	"employee name removed"	3/31/2022
Operations	6	Missing circuit segment: Sebastian 4 kV Line % Rubidoux Sub remained de-energized beyond RAR 5735 after upstream circuits Larch and Limonite 33 kV Lines % Calectric Sub were released around 0530 on 11/26/2021.	Need to understand whether new Foundry tools would catch this, and if not, find a failsafe solution for future events.	"employee name removed"	3/31/2022
	7	ICs felt unfamiliar with availability and rules for handling generator requests.	Provide PSPS IMT ICs with training on PSPS generator protocol	"employee name removed"	3/31/2022

Restoration Planning	8	Approximately 30,000 customers, or 60% of the circuits, that were cleared overnight when POC ended (at 10 pm) remained off at daybreak and some even into the afternoon. SCE received complaints from stakeholders that restoration did not meet expectations and that air patrols did not start until after 8am and should have started at sunrise.	Conduct end-to-end assessment of the PSPS restoration strategy used for this event to identify potential opportunities to expedite restoration. Implement appropriate process changes to optimize restoration strategies based on identified best practices. Update air ops process and timing for wings up time, fueling and overnight positioning, and test with tabletop exercise to confirm increased efficiency	"employee name removed"	3/31/2022
Customer	9	CRC/CCV deployment was limited by resource constraints during event expansion: 3 additional CRCs/CCVs were requested during the event; one was provided. Additionally, logistics delays led to supply shortages on Friday. After-event reports from deployed staff indicated that they had safety concerns after threats from site visitors.	Short-term: Use rostered IMT resources to augment customer care staffing for large events Mid-term: Transition volunteer customer care roster to official BR IMT Roster Compare established Logistics SLAs to identified customer care business requirements. Identify and remediate any discrepancies. Additional safety training, including de-escalation training and reinforcing stop work authority, will be provided to all customer care staff.	"employee name removed"	3/31/2022

	10	Anecdotal complaints about wait times on 211 referral service lines.	Determine if existing 211 contract contains SLAs for response time. Compare 211 performance against established SLAs Make required contract changes (if necessary) to ensure acceptable response times.	"employee name removed"	3/31/2022
	11	SCE automated customer contact center messaging (IVR) seemed to suggest the call center was closed for the holiday	SCE will change messaging protocol for IVR messages over holidays to clarify that contact center is open 24/7 for outages and emergencies, including PSPS.	"employee name removed"	3/31/2022
Communications	12	Telco coordination: we need better answers for customers on why telecom does not have back-up generation (in areas where cell service goes out during de-energizations (e.g. Silverado, Kegel Canyon)	Corp comm to develop messaging and fact sheet to deploy in customer communications across channels	"employee name removed"	3/31/2022
	13	Need to have clear messaging and set reasonable expectations for customers for claims process and outcomes	Refine One Voice Messaging. Corp comm to develop messaging and deploy in customer communications across channels	"employee name removed"	3/31/2022