Gary Chen
Director
Safety and Infrastructure Policy
Regulatory Affairs

03/31/2023

Caroline Thomas Jacobs, Director
Office of Energy Infrastructure Safety
715 P Street 20th Floor
Sacramento, CA 95814

SUBJECT: Southern California Edison Company's 2022 Wildfire Mitigation Plan Annual Report on Compliance (ARC) Pursuant to PUC Section 8386.3(c)(1)

Dear Director Caroline Thomas Jacobs,

Pursuant to California Public Utilities Code (PU Code) § 8386.3(c)(1) and the Wildfire Safety Division's (WSD)[1] Final Guidance on Compliance Operational Protocols issued on February 16, 2021 (Protocols), Southern California Edison Company (SCE) submits this annual report addressing compliance with its Wildfire Mitigation Plan (WMP) during calendar year 2022.

If you have any questions, or require additional information, please contact me at gary.chen@sce.com.

Sincerely,

//s//
Gary Chen
Director, Safety and Infrastructure Policy, Regulatory Affairs
Southern California Edison

cc: Docket No. 2022-EC_ARC
compliance@energysafety.ca.gov

[1] On July 1, 2021, the WSD transitioned from the California Public Utilities Commission (Commission or CPUC) to the California Natural Resources Agency and became the Office of Energy Infrastructure Safety (OEIS or Energy Safety).

Southern California Edison Company's 2022 WMP Annual Report on Compliance

I. INTRODUCTION

California Public Utilities Code Section 8386.3(c)(1) directs electrical corporations (EC) to file a report addressing the EC's compliance with their Wildfire Mitigation Plan (WMP) during the prior calendar year. The Protocols provide further guidance[2] and lay out five requirements for the ECs to address in order to demonstrate compliance with their WMPs in the ARCs. In accordance with PUC § 8386.3(c)(1) and the Protocols, SCE submits its ARC addressing compliance with its WMP during calendar year 2022 (2022 SCE ARC). SCE substantially complied with its Commission-approved 2020-2022 WMP[3] for wildfire mitigation work in 2022, as discussed below.

On February 18, 2022, SCE submitted its 2022 WMP Update[4] covering 2022 and building on its 2021 WMP Update and its comprehensive 2020-2022 WMP, including successes and lessons learned. In 2022, SCE tracked 39 specific wildfire-related initiatives included in its 2022 WMP Update, including grid hardening, enhanced inspection and repair programs, continuation of extensive vegetation management, increased situational awareness and response and augmented activities for Public Safety Power Shutoff (PSPS) resilience and community engagement, particularly for underrepresented groups and access and functional needs customers.

On August 25, 2022 the CPUC ratified Energy Safety's Action Statement approving SCE's 2022 WMP Update.[5]

II. SCE RESPONSES TO ANNUAL COMPLIANCE REPORT REQUIREMENTS

a) An assessment of whether the EC met the risk reduction intent by implementing all of their approved WMP initiatives, i.e., the degree to which initiative activities have reduced ignition probabilities;[6]

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[2] *See* "Wildfire Safety Division – Compliance Operational Protocols", issued February 16, 2021, *available at* 2021 WMP Compliance Operational Guidelines

[3] "Substantial compliance" is the standard for WMP compliance review. *See* Pub. Util. Code §§ 8386.1, 8386.3(c)(4), and CPUC Resolution WSD-012.

[4] *See* SCE's 2022 WMP Update, available at https://www.sce.com/. SCE submitted a supplement to its 2022 WMP Update on April 8, 2022.

[5] *See* CPUC Resolution SPD-2, *available at* Microsoft Word - Final Resolution SPD-2 -Ratifying the decision of OEIS to approve the 2022 Wildfire Mitigation Plan Update of (ca.gov)

[6] WSD's guidance describes this section as providing an "(e)xplanation of how ignition probabilities and estimated wildfire consequences have been reduced during the compliance period as a result of WMP initiative implementation (i.e., for the EC ARC due March 31, 2021, the EC shall report on the prior compliance period, defined as January 1, 2020 to December 31, 2020)."

i. If the EC fails to achieve the intended risk reduction, EC shall provide a detailed explanation of why and a reference to where associated corrective actions are incorporated into their most recently submitted WMP.

Summary

SCE met its intended risk reduction by substantially completing the vast majority of its approved WMP initiatives and activities. Specifically, in 2022, SCE met or exceeded 38 of its 39 WMP initiatives. Further, for the one initiative not complete (Legacy Facilities, SH-11), SCE achieved two out of three of the sub-components of that initiative's target and will complete the remaining component in Q3 2023. Some highlights of the activities completed in 2022 include the following:

- Installed approximately 1,399 circuit miles of covered conductor, exceeding target;
- Completed approximately 15 miles of undergrounding, exceeding target;
- Completed 316,823 distribution and 34,358 transmission structure inspections in High Fire Risk Area (HFRA)--exceeding targets--including areas of concern, using an approach that inspects transmission and distribution structures that represent up to 99% of risk each year;
- Maintained line clearances, meeting target; completed hazard tree assessments on more than 460 circuits and performed over 5,000 hazard tree mitigations – and met the substantial completion of one full pass of SCE's service area for conducting hazard assessments; cleared brush at the base of more than 100,000 poles, exceeding targets;
- Installed 160 weather stations, exceeding target and resulting in more than 1,620 weather stations installed across our HFRA and equipped approximately 560 weather station locations with artificial intelligence/machine learning (AI/ML) capabilities for improved forecasting;
- Installed 16 HD cameras, exceeding target and resulting in a total of more than 180 HD cameras installed across our service area since inception; this represents approximately 90% coverage of our HFRA;
- Installed 15 sectionalization devices, meeting target and resulting in a total of more than 150 devices installed since this wildfire program's inception, adding to SCE existing portfolio of remote sectionalization devices;
- Installed/replaced fusing at 369 fuse locations, exceeding target and resulting in fusing installed/replaced at more than 13,700 fuse locations on the grid since program inception; and
- Delivered more than 3,460 Critical Care Backup Batteries to medical baseline customers and issued 3,129 customer rebates for portable power stations and portable generator rebates, exceeding targets.

Please see **Attachment A** for a complete status of all WMP initiatives. As a result of these efforts, SCE has reduced wildfire risk significantly. More work remains to be done, however, as a significant portion of our HFRA still remains unhardened where ignitions can endanger communities with limited egress or where fires can spread rapidly and widely.

Impacts of SCE's WMP Activities in 2022

Beyond meeting or exceeding the vast majority of its 2022 WMP activity targets and further implementing its risk-informed decision-making and prioritization practices, SCE continues to evaluate metrics that can offer additional insights into the effectiveness of its mitigation portfolio. While these effectiveness metrics can provide encouraging indications of risk reduction from SCE's activities and initiatives, large variations in weather events (e.g., temperature, rainfall, fuel moisture, and wind) can impact the metrics' outputs and short-term variations, and therefore may not represent direct correlations between wildfire risk reduction and SCE's wildfire mitigations.[7]

Consistent with previous comments, SCE continues to have fundamental concerns regarding the potential use of outcome-based metrics to evaluate a utility's compliance with its approved WMP.[8] Outcome-based metrics are not indicative of whether a utility properly executed and complied with its approved WMP. This is because these metrics are largely dependent on several factors outside the utility's control, such as weather conditions, fuel moisture, etc. Such factors are not relevant to the purpose of a compliance assessment, which must focus on whether the utility substantially performed its wildfire mitigation work and allocated associated funding per the terms of its agreed upon WMP.

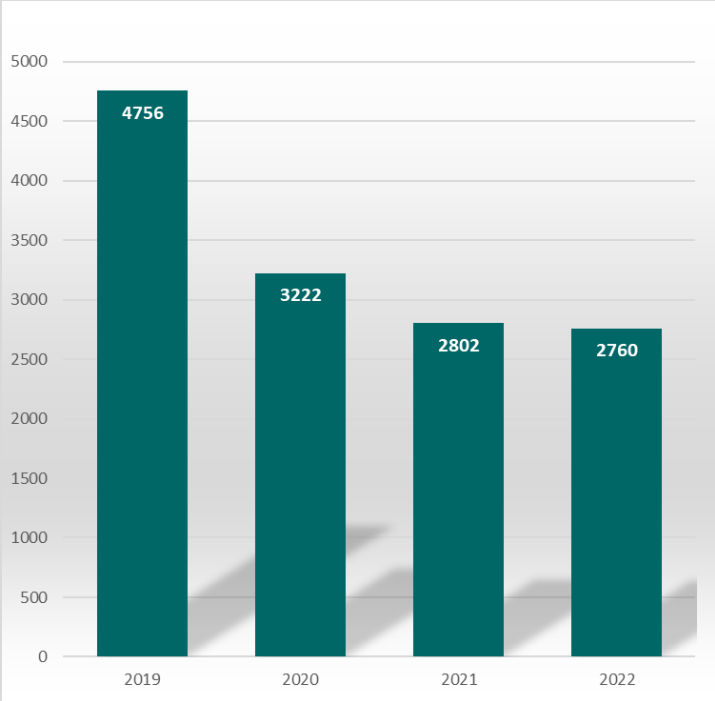
Notwithstanding the foregoing, SCE agrees that certain outcome-based metrics—viewed in a particular year—may be helpful in informing the content of future WMPs to enhance their effectiveness. The following figures (Figure 1 to Figure 5) provide a 4-year review (2019-2022) of examples of options for outcome-based metrics that SCE currently tracks.

As depicted in Figure 1 below, SCE has observed a downward trend in the number of risk events from 2019 to 2022 as it has deployed wildfire mitigations to address ignition risk drivers. The information in Figure 1 is not normalized for weather events, which vary from year to year.

[7] High Fire Threat Districts (HFTD) Tier 1 are de minimis and omitted from the figures.

[8] *See*, e.g., November 28, 2022 SCE Opening Comments on Draft Annual Report on Compliance for Southern California Edison's 2020 Wildfire Mitigation Plan; November 22, 2021 SCE Comments on Draft Resolution M-4860 and Related Attachments; November 3, 2020 SCE Comments on Draft Resolution WSD-012 and Related Attachment; October 2, 2020 SCE Comments on the Workshop for the Draft WMP Compliance Process Proposal Presentation.

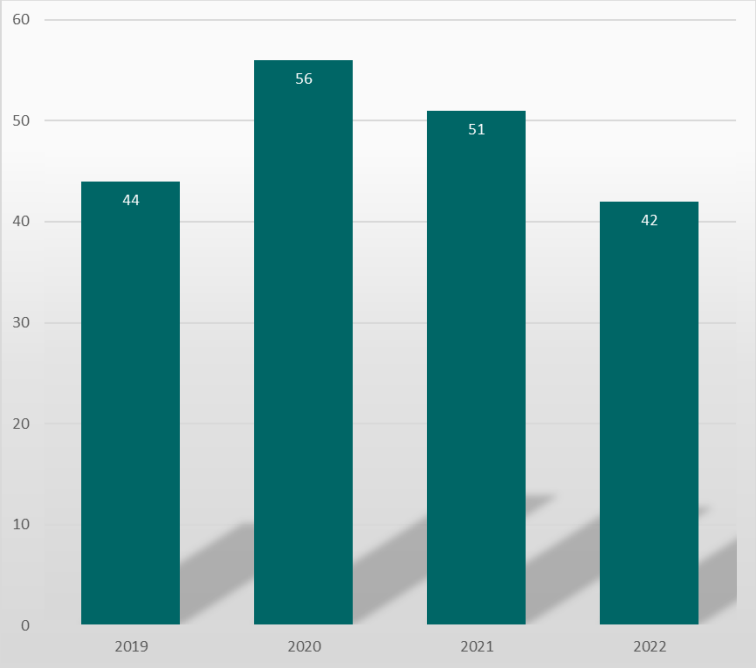
Figure 1. Risk Events*



*Risk events include wire downs, contacts with objects, line slap, events with evidence of heat generation, and other events that cause sparking or have the potential to cause ignition.

As depicted in Figure 2 below, SCE has generally observed a downward trend in CPUC Reportable Ignitions and Electric Safety Incident Report (ESIR) Ignitions from 2020 to 2022. In 2022, HFRA ignitions decreased by 20% and 17% since 2020 and 2021, respectively. The decrease is primarily due to a decrease in CFO caused ignitions, which aligns with the mitigations central to SCE's Integrated Wildfire Mitigation Strategy (IWMS), namely covered conductor. SCE projects a decline in CPUC reportable ignitions in HFRA over the WMP period.

Figure 2. CPUC Reportable and ESIR Ignitions in HFTD



A CPUC reportable ignition includes all of the following:

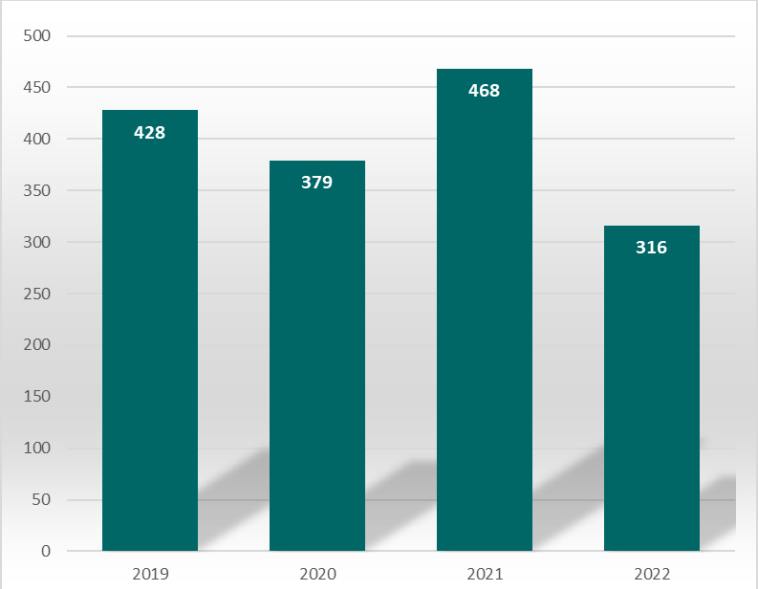
(1) ignition is associated with the utility's powerlines (both transmission and distribution);
(2) something other than the utility's facilities burned;
(3) the resulting fire traveled more than one meter from the ignition point.

An ESIR ignition includes the following:

(1) Fatality or personal injury requiring in-patient hospitalization;
(2) Significant public attention and/or media coverage; or
(3) Property damage to the utility or others is above $50,000.

As depicted in Figure 3 below, SCE has not observed a trend in the overall number of wire down events year over year. But SCE has observed a decline in specific sub-drivers such as conductor failure, splice failures and crossarm failures that aligns with covered conductor deployment. Moreover, circuits that are fully covered per mile compared to bare circuits see a reduction of over 60% in wire downs caused by drivers that covered conductor is expected to mitigate such as conductor and splice failure.

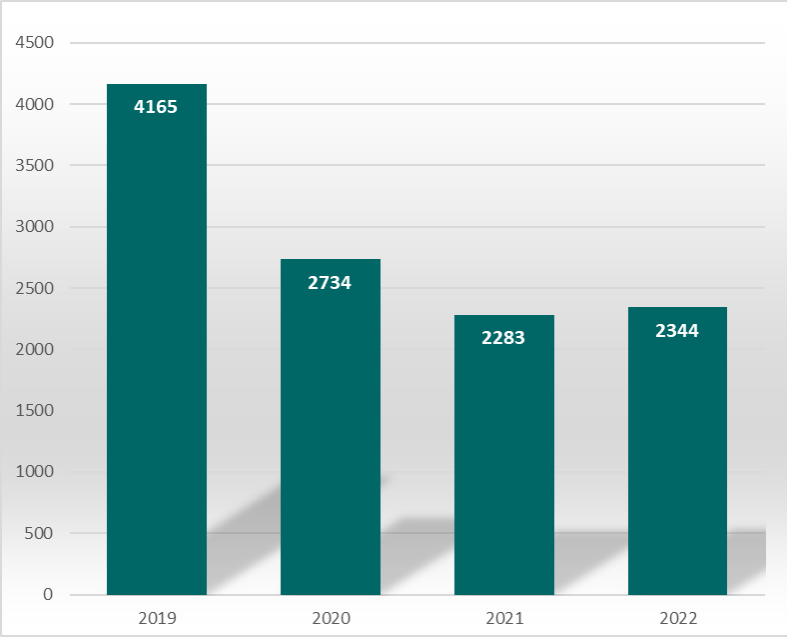
Figure 3. Wire Down Incidents in HFTD



Wire down events occur at a greater frequency than ignitions. Wire down events precede only a fraction of ignition events.

As depicted in Figure 4 below, SCE has observed a general downward trend in outage events that were not due to contact with vegetation in HFTD.[9] A slight increase in these events in 2022 was driven by an increase in heat events that year. While these outage events have occurred on HFTD circuits, the event may or may not have originated in HFTD.

Figure 4. Outage Events in HFTD NOT Due to Contact with Vegetation

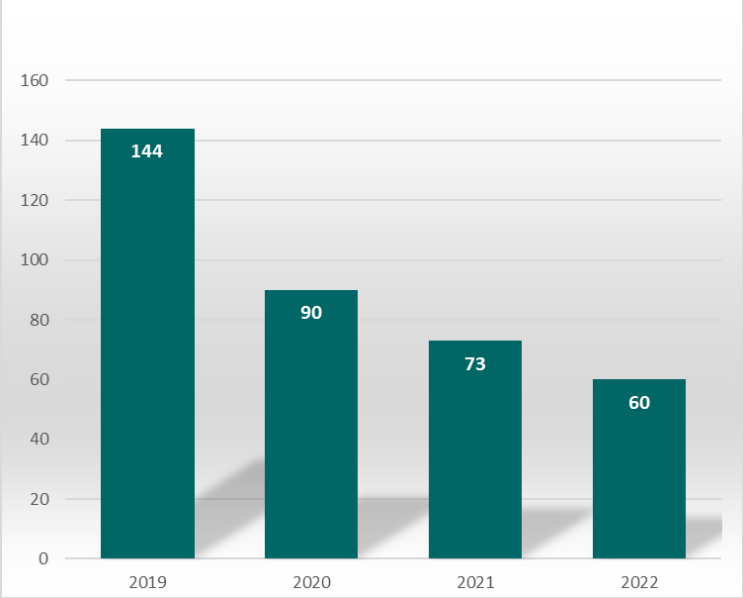


Outage events that occurred in SCE's HFTD from 2019 to 2022, not including outage events caused by vegetation contact.

[9] Outage information verified as of January 15, 2023. Some data may be subject to change pending further validation.

As depicted in Figure 5 below, SCE has observed a downward trend in outage events due to contact with vegetation in HFTD from 2019 to 2022.[10] This decrease in "Tree Caused Circuit Interruption" (TCCI) overlaps with the start of SCE's Hazard Tree Management Program (HTMP) and Expanded Line Clearing activity. While these outage events have occurred on HFTD circuits, the event may or may not have originated in HFTD.

Figure 5. Outage Events in HFTD due to Contact with Vegetation



Outage events only caused by vegetation contact that have occurred in SCE's HFTD from 2019 to 2022

Advancements Made in 2022 That Will Further Reduce Risk in 2023 and Beyond

To further improve its wildfire mitigation strategy, in 2022, SCE developed its IWMS. The IWMS Risk Framework defines three risk tranches within SCE's HFRA based on potential consequences should an ignition occur at a specific utility asset location. For the risk analysis, SCE divides its HFRA into equal-sized polygons about 214 acres in area and then uses several factors such as egress, burn history, and other environmental factors (e.g., high wind locations) to categorize circuit segments within its HFRA into three distinct risk tranches: Severe Risk Areas, High Consequence Areas, and Other HFRA (described in **Table 1**).

[10] Outage information verified as of January 15, 2023. Some data may be subject to change pending further validation.

Table 1. IWMS Framework Risk Tranches (Mutually Exclusive)

Severe Risk Area Criteria
• Population egress, high fire frequency location, and burn-in buffer into egress locations. • Significant fire consequence – Acres burned consequence greater than 10,000 over an 8-hour unsuppressed model simulation. • High winds – Locations, which if fully covered with covered conductor, would still be subject to high PSPS likelihood. • Communities of Elevated Fire Concern (CEFCs) – smaller geographic areas where terrain and other factors could lead to smaller, fast-moving fires threatening populated locations under benign (normal) weather conditions.
High Consequence Area Criteria
• Not identified in meeting Severe Risk Area criteria. • Destructive fire consequence – Acres burned consequence between 300 and 10,000 over an 8-hour unsuppressed model simulation. • Locations subject to PSPS events in which covered conductor has not been fully deployed.
Other HFRA Criteria
• Not identified in meeting Severe Risk Area or High Consequence criteria. • Small fire consequence - Acres burned consequence less than 300 over an 8-hour unsuppressed model simulation.

In 2022, SCE started using the IWMS Risk Framework to prioritize mitigation selection and scope for grid hardening activities, inspection programs, and vegetation management activities. The grid hardening mitigations scoped with the IWMS Risk Framework will not be placed in service until 2023 at the earliest, however, due to the long lead time for planning and construction for covered conductor and undergrounding.

In early 2022, SCE reviewed in-flight covered conductor scope for 2022 and 2023 that was still in earlier stages for alignment to the IWMS Risk Framework. Based on the insights from these reviews, SCE was able to guide scoping decisions to continue the mitigation as-is, target for higher risk mitigation activity, or stop scope completely.

SCE also evaluated the alignment of IWMS with the High-Fire Risk Informed (HFRI) detailed inspection scope strategy and has prioritized structures in Severe Risk Areas and High Consequence Areas to be inspected more frequently starting with 2023 inspections.

Similar alignment was also assessed in 2022 for vegetation management program strategy, such as with the HTMP, where the risk methodology prioritized vegetation grids that had higher proportions in Severe Risk Areas, placing them on annual inspection cycles.

b) A full and complete listing of all change orders and any other operational changes, such as initiative location changes, made to WMP initiatives, with an explanation of why the changes were necessary, and an assessment of whether the changes achieved the same risk reduction intent;

SCE did not submit a Change Order filing and did not make any other operational changes, such as initiative location changes, to its WMP initiatives in 2022.

c) Descriptions of all planned WMP initiative spend vs actual WMP initiative spend and an explanation of any differentials between the planned and actual spends;

Attachment B provides a comprehensive table describing 2022 forecast versus actual capital and O&M spending variances for WMP initiatives. A description of variance drivers accompanies each WMP initiative if the initiative's variance meets the criteria set forth below:

- Underspend of any amount; or,
- Overspend that meets both of the following criteria
  - Variance ≥ 20%; and,
  - Variance ≥ $10,000,000

d) A description of whether the implementation of WMP initiatives changed the threshold(s) for triggering a PSPS event and/or reduced the frequency, scale, scope and duration of PSPS events;

SCE's 2022 PSPS season began in July with one small de-energization event and ended with two larger events in November, resulting in approximately 16,000 customer outages, 13 circuit de-energizations and approximately 7 million customer minutes of interruption. A core tenet of SCE's PSPS operating principles is to keep customers safely energized to the extent possible, which is why PSPS remains a tool of last resort. As such, SCE's goal is to de-energize circuits only when necessitated by actual conditions and when the benefits of de-energization outweigh the risks. SCE monitors real-time conditions via live observations by its crews in the field and a network of over 1,600 weather stations deployed along circuits throughout the HFTD. Once SCE decides that a particular circuit or circuit segment should be de-energized to prevent a potentially significant wildfire, it isolates and shuts off power to the smallest possible portion of a circuit necessary to help protect customers and communities from the threat of wildfire.

SCE's targeted PSPS mitigation efforts helped reduce PSPS customer impacts in 2022. Last year, SCE expedited grid hardening activities on 70 of its Frequently Impacted Circuits (FICs). These 70 circuits had cumulative impacts of 60 de-energizations, 180,000 customer outages and 50 million customer minutes of interruption in 2020 and 2021. Covered conductor was the principal mitigation deployed in 2022. Due to covered conductor's ability to reduce risk of contact from foreign objects, SCE was able to raise wind speed de-energization thresholds from the National Weather Service Wind Advisory levels (at 31 mph sustained wind speed and 46 mph gust wind speed) to the National Weather Service High Wind Warning levels (at 40 mph sustained and 58 mph gusts) on portions of overhead circuitry that have covered conductor installed. In fact, through 2022, SCE was able to raise wind speed de-energization thresholds for nearly 2,300 circuit miles where covered conductor had been installed (more than half of SCE's total covered conductor deployment to date). Covered conductor reduced the need for PSPS on some circuits in lower wind areas and reduced the duration of PSPS de-energizations on circuits in higher wind areas where the higher thresholds were still breached.[11]

Other important measures taken in 2022 included installation of new automated switches. Sectionalizing devices help to reduce the size of the areas that are de-energized during PSPS events. Redundancy in SCE's electrical grid allows for transfer of load from one circuit to another through a circuit tie, which means that, even on a radial line, SCE can leave upstream segments of a circuit energized while de-energizing areas downstream that are experiencing high fire threat conditions. Using these devices and operating in this way allows for reducing the number of customers impacted by PSPS events.

SCE also conducted circuit exception reviews in 2022 to either raise PSPS thresholds or eliminate the circuits from PSPS consideration altogether. SCE's circuit exception process entails a detailed periodic review of the wildfire risk of circuits in the HFTD. If the risk is sufficiently low, an approved exception allows a circuit that would otherwise have a lower PSPS windspeed threshold to be increased to the National Weather Service High Wind Warning level, or to take it out of PSPS consideration altogether, depending on the specifics of the circumstances. In this way, the circuit exception process can reduce the frequency, scale/scope, and duration of PSPS events on circuits for which exceptions are approved. In the exception review process, wildfire risk is determined by consideration of localized fuel conditions, topography, proximity to wildland areas, and other criteria. Exceptions are reviewed annually since these criteria can change with time due to processes like urbanization or a recent burn scar.

Table 2 compares the 2022 PSPS season with the 2021 PSPS season and shows the marked improvement in the frequency, scale, scope, and duration of 2022 PSPS events relative to the preceding year.[12]

[11] In some cases, other factors such as particularly high fire potential, can lower the thresholds for specific events.
[12] Weather and fuel conditions are large drivers of the magnitude of PSPS impacts experienced each year. 2022 was a relatively mild fire weather year, compared to the preceding two years, due to the combination of a persistent monsoon across mountain areas, the remnants of Hurricane Kay in September, and a strong winter

Table 2
2021 PSPS Season vs 2022 PSPS Season[13]

Frequency Circuit De energization	**Scope/Scale[14]** Customer Outages	**Duration** Customer Minutes of Interruption (CMI)
↓89%	**↓81%**	**↓94%**

SCE also performed a backcasting analysis comparing actual 2022 PSPS outcomes against 2022 weather and fuels modeled with previous years protocols (Table 3), which helps evaluate the effectiveness of SCE's PSPS mitigation activities described above. In other words, SCE sought to model what the 2022 season could have looked like if no grid hardening measures or risk modeling changes had been undertaken to date. While it is difficult to recreate all the complex decision-making factors to determine how much longer and more widespread an outage could have been, SCE was able to attribute savings to mitigations (e.g., raised thresholds from covered conductor installation, scope changes from switching protocols and exceptions) and model likely PSPS reductions.

This analysis shows that, had SCE not been proactive in our mitigations, the 2022 PSPS season could have necessitated de-energization of roughly 49,000 customers on 60 circuits, for a total of approximately 47 million minutes of interruption (compared to actual de-energization of approximately 16,000 customers on 13 circuits, for a total of 7 million minutes of interruption). **Table 3** below shows these reductions as a percentage of actual outcomes.

Table 3
2022 PSPS Actual vs. Backcast

Frequency Circuit De energizations	**Scope/Scale** Customer Outages	**Duration** Customer Minutes of Interruption (CMI)
↓82%	↓76%	↓88%

e) A summary of all defects identified by the WSD within the annual compliance period, the corrective actions taken and the completion and/or estimated completion date.

In compliance year 2022, SCE did not receive any "defects" reports from Energy Safety's prior process.

storm in early November. These events brought appreciable amounts of precipitation to much of the region, which helped to mitigate fire activity. In addition, the lack of Santa Ana winds early in the season resulted in fewer PSPS activations than what we anticipate going forward.

[13] SCE's 2021 PSPS season does not include the January 2021 event as those de-energizations were driven by 2020 weather and fuel patterns and were managed with 2020 capabilities and tools.

[14] SCE is unclear what the difference is between scope and scale of a PSPS event, and therefore groups those terms together, defined as the number of unique customer outages per PSPS de-energization event.

Table 4 and **Table 5** summarize the Notices of Violation and Notices of Defect that were issued by Energy Safety under their new notice process. The tables reflect what was issued in the notices and not the outcome of SCE's work with Energy Safety to make final determinations as to their status as "violations" and "defects". In some cases, SCE did not agree with certain violations or defects and thus maintained SCE's rights by requesting written hearings. Details regarding SCE's responses are available on Energy Safety's website. These notices were from inspections Energy Safety conducted in compliance year 2022 related to SCE's 2021 Wildfire Mitigation Plan.

Table 4

Summary of Notices of Defect Identified by Energy Safety in 2022 related to the 2021 Wildfire Mitigation Plan

NOD	FINDING #	DATE OF INSPECTION	ENERGY SAFETY DESCRIPTION OF DEFECT (NO. OF STRUCTURES)	RISK LEVEL	DEADLINE TO ADDRESS	CORRECTIVE ACTION TAKEN/ SCE COMPLETION STATUS
NOD_SCE_ATJ _20220622-01	1	6/22/22	Span guy wire loose. (1)	Minor	7/22/23	Pending
NOD_SCE_ATJ _20220622-01	2	6/22/22	Two loose down guys, one loose guy span. (1)	Minor	7/22/23	Pending
NOD_SCE_ATJ _20220622-01	3	6/22/22	Buried Guy Anchor. (2)	Minor	7/22/23	Pending
NOD_SCE_GCA _ 20220412-01	1	4/12/22	Lateral tree branch within 4 feet of conductors. (1)	Moder ate	8/15/22	On 7/1/22 Vine was removed
NOD_SCE_GCA _ 20220412-01	2	4/12/22	Vegetation (vine) contacting guy wire above insulator. (1)	Minor	6/15/23	On 7/15/22 Vine was removed

NOD_SCE_GCA_ 20220412-01	3	4/12/22	Vegetation (vine) at crossarm and signs of wrapping around pole. (1)	Moderate	8/15/22	On 6/27/22 Vine was removed
NOD_SCE_ATJ_20220414-01	1	4/14/22	Upside down dead-end cover. (1)	Minor	7/22/23	On 10/24/22, SCE field personnel corrected the upside-down dead-end cover, and installed anti-rotational clips
NOD_SCE_ATJ_20220414-01	2	4/14/22	Failure to install anti-rotational clips on six dead-end covers. (1)	Minor	7/22/23	On 10/24/22, SCE field personnel corrected the upside-down dead-end cover, and installed anti-rotational clips
NOD_SCE_ATJ_20220406-01	1	4/6/22	Triangular wildlife Guard loose/detaching from crossarm. (1)	Minor	7/22/23	Pending
NOD_SCE_GCA_ 20220404-01	1	4/4/22	Danger tree observed with potential to strike conductor and/or pole nearby. (1)	Minor	6/15/23	On July 5, 2022, tree was removed

NOD_SCE_ATJ_20220414-01	1	4/14/22	Upside down dead-end cover. (1)	Minor	7/22/23	On 10/24/22, SCE field personnel corrected the upside-down dead-end cover, and installed anti-rotational clips on all dead-end covers. The attached photos were taken after the work was completed as SCE needed to have the crews retake the photos to show all of the covers.
NOD_SCE_ATJ_20220414-01	2	4/14/22	Failure to install anti-rotational clips on six dead-end covers. (1)	Minor	7/22/23	On 10/24/22, SCE field personnel corrected the upside-down dead-end cover, and installed anti-rotational clips on all dead-end covers. The attached photos were taken after the work was completed as SCE needed to have the crews retake the photos to show all of the covers

Table 5

Summary of Notices of Violation Identified by Energy Safety in 2022 related to the 2021 Wildfire Mitigation Plan

NOV	FINDING #	DATE OF INSPECTION	ENERGY SAFETY DESCRIPTION OF VIOLATION (NO. OF STRUCTURES)	RISK LEVEL	DEADLINE TO ADDRESS	CORRECTIVE ACTION TAKEN/ COMPLETION STATUS
NOV_SCE_MYU_20220224-01	1	2/24/22	Failure to install vibration dampers on a span. (2)	Minor	4/22/23	Hearing Requested
NOV_SCE_CAC7_20220224-01	1	2/24/22	Failure to install vibration dampers on a span. (2)	Minor	4/22/23	Hearing Requested
NOV_SCE_CAC7_20220224-01	2	2/24/22	Failure to install bolted wedge connector cover. (2)	Minor	4/22/23	Pending
NOV_ SCE ATJ_20220405-01	1	4/5/22	Failure to install vibration dampers on span (6)	Minor	7/22/23	Hearing Requested
NOV_ SCE ATJ_20220405-01	2	4/5/22	Bolted wedge connector cover fell off. Dead end transition from conductor to jumper cover split open. (2)	Minor	7/22/23	Pending

NOV_SCE ATJ_20220420-01	1	4/20/22	Fuse cover fell off. (1)	Minor	7/22/23	On 8/1/22, SCE field personnel reinstalled fuse cover
NOV_SCE ATJ_20220420-01	2	4/20/22	Failure to install anti-rotational clip on a dead-end cover. (1)	Minor	7/22/23	On 8/1/22, SCE field personnel installed anti-rotational clips on dead end cover
NOV_SCE ATJ_20220420-01	3	4/20/22	Failure to connect jumper tail to tail. Failure to connect jumper in direction conductor is intended to be routed (connected side by side, not tail to tail) (2)	Minor	7/22/23	On 8/1/22, SCE field personnel reinstalled and realigned connected jumpers
NOV_SCE ATJ_20220406-01	1	4/6/22	Failure to install vibration dampers on a span. (5)	Minor	7/22/23	Hearing Requested
NOV_SCE ATJ_20220406-01	2	4/6/22	Wildlife terminator/poth ead covers found on ground. (1)	Minor	7/22/23	Pending
NOV_SCE ATJ_20220406-01	3	4/6/22	Failure to install anti-rotational	Minor	7/22/23	Pending

			clip-on dead-end cover. (2)			
NOV_SCE_MYU_20220406-01	1	4/6/22	Failure to install vibration dampers. (4)	Minor	7/28/23	Hearing Requested
NOV_SCE_MYU_20220406-01	3	4/6/22	No anti-rotational device installed at dead end cover (1)	Minor	7/28/23	Pending
NOV_SCE ATJ_20220411-01	1	4/11/22	Data submitted by SCE indicates covered conductor work terminates one structure over. Covered conductor terminates at this structure. (1)	Minor	7/22/23	On 3/14/22 SCE Submitted Data to OEIS validating that the 2021 covered conductor (CC) point data submitted to Energy Safety does not include this structure

III. CONCLUSION

SCE appreciates the opportunity to submit its 2022 WMP Annual Report on Compliance and looks forward to working with the Independent Evaluator and continued collaboration with Energy Safety in the review of SCE's 2022 WMP activities.

ATTACHMENT A

SCE Q4 2022 WMP Progress Update (Updated)

SCE's 2020-2022 Wildfire Mitigation Plan (WMP) Progress Update – Q4 2022 (Updated)

(All data is as of ~~December 31, 2022~~ March 15, 2023)[1] [2]

[1] Source: All data is as of ~~December 31, 2022~~ March 15, 2023 (+/- 5 business days). Reported numbers are subject to revision upon data validation.

[2] SCE is completing its data validation of 2022 WMP activities and as a result, some figures reported in the Notification have been slightly revised (redlines reflect changes known as of March 15, 2023). These revisions do not impact the status of activities and have been incorporated and noted in this updated WMP Q4 2022 Progress Update to accompany SCE's 2022 WMP Annual Report on Compliance .

WMP Activities Summary[3]

Inactive | Under Review | Complete[5] | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Grid Design and System Hardening

- SH-1 Covered Conductor
- SH-2 Undergrounding Overhead Conductor
- SH-4 Branch Line Protection Strategy
- SH-5 Installation of System Automation Equipment - RAR / RCS
- SH-6 Circuit Breaker Relay Hardware for Fast Curve
- SH-7 PSPS-Driven Grid Hardening Work
- SH-8 Transmission Open Phase Detection
- SH-10 Tree Attachment Remediation
- SH-11 Legacy Facilities
- SH-12 Microgrid Assessment
- SH-13 C-Hooks
- SH-14 Long Span Initiative
- SH-15 Vertical Switches
- SH-16 Vibration Damper Retrofit
- SH-17 Rapid Earth Fault Current Limiter (REFCL)

Asset Management and Inspections

- IN-1.1 Distribution High Fire Risk Informed Inspections in HFRA
- IN-1.2 Transmission High Fire Risk Informed Inspections in HFRA
- IN-9 Transmission Conductor and Splice Assessment
- IN-3 Infrared Inspection of Energized Overhead Distribution Facilities and Equipment
- IN-4 Infrared Inspection, Corona Scanning, and High-Definition Imagery of Energized Overhead Transmission facilities and Equipment
- IN-5 Generation High Fire Risk Informed Inspections in HFRA
- IN-8 Inspection Work Management Tools

Situational Awareness

- SA-1 Weather Stations
- SA-3 Weather and Fuels Modeling
- SA-8 Fire Science Enhancements
- SA-9 Distribution Fault Anticipation (DFA)
- SA-10 High-Definition (HD) Cameras

Data Governance

- DG-1 Wildfire Safety Data Mart and Data Management (WiSDM / Ezy)

Vegetation Management and Inspections

- VM-1 Hazard Tree Management Program
- VM-2 Expanded Pole Brushing
- VM-3 Expanded Clearances for Legacy Facilities
- VM-4 Dead and Dying Tree Removal
- VM-6 VM Work Mgmt. Tool
- 10 Additional VM Targets[4]

PSPS

- PSPS-2 Customer Care Programs

Emergency Planning and Preparedness
Stakeholder Cooperation and Community Engagement

- DEP-1.2 Customer Education and Engagement - Community Meetings
- DEP-1.3 Customer Education and Engagement, Marketing Campaign
- DEP-4 Customer Research and Education
- DEP-2 SCE Emergency Response Training
- DEP-5 Aerial Suppression

[3] Source: All data is as of ~~December 31, 2022~~ March 15, 2023 (+/- 5 business days). Reported numbers are subject to revision upon data validation.

[4] These VM targets are in response to an Energy Safety requirement to create 2022 targets for additional VM initiatives that can be measured quantitatively. As a result, they are tracked as additional VM targets but are not considered formal WMP activities.

[5] Color used for this report is slightly modified from Energy Safety's recommendation to better support processing for ADA regulation requirements.

WMP Activities Summary[6]

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Additional Vegetation Management Targets[7]

Detailed inspections and management practices for vegetation clearances around Distribution electrical lines, and equipment	Detailed inspections and management practices for vegetation clearances around Transmission electrical lines, and equipment	Emergency response vegetation management due to red flag warning or other urgent climate conditions	Recruiting and training of vegetation management personnel	Substation Inspections
Vegetation Inspections Audited Annually	Poles brushed per PRC 4292	Distribution LiDAR Vegetation Inspections	Transmission LiDAR Vegetation Inspections	Substation vegetation inspections

[6] Source: All data is as of ~~December 31, 2022~~ March 15, 2023 (+/- 5 business days). Reported numbers are subject to revision upon data validation.
[7] These 10 VM targets are in response to an Energy Safety requirement to create 2022 targets for additional VM initiatives that can be measured quantitatively. As a result, they are tracked as additional VM targets but are not considered formal WMP activities. The targets were filed in the 2022 WMP Update on February 18, 2022.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Situational Awareness Activities

Weather Stations

107%
Installed

Weather Stations (SA-1)

Section 7.3.2 Page 265[8]
Program Target: Install 150 weather stations in SCE's HFRA. SCE will strive to install up to 175 weather stations in SCE's HFRA, subject to resource and execution constraints.

Status Update: SCE met target in Q4 by completing installation of 160 weather stations.

Weather and Fuels Modeling

141%
Equipped with machine learning

Weather and Fuels Modeling (SA-3)

Section 7.3.2 Page 283
Program Target: Equip 400 weather station locations with machine learning capabilities. SCE will strive to equip up to 500 weather station locations with machine learning capabilities, subject to resource and execution constraints.

Status Update: SCE met target in Q3 by equipping 564 weather station locations with machine learning capabilities.

Fire Science

Fire Science (SA-8)

Section 7.3.2 Page 275
Program Target: Calibrate FPI 2.0 and evaluate its performance over the 2022 fire season. Improve fire spread modeling applications (i.e., FireSim and FireCast) to include 1) fire suppression and 2) buildings destroyed by fire.

Status Update: SCE met target by updating the FPI 2.0 methodology to include calibration and verification statistics. Building Loss Factor and a metric measuring suppression effectiveness have also been integrated into FireCast and is being evaluated for integration of fire spread modeling into the PSPS decision-making process.

Distribution Fault Anticipation (DFA)

Distribution Fault Anticipation (DFA) (SA-9)

Section 7.3.2 Page 269
Program Target: SCE will evaluate the performance of installed fault anticipation technology and develop recommendations for future use by year-end 2022.

Status Update: SCE met target in Q3 by completing evaluation of the performance of installed fault anticipation technology and developing recommendations for future use. Overall, there were 1,121 total events reviewed internally; and 18 events with the vendor. Recommended improvements for future use have been summarized in a final report.

High Definition (HD) Cameras

160%
Installed

High Definition (HD) Cameras (SA-10)

Section 7.3.2 Page 272
Program Target: Install 10 HD Cameras. SCE will strive to install up to 20 HD Cameras, subject to resource and execution restraints.

Status Update: SCE met target in Q4 by completing installation of 16 HD cameras.

[8] Denotes section and page number within SCE 2022 Wildfire Mitigation Plan Update.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Grid Design and System Hardening

Covered Conductor

~~128%~~
127%
Installed

Covered Conductor (SH-1)

Section 7.3.3 Page 294
Program Target: Install 1,100 circuit miles of covered conductor in SCE's HFRA. SCE will strive to install up to as many as 1,250 circuit miles of covered conductor in SCE's HFRA, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q4 by completing installation of ~~~1,412~~ ~1,399[9] circuit miles of covered conductor in HFRA.

Undergrounding Overhead Conductor

~~128%~~
136%
Installed

Undergrounding Overhead Conductor (SH-2)

Section 7.3.3 Page 334
Program Target: Install 11 circuit miles of targeted undergrounding in SCE's HFRA.SCE will strive to install up to 13 miles of targeted undergrounding in SCE's HFRA, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q4 by completing installation of ~~~14~~ ~15[10] underground miles in HFRA.

Branch Line Protection Strategy

105%
Installed

Branch Line Protection Strategy (SH-4)

Section 7.3.3. Page 308
Program Target: Install or replace fusing at 350 fuse locations that serve HFRA circuitry. SCE will strive to install or replace fusing at up to 483 locations that serve HFRA circuitry, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q3 by completing installation of 369 fuses.

Remote Controlled Automatic Reclosers Settings Update

100%
Installed

Remote Controlled Automatic Reclosers Settings Update (SH-5)

Section 7.3.3 Page 313
Program Target: Install 15 sectionalizing devices such as RARs/RCSs driven by the results of evaluations / assessments conducted under SH-6 and SH-7. SCE will strive to install up to 31 sectionalizing devices such as RARs/RCSs driven by the results of evaluations / assessments conducted under SH-6 and SH-7, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q4 by completing installation of 15 RAR/RCS sectionalizing devices.

Circuit Breaker Relay Hardware for Fast Curve

~~113%~~
114%
Installed

Circuit Breaker Relay Hardware for Fast Curve (SH-6)

Section 7.3.3 Page 292
Program Target: Replace/upgrade 104 relay units in SCE's HFRA.SCE will strive to replace/upgrade up to 125 relay units in SCE's HFRA, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q4 by replacing/upgrading ~~117~~ 119[11] relay units in HFRA.

PSPS-Driven Grid Hardening

149%
Evaluations

PSPS-Driven Grid Hardening Work (SH-7)

Section 7.3.3 Page 310
Program Target: Evaluate approximately 70 highly impacted circuits including 2021 PSPS events to determine additional deployment of PSPS mitigations.

Status Update: SCE met target in Q1 with 104 circuits evaluated against the 70 target.

[9] Following validation of records this activity decreased from ~1412 to ~1399 circuit miles of covered conductor in HFRA from what was published in SCE's Q4 2022 QNL on 2.01.2023
[10] Following validation of records this activity increased from ~14 to ~15 underground miles in HFRA from what was published in SCE's Q4 2022 QNL on 2.01.2023
[11] Following validation of records this activity increased from 117 to 119 relay units in HFRA from what was published in SCE's Q4 2022 QNL on 2.01.2023

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Grid Design and System Hardening

Transmission Open Phase Detection

220%
Installed

Transmission Open Phase Detection (SH-8)

Section 7.3.3 Page 337

Program Target: Deploy open phase logic on five transmission lines. SCE will strive to deploy open phase logic on up to 11 transmission lines, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q3 by deploying open phase logic on 6 transmission lines. In Q4, open phase logic was deployed on an additional 5 transmission lines for a total of 11 transmission lines deployed with open phase logic.

Tree Attachment Remediation

193%
Remediations

Tree Attachment Remediation (SH-10)

Section 7.3.3 Page 301

Program Target: Remediate 500 tree attachments in SCE's HFRA. SCE will strive to complete up to 700 tree attachment remediations in SCE's HFRA, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q3 by completing remediation of 703 tree attachments in HFRA. In Q4 completed an additional 261 remediations for a total of 964 tree attachment remediations in HFRA

Legacy Facilities

Legacy Facilities (SH-11)

Section 7.3.3 Page 340

Program Target:

- **Grounding Studies/Lightning Arrestor Assessments and Remediations:** Based on 2021 assessments perform four remediation projects at legacy facility sites. Additionally, complete 13 assessments.
- **Low Voltage Site Hardening:** Based on 2021 assessment, perform one grid hardening project at a legacy facility site.
- **Hydro Control Circuits:** Based on 2021 assessments, perform grid hardening on three control circuits at three legacy facility sites.

Status Update:

- **Grounding Studies/Lightning Arrestor:** SCE met target in Q4 by completing 4 remediation projects and 13 assessments.
- **Low Voltage Site Hardening:** SCE met target in Q4 by performing one grid hardening project at a legacy facility.
- **Hydro Control Circuits:** Work at 2 of 3 control circuits completed. Remaining control circuit project will be completed in Q3 2023. Please see appendix slide for further details.

Microgrid Assessment

Microgrid Assessment (SH-12)

Section 7.3.3 Page 311

Program Target: SCE will actively attempt to obtain approval of easement with the landowner of the microgrid site, and if approval is received, SCE will move forward with microgrid project. If an approval is not received by June 30, 2022 or rejected, SCE will start to pursue other microgrid opportunities.

Status Update: SCE met target in Q4 by completing assessments on other potential microgrid sites after unsuccessfully obtaining an easement agreement with the landowner of the proposed microgrid site. No new sites were identified in the subsequent assessment. SCE will continue to re-evaluate its approach, re-run its assessment, and explore potential cooperative opportunities for microgrids.

C-Hooks

100%
Installed

C-Hooks (SH-13)

Section 7.3.3 Page 331

Program Target: SCE will replace C-Hooks on 10 structures in SCE's HFRA and strive to replace up to 21 C-Hooks, subject to execution risks such as environmental clearance.

Status Update: SCE met target in Q4 by completing replacement of 10 C-Hooks in HFRA.

Long Span Initiative

121%
Remediations

Long Span Initiative (SH-14)

Section 7.3.3 Page 321

Program Target: Remediate 1,400 spans in SCE's HFRA. SCE will strive to remediate up to 1,800 spans in SCE's HFRA, subject to resource constraints and other execution risks.

Status Update: SCE met target in Q2 with 1,589 remediations. Completed an additional 105 remediations through Q4 for a total of 1,694.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Grid Design and System Hardening

Vertical Switches

107%
Installed

Vertical Switches (SH-15)

Section 7.3.3 Page 341
Program Target: Install 15 vertical switches in SCE's HFRA. SCE will strive to install 25 vertical switches in SCE's HFRA.

Status Update: SCE met target in Q4 by completing installation of 16 vertical switches in HFRA.

Vibration Damper Retrofit

~~**127%**~~
125%
Installed

Vibration Damper Retrofit (SH-16)

Section 7.3.3 Page 303
Program Target: Retrofit vibration dampers on 100 structures where covered conductor is already installed in SCE's HFRA. SCE will strive to retrofit vibration dampers on up to 115 structures where covered conductor is already installed in SCE's HFRA.

Status Update: SCE met target in Q4 by retrofitting ~~127~~ 125[12] vibration dampers where covered conductor is already installed in HFRA.

Rapid Earth Fault Current Limiters (REFCL)

Rapid Earth Fault Current Limiters (REFCL) (SH-17)

Section 7.3.3 Page 323
Program Target: SCE will produce a report summarizing performance and lessons learned from previous REFCL installations. SCE will also initiate engineering and material purchase for the ground fault neutralizers (GFNs) to be constructed in 2023 at Acton and Phelan Substations.

Status Update: SCE met target in Q4 to produce report summarizing performance from previous REFCL installations and initiated engineering and material purchase for the ground fault neutralizers (GFNs) to be constructed in 2023 at Acton and Phelan substations.

[12] Following validation of records this activity decreased from 127 to 125 vibration dampers retrofit from what was published in SCE's Q4 2022 QNL on 2.01.2023

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Asset Management and Inspections

YTD Status

Ground

~~108%~~ 106%

Aerial

105%

Distribution HFRI Ground / Aerial Inspections and Remediations (IN-1.1)

Section 7.3.4 Page 362

Program Target: Inspect 150,000 structures in HFRA via both ground and aerial inspections. Subject to resource constraints and other factors, SCE will strive to inspect up to 180,000 structures in HFRA via both ground and aerial inspections. This target includes HFRI, compliance due structures in HFRA and emergent risks identified during the fire season.

Status Update: SCE met target by completing ~~162,721~~ 159,679[13] ground and 157,144 aerial inspections in HFRA.

YTD Status

Ground

108%

Aerial

107%

Transmission HFRI Ground / Aerial Inspections and Remediations (IN-1.2)

Section 7.3.4 Page 375

Program Target: Inspect 16,000 structures in HFRA via both ground and aerial inspections. Subject to resource constraints and other factors, SCE will strive to inspect up to 19,000 structures in HFRA via both ground and aerial inspections. This target includes HFRI, compliance due structures in HFRA and emergent risks identified during the fire season.

Status Update: SCE met target by completing 17,225 ground and 17,133 aerial inspections in HFRA.

Distribution Infrared Inspections

100%

Targeted Circuits Inspected

Infrared Inspection of energized overhead distribution facilities and equipment (IN-3)

Section 7.3.4 Page 352

Program Target: Inspect 4,408 distribution overhead circuit miles in HFRA.

Status Update: SCE met target miles in Q2 after remaining flights were completed the first week of June. ~4,408 miles of inspections were completed in 2022 against the 2-year, ~8,816 mile inspection target that was set in 2021; ~4,409 miles of inspections completed in 2021. Approximately 50% of the remaining HFRA distribution miles were inspected in 2021 with the remainder inspected in 2022.

Transmission Infrared Inspections

108%

Targeted Circuits Inspected

Infrared Inspection, Corona Scanning and High-Definition (HD) Imagery of Transmission facilities and equipment (IN-4)

Section 7.3.4 Page 354

Program Target: Inspect 1,000 transmission circuit miles on HFRA circuits.

Status Update: SCE met target in Q3 by completing 1,075 inspections on transmission circuit miles in HFRA.

Generation Inspections

117%

Inspected

Generation Inspections and Remediations (IN-5)

Section 7.3.4 Page 373

Program Target: Inspect 190 generation-related assets in HFRA.

Status Update: SCE met target in Q4 by completing 222 Generation inspections in HFRA.

Inspection and Maintenance Tools

Inspection and Maintenance Tools (IN-8)

Section 7.3.4 Page 347

Program Target:

- **IN-8.a:** Design capability for the legacy Distribution Ground inspection application in 2022 to transition to a single digital inspection platform in a future year.
- **IN-8.b:** In support of remediation efforts, conduct assessment to identify enhancements for Field Crew application, and evaluate applicability of enhancements by year-end 2022.

Status Update:

- **IN-8.a:** SCE met target in Q3 to design capability for the legacy Distribution Ground Inspection application. Completed identification and feasibility assessment of enhancement capabilities, and migration to a single digital inspection platform is tentatively scheduled for 2024.
- **IN-8.b:** SCE met target in Q4 with the assessment, identification, and evaluation of applicability of enhancements for Field Crew application. Field Crew application enhancements were rolled out to ~60 Distribution contract users, resulting in the real time closure of notification issues in the field.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Asset Management and Inspections

Transmission Conductor & Splice Assessment

Transmission Conductor & Splice Assessment (IN-9)

Section 7.3.3 Page 356

Program Target:

- **IN-9.a:** Will inspect 75 spans[14] with LineVue and strive to inspect up to 150 spans with LineVue
- **IN-9.b:** Inspect 50 splices[15] with X-Ray and inspect up to 70 splices with X-Ray
- **IN-9.c:** Obtain five Conductor Samples[16] and obtain up to 15 Conductor Samples, subject to execution constraints

Status Update:

- **IN-9.a:** SCE met target in Q4 by completing inspections on 79 spans with LineVue.
- **IN-9.b:** SCE met target in Q2 by inspecting 63 splices with X-Ray.
- **IN-9.c:** SCE met target in Q4 by inspecting 6 Conductor Samples.

[14] Span defined as 1 phase from one structure to another.
[15] Splice defined as individual splice.
[16] Conductor sample defined as 15 ft segment of conductor.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Vegetation Management and Inspections

HTMP

142%
Circuits Assessed

Hazard Tree Management Program (VM-1)

Section 7.3.5 Page 425
Program Target: Inspect 330 circuits and assess any trees with strike potential along those circuits.

Status Update: SCE met target in Q4 by completing inspection and assessments of 467 circuits.

Dead and Dying Tree Removal

103%
Circuits Inspected

Dead and Dying Tree Removal (VM-4)

Section 7.3.5 Page 427
Program Target: Inspect 900 unique circuits and prescribe mitigation for dead and dying trees with strike potential along those circuits.

Status Update: SCE met target in Q4 by completing inspection of 926 circuits.

Expanded Pole Brushing

134%
Poles Cleared

Expanded Pole Brushing (VM-2)

Section 7.3.5 Page 404
Program Target SCE will inspect and clear (where clearance is needed) 78,700 poles in HFRA, with the exception of poles for which there are customer access or environmental constraints. SCE will strive to inspect and clear (where clearance is needed) up to 170,000 distribution poles in HFRA. These poles are in addition to poles subject to PRC 4292.

Status Update: SCE met target in Q4 by inspecting and clearing (where clearance was needed and access possible) 105,377 poles in HFRA.

VM Work Management Tool (Arbora)

VM Work Management Tool (Arbora) (VM-6)

Section 7.3.5 Page 430
Program Target SCE will implement the following programs within the VM Work Management Tool, Arbora: (1) Hazardous Tree Management Program (HTMP) (including: Dead & Dying Tree Removal and Hazard Tree Mitigation) and (2) Routine Line Clearing.

Status Update: SCE met target in Q4 by implementing the Vegetation Management work management tool for the Hazard Tree Program (HTP), which includes HTMP and Dead and Dying Tree removal, and for Routine Line Clearing. As with other large system implementations, SCE will continue to monitor performance, and as applicable, run legacy systems in parallel.

Expanded Clearances for Legacy Facilities

100%
Expanded Clearances Performed

Expanded Clearances for Legacy Facilities (VM-3)

Section 7.3.5 Page 407
Program Target: Perform expanded clearances at 32 legacy facility locations.

Status Update: SCE met target in Q4 by completing expanded clearance at 32 sites.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Additional Vegetation Management Targets

Detailed Inspections: Distribution

109%
Inspections

Detailed inspections and management practices for vegetation clearances around Distribution electrical lines, and equipment:
Section 7.3.5 Page 396
Program Target: Inspect ~600,000 trees adjacent to Dist. lines, based on current unique tree inventory count

Status Update: SCE met target in Q4 by completing inspection of 656,691 trees adjacent to Distribution lines, based on current unique tree inventory count.

Detailed Inspections: Transmission

104%
Inspections

Detailed inspections and management practices for vegetation clearances around Transmission electrical lines, and equipment:
Section 7.3.5
Page 400
Program Target: Inspect ~100,000 trees adjacent to Trans. lines, based on current unique tree inventory count. In Q3, SCE updated year-end target to reflect 71,286 unique trees in inventory because the unique tree inventory was reduced due to wildfire from ~100,000 to 71,286.

Status Update: SCE met target in Q4 by completing inspection of 74,025 trees adjacent to Trans. lines, based on current unique tree inventory count.

Vegetation Emergency Response

104%
Inspections

Emergency response vegetation management due to red flag warning or other urgent climate conditions:
Section 7.3.5 Page 400
Program Target: Inspect and clear (where clearance needed and access possible) ~26,400 poles in identified Areas of Concern (AOC).

Status Update: SCE met target in Q4 by inspecting and clearing (where clearance needed and access possible) 27,518 poles.

Vegetation Recruiting and Training

175
Arborists

Recruiting and training of vegetation management personnel:
Section 7.3.5 Page 420
Program Target: Maintain current staffing levels of 95 ISA certified arborists performing work within SCE service territory.

Status Update: SCE met target in Q4 with current staffing level at 175 ISA certified arborists performing work within SCE service territory.

Substation Inspections

152%
Inspections

Substation Inspections:
Section 7.3.5 Page 428
Program Target: Inspect 169 substations, 5 times per year for (146) GO174 substations and (23) ISO & FERC substations, totaling 845 inspections.

Status Update: SCE met target in Q4 by completing 1283 inspections; 146 GO174 substations and 23 ISO & FERC substations, 169 substations were inspected 5 or more times.

Vegetation Inspections Audited Annually

186%
of in Scope Tree Inventory

Vegetation Inspections Audited Annually:
Section 7.3.5 Page 416
Program Target: Perform risk-based circuit mile Quality Control (QC) inspections on approximately 15% of SCE total tree inventory.

Status Update: SCE met target in Q4 by completing 468,857 QC inspections, or 28% of total tree inventory. While the WMP target was to review 15% or 252,000 trees, SCE continued to perform QC inspections beyond that point per internal quality control guidelines.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Additional Vegetation Management Targets

Poles brushed per PRC 4292:

131%
Inspections

Poles Brushed Per 4292:
Section 7.3.5 Page 407
Program Target: Inspect and clear 55,100 poles (where clearance needed and access possible) in state responsibility area with equipment identified by PRC 4292.

Status Update: SCE met target in Q4 by inspecting and clearing (where clearance needed and access possible) 72,328 poles.

Substation Vegetation Management

104%
Inspections

Substation Vegetation Management:
Section 7.3.5 Page 429
Program Target: Perform Vegetation Management substation inspections in Tier 2 & Tier 3, totaling 169 substations.

Status Update: SCE met target in Q3 by inspecting 175 substation inspections.

Distribution LiDAR Vegetation Inspections

241%
Inspections

Remote Sensing Inspections of Vegetation and Around Transmission Electric Lines and Equipment:
Section 7.3.5 Page 410
Program Target Inspect at least 500 HFRA circuit miles.

Status Update: SCE met target in Q3 by inspecting 1,207 circuit miles in HFRA. LiDAR resources were made available to different programs which enabled SCE to inspect AOC circuits via LiDAR.

Transmission LiDAR Vegetation Inspections

106%
Inspections

Remote Sensing Inspections of Vegetation and Around Transmission Electric Lines and Equipment:
Section 7.3.5 Page 412
Program Target: Inspect at least 1600 HFRA circuit miles.

Status Update: SCE met target in Q4 by inspecting 1,696 HFRA circuit miles.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Emergency Planning and Preparedness
Stakeholder Cooperation and Community Engagement

Community Meetings

111%
Safety meetings

Customer Education and Engagement – Community Meetings (DEP-1.2)

Section 7.3.10 Page 491
Program Target: SCE will host at least nine wildfire community safety meetings in targeted communities based on the impact of 2021 PSPS events and ongoing wildfire mitigation activities.

Status Update: SCE met target in Q2 by conducting 10 community safety meetings

Customer Research and Education

100%
Surveys Conducted

Customer Research and Education (DEP-4)

Section 7.3.10 Page 507
Program Target: SCE plans to conduct at least six PSPS-related surveys in 2022, including the PSPS Tracker survey, wildfire safety community meeting feedback survey, CRC/CCV feedback survey, In-Language Wildfire Mitigation Communications Effectiveness Surveys, PSPS Working Group and Advisory Board Surveys, and the Voice of Customer surveys.

Status Update: SCE met target in Q4 by conducting 6 PSPS related surveys, including PSPS Tracker Survey, Wildfire Safety Community Meeting Feedback Survey, CRC/CCV Feedback Survey, In-Language Wildfire Mitigation Communications Effectiveness Survey, PSPS Working Group and Advisory Board Survey, and the Voice of Customer Survey.

Marketing Campaign

57%
Awareness

Customer Education and Engagement – Marketing Campaign (DEP-1.3)

Section 7.3.10 Page 502
Program Target: PSPS Awareness target: 50%.

Status Update: SCE met target in Q4 with PSPS awareness at 57%.

Aerial Suppression

100%
MOUs signed

Aerial Suppression (DEP-5)

Section 7.3.10 Page 512
Program Target: Will enter into a Memorandum of Understanding (MOU) with local county fire departments to provide standby cost funding for up to five aerial suppression resources strategically placed around the SCE service area.

Status Update: SCE met target in Q2 by entering into three Memoranda of Understanding (MOUs) signed by SCE and each respective county, and by funding a total of five aerial suppression resources.

SCE Emergency Responder Training

IMT: 100%

UAS: 112%

SCE Emergency Responder Training (DEP-2)

Section 7.3.9 Page 477
Program Target:
IMT (Incident Management Team): Have all PSPS IMT and Task Force members fully trained and qualified or requalified by July 1, 2022
UAS (Unmanned Aircraft System): SCE plans to expand the program by technically qualifying 50 UAS Operators that have passed the FAA 107 exam.

Status Update:
IMT: SCE met target in Q2 by fully training and qualifying/requalifying 346 PSPS IMT and Task Force members.
UAS: SCE met target in Q3 by technically qualifying 56 UAS Operators.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

Data Governance

Wildfire Safety Data Mart and Data Management

Wildfire Safety Data Mart and Data Management (WiSDM / Ezy) (DG-1)

Section 7.3.7 Page 462

Program Target:

Ezy Data:

- Expand cloud Artificial Intelligence (AI) platform
- Enable LIDAR data storage capability

WiSDM:

- Complete wildfire data repository design
- Consolidate wildfire data storage onto wildfire data repository platform

Status Update: SCE met target in Q4

- Ezy Data:
  - 1) Activity scope was completed in Q2 following the deployment of two new Distribution defect detection models.
  - 2) Completed the solution design and analysis for Lidar data.
- WiSDM:
  - 1) Completed wildfire data repository design
  - 2) Successfully met in Q4 with the data mapping, ingestion, and verification of 70+ datasets into the WiSDM platform.

WMP Activities Summary

Inactive | Under Review | Complete | On-Track | Behind Plan, Likely to Meet Year-end Target | Behind Plan, At-Risk of Not Meeting Year-end Target

PSPS

Customer Care Programs

CCBB Enrollments: 136%

Rebates Issued: ~~105%~~ 104%

Customer Care Programs (PSPS-2)

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Program Target:

- 2a: Critical Care Backup Battery (CCBB): Enroll 2,750 customers in the CCBB program (35% of forecasted eligible population). Continue to identify new eligible customers each month to offer program.
- 2b: Portable Power Station Rebates and Portable Generator Rebates: SCE to issue 3,000 rebates and will strive to issue 4,000 rebates.

Status Update: SCE met target in Q4

- 2a - Critical Care Backup Battery (CCBB): Program has completed 3,733 customer enrollments and 3,466 deployments.
- 2b - Portable Power Station Rebates and Portable Generator Rebates: Program has issued ~~3,145~~ 3,129[17] customer rebates.

[17] Following validation of records this activity decreased from 3,145 to 3,129 customer rebates from what was published in SCE's Q4 2022 QNL on 2.01.2023

WMP Activity Narrative

Off-Track Narrative – SH-11C Legacy Facilities

YTD Status	Not Met
YE Outlook	Not Met

Activity Target

Legacy Facilities: Hydro Control Circuits
Based on 2021 assessments, perform grid hardening on three control circuits at three legacy facility sites

Key Takeaways

- **Legacy Facilities: Hydro Control Circuits** - This activity missed the 2022 target to perform grid hardening on control circuits at three legacy facility sites
- Of the three projects scoped, construction on two of the three projects were completed in 2022
- The remaining project is pending environmental permitting and is scheduled to complete in Q3 2023
- **Q1 2023 Update:** Project remains on track to complete in Q3 2023

Risks or Challenges

- **Legacy Facilities: Hydro Control Circuits:** The remaining project is delayed due to external environmental permitting

Actions to Improve Performance / Get Well Plan

- **Legacy Facilities: Hydro Control Circuits –** SCE submitted water permitting request to the water agency, California Department of Fish and Wildlife (CDFW) on 9/2; draft agreement under review by SCE. Feedback from CDFW expected in January 2023
- **Q1 2023 Update:** Initial draft permit was issued in December 2022 from California Department of Fish and Wildlife (CDFW) with survey stipulations. SCE responded by suggesting alternatives which is currently under review by CDFW for further feedback and approval

ATTACHMENT B

SCE 2022 WMP Cost Variance Explanation

Attachment B
SCE 2022 WMP Cost Variance Explanation

Mitigation	2022 WMP - Table 12 Initiative Activity (Narrative is based on Q3 2022 QDR)	2022 WMP Identifier	2022 WMP Initiative	2022 CAPEX Planned	2022 CAPEX Actuals	CAPEX $ Variance (Overrun)/ Underrun	CAPEX % Variance	2022 OPEX Planned	2022 OPEX Actuals	OPEX $ Variance (Overrun)/ Underrun	OPEX % Variance	Variance Comments >20%, AND > $10M, AND all Underrun Costs
Alternative Technologies	Alternative Technology Pilot Programs	7.1.E	7.1.E	$ 6,985	$ 2,243	$ 4,742	68%	$ -	$ 61	$ (61)	0%	Capital: Distribution Open Phase Detection (DOPD) and High-Impedance (Hi-Z) Relays were deployed at a lower cost than what was forecasted because SCE later determined that some work--such as voltage sensor and pole replacements, or extensive infrastructure upgrades--would not be needed. For Early Fault Detection (EFD), SCE reduced the installation forecast from 150 to 50 units in 2022 due to material procurement delays, with the expectation to complete the remaining installation of 100 units in 2023. SCE completed installation of 44 units on distribution and 2 units on transmission in 2022.
Data Governance	Centralized repository for data	DG-1	7.3.7.1	$ 16,487	$ 14,224	$ 2,263	14%	$ 4,132	$ 1,211	$ 2,921	71%	While spend was less than originally forecasted, SCE met its 2022 target for this activity. The cost underrun in 2022 is mostly related to the following: (1) PSPS Line Patrols Tech Support Tools (CAP): The dashboard for the Grid Management System (GMS) project was cancelled due to scope changes in the dependent projects. (2) Wildfire Safety Data Mgmt. (WiSDM) (CAP): SCE saved on costs through contract negotiation with the third party vendor for the application and revisions of the application design. (3) Ezy (O&M): Delays for InspectForce and InspectApp programs resulted in lower costs than anticipated for use of the cloud platform, and lower utilization of resources and staff to support the required operations.
Emergency Preparedness	Preparedness and planning for service restoration	7.3.9.5	7.3.9.5	$ -	$ -	$ -	0%	$ 7,337	$ 1,379	$ 5,957	81%	This activity is related to distribution and transmission line patrols. Since SCE experienced fewer PSPS events during the year, this translated to fewer circuits in-scope for PSPS de-energization, which also meant fewer field patrols, live-field operations, and restoration patrols.
Emergency Preparedness	Adequate and trained workforce for service restoration	DEP-2	7.3.9.1	$ -	$ -	$ -	0%	$ 1,777	$ 299	$ 1,478	83%	SCE was able to meet the 2022 target for this activity. Cost underrun is related to employee charging practices for recording PSPS training time and expenses for skilled path and training programs. SCE is reviewing the work order charging practices to help ensure that going forward, all field workers who receive training will charge their time and expenses to the correct accounting structure.
Grid Operations and Protocols	Protocols for PSPS re-energization	7.3.6.5	7.3.6.5	$ -	$ -	$ -	0%	$ 709	$ 386	$ 323	46%	This activity is related to weather visualization tool. The forecast was based on historical attrition rates and an estimate to continue tool enhancements. Although there was an underrun related to this activity, SCE was able to continue enhancements of the tool and development efforts will continue into 2023.
Grid Operations and Protocols	PSPS Incident Management Team	7.3.6.6.1	7.3.6.6.1	$ 12,650	$ 13,210	$ (560)	4%	$ 14,953	$ 14,652	$ 300	2%	The O&M cost underrun in 2022 is related to the following: (1) PSPS Action Plan Centralized Data Platform (CDP): In March 2022, SCE reallocated costs between capital and O&M, which resulted in reduced recorded O&M spend for this activity. In addition, there was a delay in migrating data to a central repository which resulted in lowered O&M costs to support this activity. (2) PSPS Operations and (3) PSPS Response & Compliance: The forecast was based on historical attrition rates and an estimate to fulfill the PSPS operational activities. SCE was able to carry out all duties related to PSPS operations but at a cost lower than originally forecasted.
Grid Operations and Protocols	Customer Resiliency Equipment	7.3.6.6.2.1.2	7.3.6.6.2.1.2	$ -	$ -	$ -	0%	$ -	$ 0.1	$ (0.1)	0%	
Grid Operations and Protocols	Customer Resiliency Equipment	7.3.6.6.2.1.3	7.3.6.6.2.1.3	$ -	$ -	$ -	0%	$ 2,595	$ 926	$ 1,670	64%	The cost underrun in 2022 is due to reduced need/usage of customer side generators due to lower frequency of PSPS events during the year.
Grid Operations and Protocols	PSPS events and mitigation of PSPS impacts	PSPS-2	7.3.6.6	$ 7,560	$ 5,127	$ 2,433	32%	$ 28,131	$ 17,391	$ 10,740	38%	While SCE spent less than originally forecast, we were still able to meet our 2022 targets for this activity which were based on customer participation in backup battery and portable power/generator rebate programs. The cost underrun in 2022 is related to the following sub-activities which experienced lower costs than originally forecast: (1) PSPS Website Improvements (CAP): SCE achieved its planned website improvements and portal enhancements in 2022 at a lower cost due to contract refinements, including vendor negotiation and lower project support costs. (2) Resiliency Zones (O&M): SCE did not deploy as many generators as expected because of a lower number of PSPS events. (3) Community Resource Centers (CRC)(O&M): SCE experienced less PSPS activations which meant lower third party space rent and fewer customer resiliency kits distributed. (4) PSPS 211 Service (O&M): SCE received a carryover credit from the prior year for startup costs. (5) AFN Enhancements (O&M): SCE experienced delays due to vendor negotiations with ramp up and implementation of the AFN Self-ID Pilot and Accessible PSPS Notifications and Statewide Education and Outreach. (6) PSPS Website Improvement (O&M): SCE was able to implement website improvements while gaining cost savings from lower than anticipated data access fees for Verizon and Azure.
Inspection & Maintenance	Other discretionary inspection of transmission electric lines and	IN-1.2b	7.3.4.10	$ 798	$ -	$ 798	100%	$ 14,582	$ 8,853	$ 5,729	39%	O&M underrun is related to transmission aerial inspections. SCE performed ~17,133 aerial inspections on transmission structures in HFRA, meeting the WMP targets for inspecting between 16,000 and 19,000 structures in HFRA, via aerial inspections. The spend below forecast was driven by favorable pricing with vendors during contract re-negotiations and a reduction in AOC scope. Capital underrun is because costs were captured under the HFRI Repairs/ Replacements (IN-1.2a) during the second week of January 2023 but have since been corrected. For 2023 and beyond, SCE is revising its procedures so that AOC capital work order costs will be tracked and recorded to the correct activity.
Inspection & Maintenance	Infrared inspections of distribution electric lines and equipment	IN-3	7.3.4.4	$ -	$ -	$ -	0%	$ 427	$ 467	$ (40)	9%	
Inspection & Maintenance	Infrared inspections of transmission electric lines and equipment	IN-4	7.3.4.5	$ -	$ -	$ -	0%	$ 209	$ 76	$ 132	63%	SCE improved efficiencies in the inspection planning process, which resulted in lower costs than originally forecasted.
Inspection & Maintenance	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	IN-5	7.3.4.9.2	$ -	$ -	$ -	0%	$ 70	$ 153	$ (83)	119%	
Inspection & Maintenance	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	7.3.4	7.3.4	$ -	$ -	$ -	0%	$ -	$ 1	$ (1)	0%	
Inspection & Maintenance	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	IN-1.1a	7.3.4.9.1	$ 67,995	$ 81,530	$ (13,535)	20%	$ 45,271	$ 54,597	$ (9,326)	21%	Capital: 2022 overrun is due to: 1) Labor resource constraints which caused SCE to use additional vendor/contractors to perform the work, 2) Higher percentage of remediation work which settled to HFRA versus non-HFRA (the forecast assumed 70% of remediation work will be in HFRA while the remaining 30% of the work is in non-HFRA zones. In actuality, 90% of the remediation work occurred in HFRA zones with remaining 10% of the work in non-HFRA areas). 3) Costs associated with HFRA breakdown maintenance was higher due to escalation and inflation driven increases in repair materials. 4) Additional volume of completions related to LSI.

Mitigation	2022 WMP - Table 12 Initiative Activity (Narrative is based on Q3 2022 QDR)	2022 WMP Identifier	2022 WMP Initiative	2022 CAPEX Planned	2022 CAPEX Actuals	CAPEX $ Variance (Overrun)/ Underrun	CAPEX % Variance	2022 OPEX Planned	2022 OPEX Actuals	OPEX $ Variance (Overrun)/ Underrun	OPEX % Variance	Variance Comments >20%, AND > $10M, AND all Underrun Costs
Inspection & Maintenance	Other discretionary inspection of distribution electric lines and equipment, beyond inspections mandated by rules and regulations	IN-1.1b	7.3.4.9.1	$ -	$ -	$ -	0%	$ 33,429	$ 29,525	$ 3,903	12%	SCE performed ~159,700 ground inspections and ~157,200 aerial inspections on structures in HFRA, exceeding the WMP targets for inspecting between 150,000 and 180,000 structures in HFRA, via both ground and aerial inspections. The spend below forecast was driven by implementing a consolidated ground and aerial inspection (referred to as 360 Degree Inspection) for ~17,000 poles at a lower cost, deferring Secondary Conductor Inspections/Remediation Pilots to a future date, and a reduction in Areas of Concern scope.
Inspection & Maintenance	Other discretionary inspection of transmission electric lines and	IN-1.2a	7.3.4.10	$ 21,165	$ 19,542	$ 1,622	8%	$ 7,978	$ 6,247	$ 1,731	22%	Capital: The underrun is related to HFRI Repairs/Replacements for Transmission in which SCE had a lower number of completed remediations due to external constraints (e.g., permitting and environmental holds that caused delays with work). O&M: Although SCE spent less than originally forecast, SCE met its WMP targets for ground inspections of transmission structures in 2022. The cost underrun was primarily due to a lower cost per HFRI inspection than forecasted, which was a result of process efficiencies that had been developed as the work matured over time. With regard to AOC Inspections, SCE conducted ongoing assessment and risk modeling to determine the proper frequency and number of inspections required in HFRA. Based on this assessment, SCE determined that a lower number of transmission related AOC inspections were required. Lastly, with respect to AOC and HFRI repairs/replacements, a smaller amount of completed remediations was driven by a lower find rate and execution limitations due to external constraints (e.g., environmental and/or permitting holds).
Inspection & Maintenance	Improvement of inspections	IN-8	7.3.4.3	$ 9,504	$ 8,561	$ 943	10%	$ 3,955	$ 4,437	$ (483)	12%	Capital: This activity is related to Enhanced Overhead Inspections (EOI) PMO. While SCE achieved its targets for this activity (which involved distribution ground inspection application enhancements and identification of potential enhancements for the field crew application), the 2022 capital underrun is because several projects were placed on hold due to limited availability of required resources. The Failure Modes and Effects Analysis (FMEA) project was delayed and is now scheduled to begin in 2023. In addition, the Grid Hardening Notification Infrastructure project and the Post-Construction Inspection App project were both placed on hold. SCE will re-evaluate these efforts in 2023 to determine how to proceed and prioritize these projects.
Inspection & Maintenance	Transmission Conductor & Splice Assessment	IN-9	7.3.4.5.1	$ -	$ -	$ -	0%	$ 1,500	$ 1,792	$ (292)	19%	
Resource Allocation Methodology	Allocation methodology development and application	7.3.8.1	7.3.8.1	$ -	$ -	$ -	0%	$ 10,372	$ 9,980	$ 392	4%	The cost underrun in 2022 is related to the following: (1) Organization Change Management (OCM): The cost underrun in 2022 is primarily due to a lower than anticipated level of OCM support required for the initiatives deployed in 2022. (2) Environmental Remediation Liability Management: SCE pays an Environmental Remediation fee to the State Water Resources Control Board (SWRCB) for each mile of overhead conductor identified as high risk or high threat. The forecast for 2022 was estimated based on $43/mile. The cost underrun for 2022 was because SWRCB reduced the cost to $40/mile of overhead conductor.
Situational Awareness	Advanced weather monitoring and weather stations	SA-1	7.3.2.1	$ 3,021	$ 3,439	$ (418)	14%	$ 3,369	$ 3,048	$ 321	10%	SCE met its WMP target for this activity. The O&M cost underrun in 2022 was because SCE conducted fewer calibrations of weather stations than anticipated (and therefore required less vendor support) due to the lower-than-expected number of PSPS events.
Situational Awareness	Continuous monitoring sensors	SA-10	7.3.2.2.2	$ 128	$ 75	$ 52	41%	$ 3,906	$ 1,991	$ 1,915	49%	Capital: Although SCE was able to exceed its WMP target of installing 10 HD cameras in 2022 by installing 16 HD cameras, it was not able to achieve its strive-for target of 20 HD cameras. SCE also experienced lower cost of installation and materials required for the HD cameras installation. O&M: With regard to HD Camera leases, the cost underrun in 2022 is because: (a) Vendor support costs for the devices were lower than originally forecasted and (b) Software charges and monthly/recurring data services charges were lower than expected.
Situational Awareness	Personnel monitoring areas of electric lines and equipment in elevated fire risk conditions	SA-3	7.3.2.5	$ 703	$ 766	$ (63)	9%	$ 3,235	$ 5,356	$ (2,121)	66%	
Situational Awareness	Forecast of a fire risk index, fire potential index, or similar	SA-8	7.3.2.3.2	$ -	$ -	$ -	0%	$ 2,873	$ 2,134	$ 738	26%	SCE met its WMP target for this activity, but experienced cost underruns in 2022 related to contractual delays for Remote Sensing (satellite) and discounted subscription pricing related to fire spread modeling.
Situational Awareness	Continuous monitoring sensors	SA-9	7.3.2.2.1	$ 100	$ 2,149	$ (2,049)	2049%	$ 299	$ 513	$ (214)	72%	
Stakeholder Cooperation and Community Engagement	Community engagement	DEP-4	7.3.10.1.3	$ -	$ -	$ -	0%	$ 6,038	$ 1,880	$ 4,158	69%	This activity is related to customer research and education. SCE met the goal of completing 6 surveys in 2022 at a cost which was lower than originally anticipated. In addition, there was no spend on the Investor-Owned Utility (IOU) Community Engagement program, as SCE determined local campaigns were more effective to increase customer awareness of wildfire mitigation efforts.
Stakeholder Cooperation and Community Engagement	Community engagement	DEP-1.2	7.3.10.1.1	$ -	$ -	$ -	0%	$ 110	$ 6	$ 104	94%	SCE met its target for this initiative by hosting 10 community meetings in 2022. The cost underrun in 2022 is primarily due to SCE's ability to use virtual meetings for community townhall meetings which resulted in lower costs than holding in-person meetings (i.e., avoided facility rental, employee lodging and expenses, refreshment, etc.).
Stakeholder Cooperation and Community Engagement	Community engagement	DEP-1.3	7.3.10.1.2	$ -	$ -	$ -	0%	$ 11,443	$ 9,605	$ 1,838	16%	SCE met its target for this initiative. The cost underrun in 2022 was because SCE managed to print its annual customer PSPS newsletters at a lower cost than originally anticipated.
Stakeholder Cooperation and Community Engagement	Cooperation with suppression agencies	DEP-5	7.3.10.3	$ -	$ -	$ -	0%	$ 18,000	$ 18,200	$ (200)	1%	
System Hardening	Updates to grid topology to minimize risk of ignition in HFTDs	SH-15	7.3.3.17.3	$ 570	$ 642	$ (72)	13%	$ -	$ -	$ -	0%	
System Hardening	Covered conductor installation	SH-16	7.3.3.3.3	$ 108	$ 174	$ (66)	61%	$ -	$ -	$ -	0%	
System Hardening	Other corrective action	SH-17	7.3.3.12.2	$ 10,596	$ 12,036	$ (1,440)	14%	$ -	$ -	$ -	0%	
System Hardening	Undergrounding of electric lines and/or equipment	SH-2	7.3.3.16	$ 51,960	$ 29,704	$ 22,256	43%	$ -	$ -	$ -	0%	Although SCE met it's targets for undergrounding in 2022, the cost underrun in 2022 was a result of SCE's deployment of undergrounding in areas with low difficulty to design, install, and complete undergrounding.
System Hardening	Expulsion fuse replacement	SH-4	7.3.3.7	$ -	$ 56	$ (56)	0%	$ 1,402	$ 2	$ 1,400	100%	SCE met its WMP target for this initiative. The 2022 forecast was a placeholder to address standalone proactive replacement of CLFs for branch line protection. The cost to replace fuses are not recorded as a wildfire expense, as SCE is pursuing reimbursement from the vendor related to this work effort. CLF replacement costs will continue to be tracked through 2023.
System Hardening	Installation of system automation equipment	SH-5	7.3.3.9	$ 3,615	$ 2,294	$ 1,321	37%	$ -	$ -	$ -	0%	SCE met its WMP target for this initiative. The cost underrun in 2022 for installation of Remote Controlled Automatic Reclosures was primarily because SCE managed to use in-house resources for the work instead of 3rd party vendors/contractors.
System Hardening	Circuit breaker maintenance and installation to de-energize lines upon detecting a fault	SH-6	7.3.3.2	$ 10,193	$ 15,292	$ (5,099)	50%	$ -	$ 1,027	$ (1,027)	0%	
System Hardening	Updates to grid topology to minimize risk of ignition in HFTDs	SH-8	7.3.3.17.1	$ -	$ -	$ -	0%	$ 1,384	$ 1,193	$ 191	14%	SCE met its WMP target for this initiative. The cost underrun in 2022 was because the forecast anticipated using premium time (higher hourly rates) labor to complete the work; however, SCE was able to complete the field work using normal time labor only which resulted in lower spend for the year.
System Hardening	Covered conductor installation	SH-1	7.3.3.3.1	$ 719,110	$ 791,563	$ (72,453)	10%	$ 1,450	$ 1,411	$ 39	3%	SCE exceeded its WMP target for this imitative. The cost underrun for O&M is related to Covered Conductor (CC) remediation. SCE performed the necessary remediation activities in 2022 which included replacement of missing connector covers and fuse covers, correction of excessive line angles and over tensioned lines, and correction of partially exposed conductors, amongst other activities required to maintain CCs. The underrun is due to efficiencies gained through maturity of this program, as the field crews were able to execute the work with less job walks, reduced site visits, and less inspections than what was originally forecasted to complete the remediation work.
System Hardening	Covered conductor installation	SH-10	7.3.3.3.2	$ 16,552	$ 16,835	$ (283)	2%	$ -	$ -	$ -	0%	

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System Hardening	Updates to grid topology to minimize risk of ignition in HFTDs	SH-11	7.3.3.17.2	$ 1,925	$ 93	$ 1,832	95%	$ 660	$ 343	$ 317	48%	The cost underrun in 2022 is related to the following: (1) Legacy Facilities (Capital): SCE completed two out of the three reconductor projects in 2022. The two reconductor projects were completed at a lower unit cost than originally planned and recorded to a non-wildfire accounting. The third reconductor project experienced delays in 2022 which was largely driven by additional time needed for environmental reviews as well as resource availability (both T&D in-house and 3rd party vendors). The third reconductor project is anticipated to complete in 2023. (2) Legacy Facilities (O&M): The cost underrun in 2022 was primarily because SCE managed to use in-house resources for the work instead of 3rd party vendors/contractors. In addition, SCE was able to use existing materials and inventory, which resulted in SCE not having to purchase new materials and equipment to remediate the sites.
System Hardening	Grid topology improvements to mitigate or reduce PSPS events	SH-12	7.3.3.8.1	$ 5,393	$ -	$ 5,393	100%	$ -	$ -	$ -	0%	While SCE meets its WMP target for this initiative, it was not able to acquire access to the land for the installation of one out of three microgrid sites. SCE re-ran the screening tool with updated circuit and PSPS information to evaluate any changes in site assessment, but no viable candidates were found.
System Hardening	Transmission tower maintenance and replacement	SH-13	7.3.3.15	$ -	$ -	$ -	0%	$ 250	$ -	$ 250	100%	SCE met its 2022 target to proactively remove 10 C-Hooks in HFRA and finished SH-13. The cost underrun in 2022 was because the level of difficulty to maintain C-Hooks was lower than originally anticipated. SCE was able to complete this maintenance activity at a cost of approximately $59K for the year, however, these costs were recorded under HFRI Repairs/Replacements -T which is addressed as 7.3.4.10 (IN-1.2a). SCE maintains a question in its transmission inspection form regarding the identification of C-Hooks, just to ensure all C-Hooks in HFRA have been removed from SCE's system.
System Hardening	Other corrective action	SH-14	7.3.3.12	$ 4,931	$ 7,946	$ (3,015)	61%	$ 5,815	$ 3,976	$ 1,839	32%	O&M: SCE met its target for SH-14. Lower costs for O&M occurred as costs for some units were bundled or addressed through other remediation programs. LSI activity was carried out as planned but 332 units were recovered to other remediation programs such as HFRI and HFRA compliance because of bundling and treatment.
Vegetation Management	Remote sensing inspections of vegetation around transmission electric lines and equipment	7.3.5.8	7.3.5.8	$ -	$ -	$ -	0%	$ 2,048	$ 2,094	$ (46)	2%	
Vegetation Management	Patrol inspections of vegetation around transmission electric lines and equipment	7.3.5.12	7.3.5.12	$ -	$ -	$ -	0%	$ 962	$ 10	$ 952	99%	SCE generally defines the Areas of Concern (AOC) as wildfire season and after analyzing emergent risks. The forecast was developed before the AOC was defined for the year. The 2022 underrun was because SCE did not have as many transmission related patrol scope compared to what was originally expected.
Vegetation Management	Detailed inspections and management practices for vegetation clearances around distribution electrical lines and equipment.	7.3.5.2	7.3.5.2	$ -	$ -	$ -	0%	$ 14,828	$ 22,830	$ (8,002)	54%	
Vegetation Management	Vegetation management to achieve clearances around electric lines and equipment	7.3.5.20	7.3.5.20	$ -	$ -	$ -	0%	$ 238,421	$ 226,523	$ 11,898	5%	SCE conducted vegetation mitigation activities in the service territory and achieved compliance. The underrun is due to inventory which required less maintenance while still meeting clearing standards. The work was performed while adhering to maintained schedules and met all quality control expectations (i.e., SCE was on schedule and addressed all QC standards in the field).
Vegetation Management	Detailed inspections and management practices for vegetation clearances around transmission electrical lines and equipment	7.3.5.3	7.3.5.3	$ -	$ -	$ -	0%	$ 2,983	$ 410	$ 2,573	86%	
Vegetation Management	Additional efforts to manage community and environmental impacts	7.3.5.1	7.3.5.1	$ -	$ -	$ -	0%	$ 16,710	$ 29,940	$ (13,231)	79%	The cost overrun in 2022 was due to increase in volume of work related to surveys and monitoring. The increase was driven by work areas located in waterways which required specialized biologists to perform surveys and monitoring work in sensitive areas. In addition, SCE incurred a higher volume of priority P1s, trouble orders, and Vegetation Management add-ons (i.e., additional work identified in the field that was not prescribed by the pre-inspectors), many of which required environmental support to conduct the field work.
Vegetation Management	Patrol inspections of vegetation around distribution electric lines and equipment	7.3.5.11	7.3.5.11	$ -	$ -	$ -	0%	$ 18,283	$ 10,679	$ 7,604	42%	Seasonal Patrols are an inspection and mitigation program, where SCE performs a "find and fix" exercise. Cost underrun in 2022 is because SCE found less work in 2022 than what was originally forecasted.
Vegetation Management	Remote sensing inspections of vegetation around distribution electric lines and equipment.	7.3.5.7	7.3.5.7	$ -	$ -	$ -	0%	$ 3,182	$ 992	$ 2,190	69%	The cost underrun in 2022 was because SCE prioritized the most important/critical AOC circuits for LiDAR due to vendor capacity limitations, reducing the scope of work performed in 2022.
Vegetation Management	Removal and remediation of trees with strike potential to electric lines and equipment	VM-1	7.3.5.16.1	$ -	$ -	$ -	0%	$ 42,636	$ 21,368	$ 21,268	50%	SCE met its WMP target for this initiative. The cost underrun in 2022 was primarily related to the following: (1) HTMP Tree Removal: SCE found fewer than expected hazard tree conditions on the HFRA circuits. (2) HTMP Property Owner Incentives: The program allows property owners to receive utility-friendly trees as an incentive to support the mitigation of hazardous trees identified by SCE. The cost underrun in 2022 is due to lower than expected customer utilization of this program.
Vegetation Management	Fuel management (including all wood management) and management of "slash" from vegetation management activities	VM-2	7.3.5.5.1	$ -	$ -	$ -	0%	$ 20,589	$ 13,826	$ 6,763	33%	SCE met its WMP target for this initiative. The cost underrun in 2022 was primarily related to the following: (1) HTMP Tree Removal: SCE found fewer than expected hazard tree conditions on the HFRA circuits. (2) HTMP Property Owner Incentives: The program allows property owners to receive utility-friendly trees as an incentive to support the mitigation of hazardous trees identified by SCE. The cost underrun in 2022 is due to lower than expected customer utilization of this program.
Vegetation Management	Fuel management (including all wood management) and management of "slash" from vegetation management activities	VM-3	7.3.5.5.2	$ -	$ -	$ -	0%	$ 1,185	$ 520	$ 665	56%	SCE met its WMP target for this initiative. The cost underrun in 2022 was driven by the following factors: (a) For the clearance maintenance work for Kaweah, Kern, East End, and Bishop areas, the treatment was rescheduled for completion in 2023 to allow for additional time between the last treatment which was performed in 2021; (b) Efficiencies gained in the processes to complete the expanded clearance work in Catalina Island; SCE had originally forecasted for two months of work in Catalina which required a series of trips from mainland to the island (e.g., travel cost, lodging, meals, logistical transportation of equipment, etc.); however, SCE was able to complete the work within 1 month, resulting in lower costs.
Vegetation Management	Removal and remediation of trees with strike potential to electric lines and equipment	VM-4	7.3.5.16.2	$ -	$ -	$ -	0%	$ 31,258	$ 29,003	$ 2,255	7%	This activity is related to Dead & Dying Tree Removals. The cost underrun in 2022 is due to a lower number of dead and dying trees that needed to be removed than originally forecasted.
Vegetation Management	Quality assurance / quality control of vegetation management	VM-5	7.3.5.13	$ -	$ -	$ -	0%	$ 6,159	$ 5,523	$ 636	10%	SCE met its WMP target for this initiative. Cost underrun was due to fewer than anticipated QC inspections performed for Transmission.
Vegetation Management	Vegetation management enterprise system	VM-6	7.3.5.19	$ 6,800	$ 7,125	$ (325)	5%	$ 3,500	$ 3,286	$ 214	6%	The O&M underrun in 2022 was because SCE managed to complete the system requirements and meet IT enhancement objectives in fewer hours than originally forecasted.