| | | |
|---|---|---|
| Application No.: | A.25-12-002 | |
| Exhibit No.: | SCE-01 | |
| Witnesses: | A. Watson | L. Blackwell |
| | A. Varvis | J. Minnicucci |
| | A. Swisher | N. Song |
| | B. Chen | R. Fugere |
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| | C. Chambers | T. Brady |



SOUTHERN CALIFORNIA EDISON®

(U 338-E)

# *SCE-01: Direct Testimony in Support of Southern California Edison Company's Application for Authorization to Recover 2024 Incremental Costs Related to Wildfire Mitigation*

Before the

**Public Utilities Commission of the State of California**

Rosemead, California
December 4, 2025

# *SCE-01: Direct Testimony in Support of Southern California Edison Company's Application for Authorization to Recover 2024 Incremental Costs Related to Wildfire Mitigation*

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# I.

# INTRODUCTION

## A. Summary of Request

California's wildfire risk has dramatically increased in recent years, due to climate change, drought, and other factors, such as increased development in wildland-urban borders. The full magnitude of the increased threat, and the significance of its potential consequences, became apparent in 2017, when California experienced five of the most destructive wildfires in its history, up to that point. There is nothing more fundamental to Southern California Edison Company's (SCE's) mission than the safety of the public and SCE's customers, employees, and contractors. As such, SCE has undertaken, and is continuing, efforts to mitigate the risk of wildfires associated with its equipment. This foundational commitment to protect public safety against wildfires is reflected throughout SCE's 2021 and 2025 General Rate Case (GRC) applications, A.19-08-013 and A.23-05-010, respectively; Wildfire Mitigation Plans (WMPs) submitted by SCE in 2019 through 2025 that have been approved by the Office of Energy Infrastructure Safety (OEIS or Energy Safety) and ratified by the California Public Utilities Commission (CPUC or Commission); SCE's 2021 Wildfire Mitigation/Vegetation Management (WM/VM) application (A.22-06-003); SCE's 2022 WM/VM application (A.23-10-001); SCE's 2023 Wildfire Mitigation and Catastrophic Event (WMCE) application (A.24-04-005); and in this current Application.

In this Exhibit, SCE respectfully requests that the Commission authorize SCE to recover incremental 2024 recorded operations and maintenance (O&M) expenses totaling $35.882 million and capital expenditures totaling $62.225 million in SCE's Wildfire Mitigation Plan Memorandum Account (WMPMA) and Fire Risk Mitigation Memorandum Account (FRMMA) associated with wildfire mitigation activities in 2024.[1] Public Utilities Code section 8386.4(a)(2) specifically authorizes SCE to

[1] This includes work performed in 2023 that was properly accrued for in 2023 under US Generally Accepted Accounting Principles (GAAP), and subsequently reversed in 2024 when the invoices are paid, as further discussed in Chapter V.

seek reasonableness review of, and cost recovery for, incurred costs above GRC-authorized amounts for 2024 wildfire mitigation costs recorded in the statutorily-authorized WMPMA and FRMMA.

As referenced above, this is SCE's fourth application seeking such cost recovery in the 2021 GRC cycle. In the 2021 WM/VM (A.22-06-003), SCE sought recovery of $101.47 million of incremental O&M expenses and $97.52 million of incremental capital expenditures incurred in 2021 associated with wildfire mitigation work recorded in the WMPMA and the FRMMA.[2] Similarly, in the 2022 WM/VM (A.23-10-001), SCE sought recovery of $89.039 million of incremental O&M expenses and $135.736 million of incremental capital expenditures incurred in 2022 associated with wildfire mitigation work recorded in the WMPMA and the FRMMA.[3] In the 2023 WMCE (A.24-04-005), SCE sought recovery of $98.133 million of incremental O&M expenses and $82.692 million of incremental capital expenditures incurred in 2023 associated with wildfire mitigation work recorded in the WMPMA and the FRMMA.[4] SCE's request in this Application, related to the incremental costs incurred in 2024 for wildfire mitigation work that is eligible for recovery via the WMPMA and the FRMMA, is generally consistent with the approach taken by SCE in the previous three applications. However, in accordance with the Decisions from SCE's 2021 WM/VM (D.24-03-008), 2022 WM/VM (D.25-06-051), and 2023 WMCE (D.25-06-017), SCE has made the following enhancements to its showing in this Application for costs recorded in the WMPMA and/or the FRMMA that are eligible for recovery:

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[2] In D.24-03-008, SCE's O&M request was authorized in full and SCE's capital expenditure request was authorized in full except for the $21.09 million of capital expenditures that were in Construction-Work-In-Progress (CWIP) status as of the date SCE filed the 2021 WM/VM. In D.25-06-051, the Commission authorized SCE to recover $20.90 million of the $21.09 million of 2021 CWIP that have been transferred to capital additions and authorized SCE to update the revenue requirement through advice letter for the remaining amount when the asset transferred to plant-in-service.

[3] In D.25-06-051, SCE was authorized to recover $79.408 million in O&M expense and $99.392 million in capital expenditures, including $20.90 million and $13.11 million associated with 2021 and 2022 CWIP, respectively.

[4] D.25-06-017 adopted the Joint Motion by SCE, the Public Advocates Office, and Small Business Utility Advocates for Approval of Settlement Agreement that authorized recovery of $ 98.133 million in O&M expenses for WMPMA and FRMMA. SCE's capital revenue requirement was authorized in full, excluding CWIP.

**1. Enhancements in Accordance with D.24-03-008**

- Included tables summarizing amounts authorized for 2024 in D.23-11-096 (SCE's 2021 GRC Track 4 Decision, which authorized amounts for calendar year 2024), with page number references to the Track 4 Decision, compared to actual 2024 O&M expenses and capital expenditures at the GRC activity level, and, where applicable, references with page numbers to the inclusion of the program or activity in the approved 2023-2025 WMP;
- Provided a specific explanation for each program or activity of why the 2021 GRC Track 4 proceeding did not foresee the incremental costs for which reasonableness review and authorization for recovery is requested; and
- To the extent feasible, provided a risk-spend efficiency (RSE) ratio reflecting the total costs and benefits of a given program or activity with total costs reflecting costs approved in the Track 4 Decision, imputed as necessary, and costs requested for recovery in this Application.[5]

**2. Enhancement in Accordance with D.25-06-051[6]**

- Included 'Trending Discussion' in Chapter IV, to provide historical data illustrating the trend, starting from the first use of the WMPMA and FRMMA so that the Commission can quickly assess whether the trend is increasing or decreasing, as expected, over time and take any action that might be needed to review theses costs in greater depth, if needed.

**3. Enhancements in Accordance with D. 25-06-017[7]**

- Documented the firefighting agencies' efforts to secure alternative public sources of Quick Reaction Force (QRF) funding and to secure other non-financial resources.

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[5] *See* D.24-03-008 at p. 99, OP 5.

[6] *See* D.25-06-051 at pp.25-26.

[7] *See* D.25-06-017 at pp.19-21.

- Demonstrated firefighting agencies' ongoing and planned efforts to obtain alternative funding or efforts to secure other non-financial resources.
- Reported on the firefighting agencies' budget for non-SCE funded aerial suppression assets.
- Forecasted the average percentage and dollar bill impact for three National American Industry Classification System (NAICS) codes including Food Services and Drinking Places (NAICS 722), Ambulatory Health Care Service (NAICS 621), and Real Estate (Property Management, NAICS 531), as well as for "small retail store" building types.
- Presented total anticipated bill changes to small business customers.

SCE-01 is organized in the following manner:

- Chapter I: Introduction – Wildfire Mitigation
- Chapter II: Background – Wildfire Mitigation
- Chapter III: Determination of Incrementality for 2024 Wildfire Mitigation Recorded Costs
- Chapter IV: Trending of Incremental Wildfire Mitigation Costs
- Chapter V: Accrual-Based Accounting
- Chapter VI: Wildfire Mitigation Activities

Table I-1 displays the incremental wildfire mitigation-related costs incurred in 2024 that are being sought for recovery in this Application.

## *Table I-1*
## *Wildfire Mitigation*
## *Total Recorded vs. GRC Authorized*[8]
## *($ in thousands)*

| Type | Recovery | Total Recorded | GRC Auth (CPUC) | FERC | Incremental $ |
|---|---|---|---|---|---|
| **Capital** | | | | | |
| | WMPMA | 235,892 | 172,254 | 1,412 | 62,225 |
| **Total Capital** | | **235,892** | **172,254** | **1,412** | **62,225** |

| Type | Recovery | Total Recorded | GRC Auth (CPUC) | Other [1] | Incremental $ |
|---|---|---|---|---|---|
| **O&M** | | | | | |
| | WMPMA | 242,721 | 173,214 | 20,996 | 48,512 |
| | FRMMA | 10 | - | - | 10 |
| | Adjustments | | | | |
| | Less: Shareholder-funded Adjustment - Thomas Fire Settlement (D.) 25-01-024 [2] | | | | (10,000) |
| | Less: DOH Overallocation Correction (2024) [3] | | | | (584) |
| | Less: DOH Overallocation Correction (2019-2023) [4] | | | | (2,749) |
| | Joint IOU Covered Conductor Testing [5] | | | | 693 |
| | Total Adjustments | | | | (12,640) |
| **Total O&M** | | **242,731** | **173,214** | **20,996** | **35,882** |

[1] A&G Capitalization and FERC

[2] This adjustment removes $10 million from SCE's request consistent with D.25-01-042, the Decision Regarding Settlement Agreement Authorizing Cost Recovery for 2017 Thomas Fire and 2018 Montecito Debris Flow, discussed further in SCE-05.

[3] A total of $6.870 million in DOH costs was inadvertently recorded to wildfire-related accounts and is included in the $242.721 million recorded as O&M. Of the $6.870 million, $0.584 million is classified as O&M and has been removed from SCE's cost recovery request in this proceeding. The remaining $6.287 million is the capital portion of DOH that was incorrectly allocated to O&M. SCE proposes to retain the remaining $17.657 million capital portion of DOH charges (incorrectly allocated to O&M) that were already approved in previous wildfire cost recovery proceedings. This proposed treatment for these unique ratemaking circumstances is consistent with the approach for 2024 and is based on the same rationale, which is to minimize the long-term customer financial impacts by avoiding extended recovery periods through depreciation and return on rate base.

[4] Unlike the 2024 DOH overallocation correction, which is excluded from the current application since it has not been collected, DOH costs from 2019-2023 were already recovered. SCE will reduce its current cost recovery request by $2.749 million to reflect the over-collected O&M portion from that period. The remaining $17.657 million is the capital portion of DOH that was incorrectly allocated to O&M. SCE proposes to not refund this amount and rather to forego its capitalization in base capital, because that path is less costly to customers on a PVRR basis.

[5] This adjustment reverses a credit of $0.693 million for Joint Investor-Owned Utility (IOU) Covered Conductor Testing that was already returned to customers in the 2022 WM/VM proceeding (A.23-10-001).

[8] Tables in SCE-01 may not sum due to rounding.

## II.

## BACKGROUND - WILDFIRE MITIGATION

### A. Wildfire Mitigation Response

In both Track 1 and Track 4 of SCE's 2021 GRC,[9] as well as in its approved 2023-2025 WMP,[10] SCE set forth measures it would implement to reduce wildfire risk and Public Safety Power Shutoff (PSPS)-related impacts to its customers and communities in High Fire Risk Areas (HFRAs). During 2024, SCE made significant progress on these measures, including grid hardening, enhanced operational practices and situational awareness, PSPS execution and customer support, fire science and advanced modeling, aerial suppression, alternative technologies, organizational support, and wildfire mitigation training development and delivery. These wildfire mitigation measures are described in Chapter IV.

In the Track 4 Decision, the Commission authorized $173.214 million[11] in wildfire mitigation O&M expenses and $172.254 million in non-Wildfire Covered Conductor Program (WCCP) wildfire mitigation capital expenditures, and permitted SCE to seek reasonableness review of incurred costs incremental to those GRC-authorized amounts.[12] In 2024, SCE expended $48.522 million[13] in O&M expenses and $62.225 million in capital expenditures above GRC-authorized amounts for necessary wildfire mitigation activities. SCE's incremental non-WCCP 2024 wildfire mitigation costs are recorded in either the WMPMA or the FRMMA. Overall, and as further described in the sections that follow for each wildfire mitigation activity, this level of spending was needed to protect public safety, adhere to statutes and regulatory requirements, and comply with SCE's approved WMP commitments.

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[9] Track 1 of 2021 GRC authorized SCE's forecast revenue request for 2021-2023. Track 4 of 2021 GRC authorized SCE's forecast revenue request for a third attrition year covering 2024.

[10] Energy Safety approved SCE's 2023-2025 WMP on October 24, 2023, and the Commission ratified Energy Safety's approval on November 30, 2023.

[11] *See* Appendix A Imputation of 2021 GRC Track 4 Authorized O&M Funding for 2024 in Exhibit SCE-01.

[12] *See* D.23-11-096 and Advice 5180-E as well as SCE's wildfire mitigation-related workpapers, submitted in this proceeding, demonstrating SCE's GRC-authorized amounts.

[13] The $48.522 million does not include the shareholder funded adjustment – Thomas Fire Settlement (D.) 25-01-024 of ($10.0) million, as set forth in D.25-01-042, the joint IOU covered conductor testing correction of $0.693 million, and the 2019 through 2024 department overhead (DOH) adjustment of ($3.333) million, as further discussed in Section III.B.3 below.

In the following tables, SCE summarizes its wildfire mitigation-related incremental cost recovery request. Table II-2 below shows capital expenditures recorded to the WMPMA as compared to authorized amounts for 2024 in Track 4 of SCE's 2021 GRC.

***Table II-2***
***GRC Authorized vs. Total Capital Expenditures[14] [15]***
***by GRC Activity Recorded in the WMPMA***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | FERC Jurisdictional | Incremental Amount | 2023-2025 WMP Page Numbers |
|---|---|---|---|---|---|
| Enhanced Overhead Inspections and Remediations | $ 91,908 | $ 137,044 | $ 1,217 | $ 43,918 | pp. 263-266; 277; 279-330; 426-428 |
| Undergrounding | $ 45,996 | $ 56,676 | $ - | $ 10,680 | pp. 256-258 |
| Alternative Technologies & Distribution Fault Anticipation | $ 24,750 | $ 27,883 | $ 23 | $ 3,110 | pp. 253; 266-270; 274-276; 278; 469-471; 473; 750 |
| PSPS Customer Support | $ 1,203 | $ 8,426 | $ - | $ 7,223 | pp. 550-604 |
| HFRA Sectionalizing Devices | $ - | $ 2,660 | $ 172 | $ 2,488 | pp. 271-274 |
| Enhanced Situational Awareness | $ 2,023 | $ 2,171 | $ - | $ 147 | pp. 445-517 |
| PSPS Execution | $ 4,328 | $ 845 | $ - | $ (3,483) | pp. 550-634 |
| Fire Science and Advanced Modeling | $ 2,046 | $ 189 | $ - | $ (1,857) | pp. 445-517 |
| **TOTAL** | **$ 172,254** | **$ 235,892** | **$ 1,412** | **$ 62,225** | |

Table II-3 below shows O&M expenses recorded to the WMPMA as compared to authorized amounts for 2024 in Track 4 of SCE's 2021 GRC. It is important to note that in this testimony, SCE is setting forth the activity-specific authorized O&M amounts ***as imputed*** from the Results of Operations (RO) model supporting the Track 4 settlement that was adopted in the Track 4 Final Decision. The Track 4 Decision ***did not*** specifically authorize activity-specific O&M revenues; however, and instead approved a wildfire mitigation-related revenue requirement on a total portfolio basis.[16] [17]

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[14] WMP page references in tables throughout this testimony refer to SCE's Updated 2023-2025 WMP filed on March 27, 2023, where the primary discussion of the relevant program/activity occurs (not every reference). Cost data generally is not included in the 2023-2025 WMP.

[15] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

[16] D.23-11-096, Ordering Paragraph (OP) 1, approved the September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement (Joint Motion). Footnote 30 on p.11 of the Joint Motion sets forth "Total 2024 authorized amount for non-VMBA Wildfire Mitigation O&M shall be $161.559 million (in constant 2018$)".

[17] *See* Appendix A of Exhibit SCE-01 for the calculation of imputed authorized amounts.

***Table II-3***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses***
***by GRC Activity Recorded in the WMPMA[18]***
***($ in thousands)***

| GRC Activity | 2024 Imputed GRC Authorized ($2024) | Total Recorded O&M | A&G Capitalization | FERC | Incremental | 2023-2025 WMP Page Numbers |
|---|---|---|---|---|---|---|
| Enhanced Overhead Inspections and Remediations | 104,702 | 126,675 | 1,664 | 10,656 | 9,653 | pp. 263-266; 277; 279-330; 426-428 |
| Aerial Suppression | 16,228 | 36,059 | - | - | 19,831 | pp. 550-634 |
| PSPS Customer Support | 21,294 | 28,314 | 1,200 | 375 | 5,445 | pp. 550-604 |
| PSPS Execution | 16,610 | 27,233 | 1,297 | 1,193 | 8,132 | pp. 550-634 |
| Enhanced Situational Awareness | 3,412 | 9,827 | 1,935 | 331 | 4,149 | pp. 445-517 |
| Fire Science and Advanced Modeling | 3,465 | 4,588 | 191 | 195 | 735 | pp. 445-517 |
| Asset Reliability Risk Analytics | - | 4,388 | 969 | 166 | 3,254 | pp.91-92; 117-129; 697-700 |
| HFRA Sectionalizing Devices | - | 1,954 | - | - | 1,954 | pp. 271-274 |
| Organizational Support | 6,647 | 1,695 | 302 | 54 | (5,307) | N/A |
| Alternative Technologies & Distribution Fault Anticipation | 133 | 1,047 | - | 389 | 525 | pp. 253; 266-270; 274-276; 278; 469-471; 473 |
| Environmental Programs | 722 | 397 | - | - | (326) | N/A |
| Community Resiliency Incentives | - | 270 | - | - | 270 | pp.572-573 |
| Training Seat-Time - Transmission and Distribution | - | 113 | - | 28 | 85 | N/A |
| Training Delivery and Development - Transmission and Distribution | - | 93 | - | 35 | 59 | N/A |
| Develop and Manage Policy and Initiatives | - | 67 | 12 | 3 | 52 | N/A |
| **TOTAL** | **$ 173,214** | **$ 242,721** | **$ 7,570** | **$ 13,425** | **$ 48,512** | |

Table II-4, below, shows O&M expenses recorded to the FRMMA as compared to amounts authorized for 2024 in Track 4 of SCE's 2021 GRC.

[18] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, footnote 30 on p.11.

***Table II-4***
***GRC Authorized vs. Total O&M Expenses***
***by GRC Activity Recorded in the FRMMA***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Alternative Technologies | $ - | $ 10 | pp. 253; 266-270; 274-276; 278; 469-471; 473 |
| **TOTAL** | **$ -** | **$ 10** | |

## B. GRC Authorized

The 2021 GRC Track 1 Decision authorized O&M expenses for 2021-2023. On May 13, 2022, SCE filed Track 4 of its 2021 GRC, putting forth a forecast for its 2024 base revenue requirement. SCE's O&M forecasts for wildfire mitigation and vegetation management activities were generally based on 2021 recorded values. On September 8, 2023, the Track 4 parties (SCE, the Public Advocates Office, The Utility Reform Network, Small Business Utility Advocates, and the Coalition of California Utility Employees) filed a *Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement* resolving all issues in Track 4. On November 30, 2023, the Commission approved D.23-11-096, adopting the Track 4 Settlement Agreement authorizing SCE's 2024 O&M revenue requirement of $193.347 million for wildfire mitigation activities. As shown in Table II-5, the total company authorized amounts are reduced by the authorized portion applicable to administrative and general (A&G) capitalization and FERC-jurisdictional amounts for each GRC activity. The A&G capitalization and FERC-jurisdictional amounts are then subtracted from the authorized amount of $193.347 million for Wildfire Mitigation activities, resulting in a CPUC GRC-authorized amount of $173.214 million for SCE's wildfire mitigation O&M activities in 2024.

***Table II-5***
***2024 Track 4 Imputed GRC Authorized O&M Expenses by GRC Activity***
***Track 4 GRC Authorized - Breakout of A&G Capitalization and FERC[19]***
***($ in thousands)***

| GRC Activity | Total Company 2024 | | FERC | A&G Capitalization (CPUC) | CPUC |
|---|---|---|---|---|---|
| | Constant ($2018) | Nominal ($2024) | Nominal ($2024) | | |
| | | a | b | c | a-b-c |
| Enhanced Overhead Inspections and Remediations | 96,761 | 115,991 | 11,290 | - | 104,702 |
| PSPS Execution | 15,031 | 18,106 | 407 | 1,088 | 16,610 |
| Aerial Suppression | 14,685 | 17,689 | 398 | 1,063 | 16,228 |
| PSPS Customer Support | 20,008 | 23,786 | 534 | 1,958 | 21,294 |
| Organizational Support | 5,617 | 6,681 | 35 | - | 6,647 |
| Fire Science and Advanced Modeling | 4,413 | 5,156 | 343 | 1,348 | 3,465 |
| Enhanced Situational Awareness | 4,323 | 5,078 | 338 | 1,327 | 3,412 |
| Environmental Programs | 610 | 726 | 4 | - | 722 |
| Distribution Fault Anticipation | 112 | 134 | 1 | - | 133 |
| **Grand Total** | **161,559** | **193,347** | **13,349** | **6,784** | **173,214** |

Similarly, Table II-6 shows the total CPUC GRC-authorized amount of $172.254 million for SCE's wildfire mitigation capital activities in 2024, net of FERC-jurisdictional amounts.

[19] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30

***Table II-6***
***GRC Authorized Capital Expenditures by GRC Activity***
***CPUC Jurisdictional[20]***
***($ in thousands)***

| GRC Activity | Nominal Amount ($2024) |
|---|---|
| Enhanced Overhead Inspections and Remediations | 91,908 |
| Undergrounding | 45,996 |
| Alternative Technologies | 24,750 |
| PSPS Execution | 4,328 |
| Fire Science and Advanced Modeling | 2,046 |
| Enhanced Situational Awareness | 2,023 |
| PSPS Customer Support | 1,203 |
| Distribution Fault Anticipation | - |
| HFRA Sectionalizing Devices | - |
| **Grand Total** | **172,254** |

With respect to wildfire mitigation O&M expense, the all-party Track 4 Settlement Agreement approved a single lump-sum amount for 2024.[21] This lump-sum amount in the Settlement Agreement represented SCE's 2021 recorded amount minus a negotiated adjustment.[22] Under the Settlement Agreement, this total authorized amount is $161.559 million (in constant $2018). Unlike a traditional GRC Test Year, where O&M costs are forecasted and authorized at the GRC activity level, the Track 4 authorized amount reflects a negotiated total without specific allocations to individual GRC activities. Because the $161.559 million total authorized amount was not broken down by GRC activity, for purposes of this proceeding, and consistent with Commission guidance,[23] SCE imputed the authorized

[20] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

[21] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement at p. 10; *see also id.* at Appendix A (Track 4 Settlement Agreement) p. A-9 and Appendix B.

[22] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, Appendix B.

[23] See SCE's 2021 WM/VM Final Decision, D.24-03-008, Ordering Paragraph (OP) 5. "(a) one or more tables summarizing program and activity costs authorized in the relevant general rate case (GRC) … decision,

(*Continued*)

amounts from the total wildfire mitigation authorized amount to individual activities.[24] Accordingly, SCE allocated the total authorized wildfire mitigation O&M amount for 2024 of $173.214 million pro-ratably based on their relative proportions of 2021 recorded spending. Under this approach, the Track 4 Final Decision's adopted reduction to 2021 recorded spending levels was applied evenly based on each activity's proportion of the total recorded spend. A detailed mapping of this necessary imputation exercise is included in Appendix A in Exhibit SCE-01 of this Application.

With respect to wildfire mitigation capital expenditures, unlike O&M, the Track 4 Final Decision authorized funding at the GRC activity level, consistent with the settling parties' agreed-upon position set forth in the Track 4 Settlement Agreement.[25] Accordingly, each capital activity, such as Enhanced Overhead Inspections and Remediations, Undergrounding, and Alternative Technologies, was allocated a specific authorized amount based on SCE's operational work plans (i.e., a "budget-based" approach).

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imputing costs as necessary, with page numbers, compared to actual expenditures and expenses" (Internal Citation Omitted)

[24] *See* D.24-03-008 at Ordering Paragraph 5 ("Southern California Edison Company shall include the following information in future Wildfire Mitigation Plan Memorandum Account (WMPMA) … applications … : (a) one or more tables summarizing program and activity costs authorized in the relevant general rate case (GRC) (or other relevant application) decision*, imputing costs as necessary*, with page numbers, compared to actual expenditures and expenses, *at the program and activity level* … .") (emphasis added).

[25] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A, Track 4 Settlement Agreement, at p. A-9 and Attachment 1. Attachment 1 to the Settlement Agreement Appendix A includes detailed documentation of the agreed-upon (i.e., authorized) amount for each relevant wildfire mitigation capital activity.

## III.

## DETERMINATION OF INCREMENTALITY FOR 2024 WILDFIRE MITIGATION RECORDED COSTS

### A. Overview

In this Application, SCE is seeking to recover costs incurred in 2024 that are eligible for recovery via the WMPMA and the FRMMA for wildfire mitigation activities that are incremental to 2024 authorized amounts adopted in the Track 4 Decision. Consistent with the Commission-approved methodology used in SCE's 2021 WM/VM, 2022 WM/VM, and 2023 WMCE proceedings, SCE uses a "portfolio" approach to determine incrementality for wildfire mitigation activities.[26] The portfolio approach compares the total recorded costs across all the activities that SCE is permitted to record in the applicable wildfire memorandum accounts to the authorized amount for those activities, combined. With respect to the wildfire mitigation activities, in lieu of calculating incrementality based on each individual activity or sub-activity compared to the GRC-authorized amounts, the Commission-approved approach is to compare the collective recorded costs of those activities to the GRC-authorized amounts for all the activities combined.[27] This is consistent with Public Utilities Code § 8386.3(c)(1), which provides that an electric utility "shall not divert revenues authorized by the Commission to implement the wildfire mitigation plan to any activities or investments outside of the plan." The ensuing testimony describes the work performed with respect to these activities and examines incrementality at the portfolio level. But, as discussed above, SCE also performed a detailed imputation exercise to determine activity-specific revenue authorization to compare to activity-specific recorded costs.

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[26] *See, e.g.,* Conclusion of Law (CoL) 5 in D.24-03-008 ("Determining incrementality using a portfolio approach, which considers all 2021 wildfire mitigation costs collectively as compared to all wildfire mitigation costs approved in D.21-08-036, and which considers all 2021 V[egetation] M[anagement] B[alancing] A[ccount] costs collectively as compared to vegetation management costs approved in D.21-08-036, is consistent with established prospective ratemaking principles."); *see also* D.25-06-051 at p. 21 (over Cal Advocates' opposition, holding "SCE's presentation of the amount identified as 'incremental' and subject to reasonableness review [pursuant to the portfolio approach] is persuasive.").

[27] In accordance with the directive in OP 5 of D.24-03-008, SCE also provided recorded amounts at a sub-activity level to promote transparency of the recorded costs within each GRC-authorized activity for the purposes of assessing the reasonableness of SCE spend.

## B. Wildfire Mitigation Incremental Costs

SCE is requesting reasonableness review of $48.522 million in wildfire mitigation O&M costs, and cost recovery for $35.882 million in incremental 2024 wildfire mitigation O&M recorded expenses, as shown in Table III-7.

***Table III-7***
***Summary of Recorded and Incremental***
***2024 Wildfire Mitigation***
***O&M Expenses by GRC Activity***
***($ in thousands)***

| GRC Activity | O&M Recorded (A) | FERC Jurisdictional (B) | A&G Capitalization (C) | GRC Authorized (D) | Shareholder Funded Adjustment - Thomas Fire Settlement (D.25-01-024) (E) | DOH Adjustment (F) | IOU CC Testing Adjustment (G) | Incremental Costs (A)-(B)-(C)-(D)+(E)+(F)+(G) | Memorandum Account |
|---|---|---|---|---|---|---|---|---|---|
| Enhanced Overhead Inspections and Remediations | 126,675 | | | | | | | | WMPMA |
| Aerial Suppression | 36,059 | | | | | | | | WMPMA |
| PSPS Customer Support | 28,314 | | | | | | | | WMPMA |
| PSPS Execution | 27,233 | | | | | | | | WMPMA |
| Enhanced Situational Awareness | 9,827 | | | | | | | | WMPMA |
| Fire Science and Advanced Modeling | 4,588 | | | | | | | | WMPMA |
| Asset Reliability Risk Analytics | 4,388 | | | | | | | | WMPMA |
| HFRA Sectionalizing Devices | 1,954 | 13,425 | 7,570 | 173,214 | (10,000) | (3,333) | 693 | 35,882 | WMPMA |
| Organizational Support | 1,695 | | | | | | | | WMPMA |
| Alternative Technologies | 1,057 | | | | | | | | WMPMA/FRMMA |
| Environmental Programs | 397 | | | | | | | | WMPMA |
| Community Resiliency Incentives | 270 | | | | | | | | WMPMA |
| Training Seat-Time - Transmission and Distribution | 113 | | | | | | | | WMPMA |
| Training Delivery and Development - Transmission and Distribution | 93 | | | | | | | | WMPMA |
| Develop and Manage Policy and Initiatives | 67 | | | | | | | | WMPMA |
| **TOTAL** | **$ 242,731** | **$ 13,425** | **$ 7,570** | **$ 173,214** | **$ (10,000)** | **$ (3,333)** | **$ 693** | **$ 35,882** | |

SCE is also requesting reasonableness review and cost recovery of $62.225 million in wildfire mitigation capital expenditures, as shown in Table III-8.

***Table III-8***
***Summary of Recorded and Incremental***
***2024 Wildfire Mitigation***
***Capital Expenditures by GRC Activity***
***($ in thousands)***

| GRC Activity | Recorded Capital Expenditures (A) | FERC Jurisdictional (B) | GRC Authorized (C) | Incremental Costs (A-B-C) |
|---|---|---|---|---|
| Enhanced Overhead Inspections and Remediations | 137,044 | | | |
| Undergrounding | 56,676 | | | |
| Alternative Technologies | 27,873 | | | |
| PSPS Customer Support | 8,426 | | | |
| HFRA Sectionalizing Devices | 2,660 | 1,412 | 172,254 | $ 62,225 |
| Enhanced Situational Awareness | 2,171 | | | |
| PSPS Execution | 845 | | | |
| Fire Science and Advanced Modeling | 189 | | | |
| Distribution Fault Anticipation | 10 | | | |
| **TOTAL** | **$ 235,892** | **$ 1,412** | **$ 172,254** | **$ 62,225** |

Costs associated with each of these activities described in this Exhibit are costs that are not otherwise reflected in SCE's approved revenue requirements and also would not have been incurred "but for" SCE's wildfire mitigation efforts and are, thus, considered eligible to be recorded in the WMPMA and the FRMMA. SCE created wildfire-specific cost objects in its accounting system to ensure the costs of these activities were separately tracked from SCE's other activities. Once costs exceeded total GRC-authorized amounts on a wildfire total portfolio basis, SCE began recording costs into the two approved memorandum accounts.[28]

**1. Wildfire Mitigation Activities**

As previously described and as more fully set forth in Exhibit SCE-04 of this Application, incremental wildfire mitigation-related costs for O&M expenses and capital expenditures are eligible for recovery in the WMPMA and the FRMMA. To determine incrementality, SCE compared the CPUC-jurisdictional portion of these wildfire mitigation-related costs to the relevant amount

[28] SCE's approach for recording costs in the WMPMA and the FRMMA in 2024 is consistent with the approach used in the 2021 WM/VM, 2022 WM/VM, and 2023 WMCE proceedings.

authorized for 2024 from Track 4 of SCE's 2021 GRC, evaluated at the wildfire mitigation activities' portfolio level.[29]

SCE's accounting system utilizes regulatory indicators that enable SCE to separate CPUC-jurisdictional costs from FERC-jurisdictional costs. Recorded costs have been jurisdictionalized between CPUC and FERC using the adopted jurisdictional factors from the 2021 GRC Track 1 Decision.[30] SCE excluded the FERC-jurisdictional costs from its cost recovery request in this Application.

Incrementality for SCE's wildfire mitigation activities is assessed at the wildfire mitigation portfolio level and is determined by reviewing total recorded 2024 spend for wildfire mitigation activities and comparing that to the total dollars authorized for 2024 for wildfire mitigation-related activities. First, SCE consolidated total CPUC-jurisdictional costs across all wildfire mitigation-related activities. Then, SCE compared this total recorded amount with the total wildfire mitigation-related GRC-authorized amounts for 2024. Wildfire mitigation portfolio costs that are higher than GRC-authorized amounts are considered incremental.

In this Application, SCE is assessing wildfire mitigation costs on a portfolio basis, consistent with the statutory prohibition of shifting costs used to implement an approved WMP to programs outside of the WMP.[31] If SCE spent less than authorized in a specific wildfire activity, it appropriately uses that difference to offset overspending on other wildfire mitigation-related activities prior to calculating incremental amounts. This ensures consistency with the statutory prohibition against shifting costs used to implement an approved WMP activity. Therefore, by utilizing a total portfolio approach, SCE ensures that all authorized wildfire mitigation funding is spent on wildfire mitigation-related activities and only seeks recovery for any spend above that total authorized amount.

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29 *See* AL 5180-E and SCE's GRC-authorized workpaper submitted in this proceeding.

30 *See* D.21-08-036 at pp. 538-39.

31 *See* Public Utilities Code § 8386.3(c)(1) ("An electrical corporation shall not divert revenues authorized by the Commission to implement the wildfire mitigation plan to any activities or investments outside of the plan.").

## 2. Cost Category Breakdown

This section provides a breakdown by cost category to show both recorded and incremental costs for both O&M and Capital:

***Table III-9***
***Summary of Cost Category Breakdown for O&M***
***($ in thousands)***

| Cost Category Breakdown | Total Recorded | Incremental |
|---|---|---|
| Straight Time Labor | 30,420 | - |
| Premium Time Labor | 15,908 | 6,952 |
| Contractor | 115,803 | 29,629 |
| Material, Equipment, and Other Costs | 80,600 | 11,940 |
| **TOTAL** | **242,731** | **48,522** |

***Table III-10***
***Summary of Cost Category Breakdown for Capital***
***($ in thousands)***

| Cost Category Breakdown | Total Recorded | Incremental |
|---|---|---|
| Straight Time Labor | 12,955 | 1,973 |
| Premium Time Labor | 9,479 | 1,569 |
| Contractor | 101,003 | 29,626 |
| Material, Equipment, and Other Costs | 112,455 | 29,057 |
| **TOTAL** | **235,892** | **62,225** |

### a) SCE Labor Costs

In 2024, SCE incurred a total of $46.328 million of O&M labor expenses on wildfire mitigation activities, including $30.420 million in Straight Time Labor (ST Labor) and $15.908 million in Premium Time Labor (PT Labor). SCE's GRC-authorized funding fully covered ST Labor costs, and as such, SCE is not seeking recovery of those costs. SCE did incur $6.952 million in incremental PT Labor expenses, and seeks recovery for those costs in this Application.

SCE also incurred a total of $22.434 million of capitalized labor expenditures in 2024, including $12.955 million in ST Labor and $9.479 million in PT Labor. Of that amount, $3.542 million was beyond GRC-authorized amounts and was recorded in the WMPMA; SCE seeks recovery of

these incremental amounts in this Application. A detailed discussion of how SCE addresses ST Labor is presented in the following section.

For both O&M expenses and capital expenditures, SCE's internal labor costs were directly related to PSPS and wildfire mitigation work that was needed to reduce the likelihood of fires associated with or threatening utility assets. These SCE resources performed, among other things, inspections and patrols of utility equipment, proactive grid hardening work, and remediation work, the costs of which went beyond the amount authorized in Track 4. SCE includes its incremental wildfire mitigation-related labor costs in this request because they meet all the criteria of incremental costs, as previously set forth.

**b) Contractor Costs**

In 2024, SCE incurred a total of $115.803 million in contractor O&M expenses, of which $29.629 million are incremental costs associated with contractor work for wildfire mitigation activities. SCE also incurred a total of $101.003 million in capitalized contractor expenditures in 2024, of which $29.626 million are incremental costs associated with contractor work for wildfire mitigation activities. Specifically, in 2024, SCE utilized contract crews to help mitigate wildfire risks throughout SCE's service area. These contractor resources performed, among other things, proactive grid hardening work and remediation work beyond the level of work authorized in Track 4 of the 2021 GRC. SCE is including these wildfire mitigation-related contractor costs in this request because they meet all the criteria of incremental costs, as previously set forth.

**c) Material, Equipment, and Other Costs**

In 2024, SCE incurred a total of $80.600 million in O&M expenses for material and equipment and other costs incurred while performing wildfire mitigation efforts. Of that amount, $11.940 million in O&M expenses were not already recovered in GRC-authorized rates and are therefore incremental costs.[32] SCE also incurred a total of $112.455 million in capital expenditures for

[32] SCE's expenditures for "other costs" incurred while performing wildfire mitigation efforts are comprised of activities related to T&D division overhead costs for distribution, transmission, and substation support. "Other costs" also includes expenditures associated with Aerial Suppression.

material and equipment and other costs. Of that amount, $29.057 million in capital expenditures were not already recovered in GRC-authorized rates and are therefore incremental costs. SCE's 2024 material and equipment and other costs were necessary to directly support the wildfire mitigation activities they are associated with. Most of the incremental wildfire O&M expenses are related to programs such as the Aerial Suppression program, Targeted Undergrounding, PSPS Customer Support, battery purchases for the Critical Care Battery Backup program and Distribution Preventative Maintenance, all of which are discussed in the testimony, below. The incremental wildfire capital expenditures are related to materials and equipment from several activities. For example, with respect to Distribution Preventative Maintenance, the materials consist of, for example, poles, crossarms, lightning arrestors, pole hardware, and bird guards. Another example is Targeted Undergrounding (i.e., material and/or equipment consist of conduit banks that house the wires, vaults, and/or pad mounts for transformers and other equipment). SCE is including these wildfire mitigation-related material and equipment and other costs in this request because they meet all the criteria of incremental costs, as previously set forth.

**3. Demonstration of Incremental ST Labor and Department Overheads (DOH)**

As discussed earlier, the Track 4 Settlement Agreement approved a single lump-sum amount for O&M expenses in 2024. This amount was derived from SCE's 2021 recorded costs, reduced by a negotiated amount as part of a black box settlement, and was not allocated to specific GRC activities or to individual cost components. As such, attempting to retroactively assign authorized amounts to specific cost categories, like ST Labor or DOH within this lump sum is not based on any actual SCE forecast. SCE explains its methodology for this imputation in detail in III.B.3.a) below.

For capital expenditures, the Track 4 Decision did not apply the same black box approach. Instead of approving a single total amount for wildfire capital expenditures, the Track 4 Decision adopted a budget-based approach. Under this framework in the Track 4 settlement agreement, SCE's program-specific capital forecasts were adjusted using agreed-upon escalation factors. These escalation adjustments were applied to reflect inflation, labor and economic cost trends, etc.

Under SCE's use of a "portfolio" approach, the total recorded costs of all wildfire-related activities are compared to the total GRC authorized amount for those activities. This approach

determines whether the overall spending exceeds the authorized amount in the Track 4 Decision. To determine the incremental request in this application, SCE applied the authorized O&M funds to ST Labor and DOH in a manner consistent with prior filings (e.g., 2022 WMVM and 2023 WMCE filings). Using this approach, ST Labor and DOH are funded first from the authorized amount, with remaining funds applied to other labor and non-labor costs based on the timing of spend.[33] This results in no incremental O&M for ST Labor and DOH costs beyond what was authorized in Track 4.[34]

Because of the way capital accounting works, unlike O&M, authorized capital costs are not assigned first to ST Labor and DOH. Instead, all costs, including ST Labor, DOH, PT Labor, and Materials, are recorded as incurred within each work order. This approach reflects the asset-based nature of capital accounting, where the full cost of a project is capitalized and tracked in the plant ledger.[35]

With respect to incrementality, the Track 4 Decision, adopting the Track 4 settlement agreement, provides a mechanism to address actual 2024 costs that exceed authorized capital amounts. The settlement allows SCE to "record relevant 2024 costs in excess of the authorized amount set forth herein in the WMPMA and FRMMA, as appropriate, and seek reasonableness review and recovery of such costs through a future SCE application."[36] This provision gives SCE the flexibility to track and recover costs not included in the Track 4 authorization, subject to reasonableness review by the Commission. It also acknowledges that actual costs may differ from the authorized amount and provides a path for reasonableness review and cost recovery.

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[33] Certain activities, such as Above Ground Duct Bank (AGDB), are treated as 100 percent incremental. The costs associated with AGDB are tracked via FRMMA, as the activity was not included in Track 4 and is not discussed in the 2023-2025 WMP.

[34] *See* SCE workpapers 2024 WMCE SCE-01 (Capital Detailed Spreadsheet Nov 21 2025) and 2024 WMCE SCE-01 (O&M Detailed Spreadsheet Nov 21 2025), submitted in this proceeding.

[35] Capital wildfire mitigation costs record to specific work orders that ultimately result in plant assets reflected in SCE's plant ledger. These recorded costs are tracked throughout the year and measured against authorized targets as they are incurred. Each work order aggregates various costs (e.g., SCE labor, contractors, materials, etc.), allowing for detailed tracking at the project level. Once the aggregated capital costs exceed the authorized amount, any additional expenditures are considered incremental. Capital expenditures are therefore monitored both in total (for incrementality purposes) and at the individual work order level to ensure accurate asset accounting.

[36] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A, Track 4 Settlement Agreement, at p. A-10, FN 7.

**a) Imputing Authorized Amounts Approved in Track 4 of SCE's 2021 GRC**

SCE conducted a supplemental analysis to compare SCE's 2024 authorized O&M amount with its 2024 recorded expenditures. The purpose of this analysis is to explain why SCE's labor and overhead costs have increased since 2021 – the reference year used to derive SCE's Track 4 forecast, and the basis for arriving at the black-box, lump sum settlement. SCE is including this analysis in response to the Commission's decision in the 2022 WM/VM proceeding, where the Commission found that SCE had failed to meet its burden of proof to demonstrate that its ST Labor and DOH costs were not already included in GRC-authorized rates.[37]

The recorded expenditures reflect CPUC-only costs. As explained above, the Track 4 Decision approved a single lump sum for 2024 O&M wildfire mitigation expenses pursuant to a settlement agreement. Since the lump-sum was not broken down by cost category, for this supplemental analysis, SCE estimated, or imputed, how much of the authorized funding should be assigned to each of ST Labor and DOH. This imputation of the authorized amount was performed as follows:

1. 2021 historical spending as a baseline – SCE used 2021 recorded expenditures as the foundation for this analysis. These historical costs reflect how funds were actually spent for the ST Labor and DOH cost categories.

2. Calculating pro rata percentages – The ST Labor and DOH cost categories were evaluated based on each of their respective shares of the total 2021 recorded wildfire spend. These shares, which are expressed as pro rata percentages, show the relative weight compared to total O&M expenditures for the year.

3. Imputing authorized amounts – SCE applied the pro rata percentages to the 2024 lump-sum authorized amount from the Track 4 Decision to estimate the authorized allocated to ST Labor and DOH.

[37] D.25-06-051, p. 65.

This supplemental approach to impute authorized amounts by cost category allows a comparison with recorded expenditures, and to show where recorded costs in 2024 exceed the imputed authorized amount.

**b) Explanation for Recorded Expenditures Above Imputed Authorized Amounts for ST Labor and DOH**

The following table demonstrates the imputed GRC-authorized amount for 2024 for ST Labor and DOH, which was calculated using the methodology described above, compared to the actual recorded expenditures (CPUC) for the ST Labor and DOH cost categories. SCE then provides an explanation for the spending in each of these cost categories above imputed authorized amounts and why that spending is reasonable.

***Table III-11***
***2024 Recorded O&M Expenses versus Imputed Authorized***
***($ in thousands)***

| Cost Category | 2024 Imputed GRC Authorized | 2024 Recorded Expenditures (CPUC) | $ Difference | % Increase 2024 Recorded vs 2024 Imputed Authorized |
|---|---|---|---|---|
| | A | B | C = B - A | D = B/A - 1 |
| ST Labor | 20,237 | 27,375 | 7,138 | 35% |
| Overhead | 14,674 | 21,075 | 6,401 | 44% |
| **Total** | 34,911 | 48,450 | 13,539 | 39% |

Table III-12 and Table III-13 below show the imputed GRC-authorized amounts and recorded expenditures for ST Labor and Overhead costs, respectively, by each GRC activity.

*Table III-12*
*2024 Recorded O&M Expenses versus Imputed Authorized (ST Labor by GRC Activity)*
*($ in thousands)*

| GRC Actvitiy | 2024 Imputed GRC Authorized | 2024 Recorded Expenditures (CPUC) | $ Difference |
|---|---|---|---|
| Alternative Technologies | 182 | 160 | (22) |
| Community Resiliency Incentives | 5 | 1 | (4) |
| Develop and Manage Policy and Initiatives | - | 25 | 25 |
| Enhanced Overhead Inspections and Remediations | 13,026 | 15,362 | 2,336 |
| Enhanced Situational Awareness | 238 | 517 | 278 |
| Fire Science and Advanced Modeling | - | 0 | 0 |
| Fusing Mitigation | 2 | - | (2) |
| HFRA Sectionalizing Devices | 8 | 893 | 885 |
| Infrared Inspection Program | 13 | 15 | 1 |
| Organizational Support | 73 | 1 | (71) |
| PSPS Customer Support | 290 | 2,138 | 1,848 |
| PSPS Execution | 6,233 | 8,155 | 1,922 |
| Training Delivery and Development - Transmission and Distribution | - | 47 | 47 |
| Training Seat-Time - Transmission and Distribution | 167 | 61 | (106) |
| **Total** | **20,237** | **27,375** | **7,138** |

*Table III-13*
*2024 Recorded O&M Expenses versus Imputed Authorized (Overhead by GRC Activity)*
*($ in thousands)*

| GRC Actvitiy | 2024 Imputed GRC Authorized | 2024 Recorded Expenditures (CPUC) | $ Difference |
|---|---|---|---|
| Alternative Technologies | 57 | 90 | 33 |
| Distribution Fault Anticipation | 12 | | (12) |
| Enhanced Overhead Inspections and Remediations | 13,827 | 19,036 | 5,209 |
| Fire Science and Advanced Modeling | - | 0 | 0 |
| Fusing Mitigation | 6 | - | (6) |
| HFRA Sectionalizing Devices | 1 | 293 | 292 |
| Infrared Inspection Program | 45 | 68 | 23 |
| PSPS Customer Support | - | 0 | 0 |
| PSPS Execution | 727 | 1,586 | 860 |
| Training Seat-Time - Transmission and Distribution | - | 2 | 2 |
| **Total** | **14,674** | **21,075** | **6,401** |

**(1) ST Labor**

The growth in ST Labor in 2024 is mainly driven by PSPS Execution and Inspections and Remediations. For PSPS Executions, the PSPS Operations program has grown since

2021 (which is the basis for SCE's Track 4 forecast and the approved settlement), requiring expanded operations. These changes occurred after the calendar year 2021. For Inspections and Remediations, improved risk modeling led to more aerial and ground inspections than in 2021, resulting in higher find rates and increased remediation work, which increased ST Labor costs. SCE has steadily expanded the scope of inspections since the launch of enhanced overhead inspections in 2018-2019. A more detailed description is provided in Chapter VI below.

**(2) Overhead Costs**

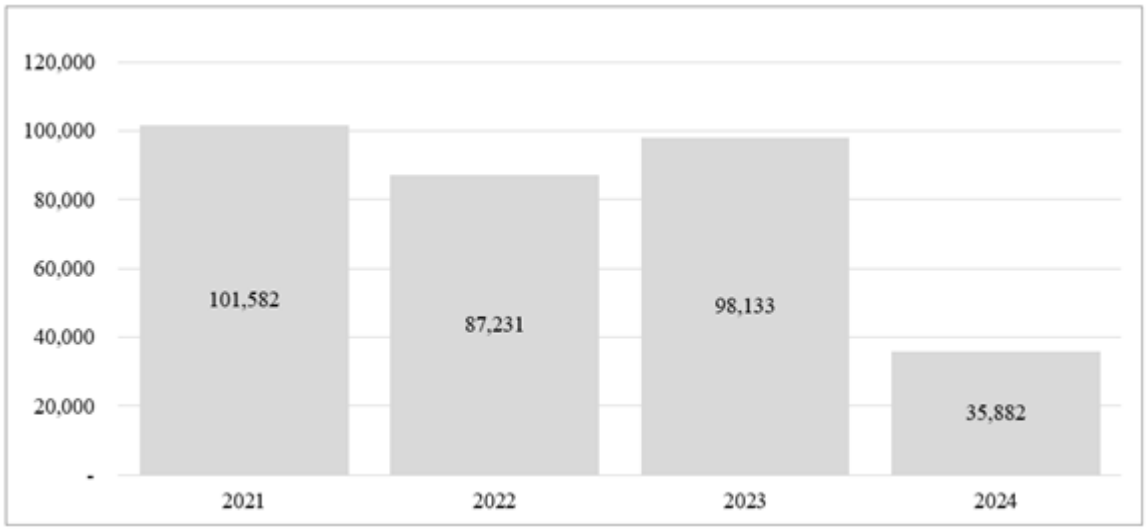
Overhead costs vary across the years and are dependent on labor, material, contract, and other charges. These costs scale in proportion to the expansion of wildfire mitigation activities. As the scope of mitigation work grows, overheads increase to support the broader portfolio of activities. These may include labor expenses such as management and administrative support, as well as non-labor items like routine maintenance of equipment. SCE allocates these support costs to both O&M and Capital as overhead, based on the proportion of direct costs recorded for each activity. Each month, direct costs are collected through SCE's accounting system to establish a base for overhead allocation. The total support costs are then divided by this base to determine an allocation rate, which is applied to calculate the overhead assigned to O&M and Capital.

## IV.

## TRENDING OF INCREMENTAL WILDFIRE MITIGATION COSTS

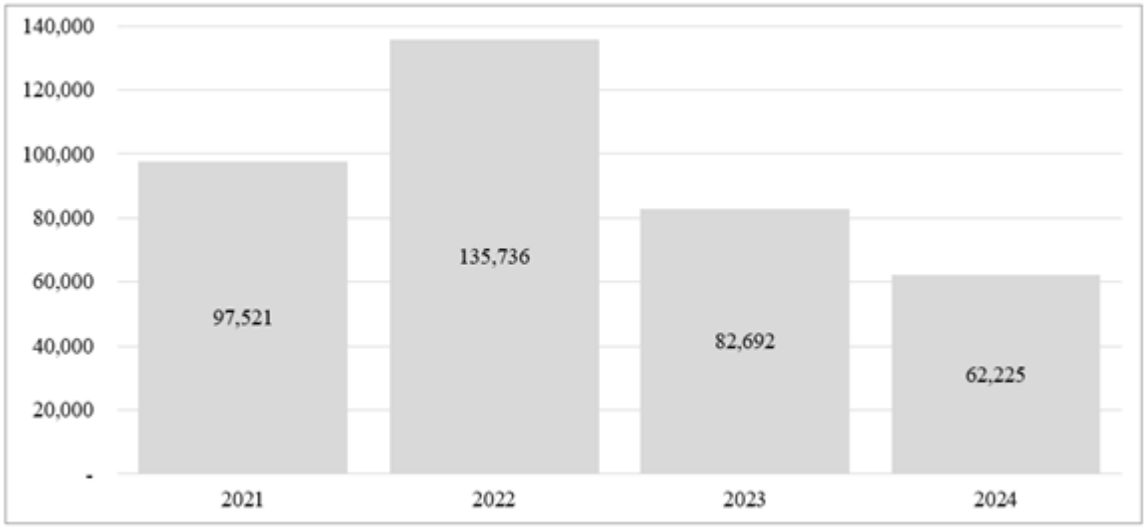
In accordance with D.25-06-051, this section presents historical data illustrating the trend of wildfire expenditures which have been tracked using WMPMA and FRMMA.[38] As can be seen in the figures below, both incremental O&M and incremental capital costs in 2024 were less than the incremental costs incurred in prior years.

***Figure IV-1***
***O&M Historical Incremental Costs***
***($ in thousands, Nominal)***




[38] D.25-06-051 (pp. 24-25) states, "Accordingly, SCE should consider including in future cases involving these accounts and in its general rate cases, historical data illustrating the trend, starting from the first use of these accounts to the present so that the Commission can quickly assess whether the trend is increasing or decreasing, as expected, over time..."

***Figure IV-2***
***Capital Historical Incremental Costs***
***($ in thousands, Nominal)***



## V.

## ACCRUAL-BASED ACCOUNTING

SCE (as a wholly owned subsidiary of Edison International), like all publicly traded United States companies, is required to follow Generally Accepted Accounting Principles (GAAP). GAAP requires accrual-based accounting. Under accrual-based accounting, companies are legally obligated to estimate liabilities for a calendar year even if they have not received an invoice yet for those costs for service rendered or material received. This is known as an accrual.[39] Then, in the following year, when the invoice is received and paid, the company trues up its books to reflect actual spending. This is known as the accrual reversal. As such, SCE's recorded costs in this proceeding include both accruals (for work performed in 2024 and final invoices to be paid in 2025) and accrual reversals (for work performed in 2023 and final invoices were paid in 2024).

Under the well-established accrual method of accounting, revenue is recorded when earned, and expenses are recorded when incurred. SCE's procedure is to record an initial estimate in the month the expense is incurred. SCE then reverses that accrual when the actual invoice is received and records the actual invoice as paid in the month the invoice is processed. Vendor invoices can trail by several months after the work is performed. It is important to note that accrual-based accounting under GAAP relies on reasonable estimates which are subsequently trued up. Given that it is not possible to perfectly estimate the exact amount accrued in a given year, there will inevitably be either an under-accrual or over-accrual in any given year. That is how GAAP-compliant accrual accounting and the automatic true-up process works. At the end of the day, customers pay for all prudently incurred costs; no more, no less.[40]

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[39] The same is true for estimated revenues a company expects to receive in a year, but because this proceeding is about SCE's request to recover costs, SCE is limiting the explanation here to the cost side of the ledger.

[40] Plus or minus applicable interest, consistent with the Commission-approved tariff and the operation of all Commission-jurisdictional balancing and memorandum accounts.

# VI.

# WILDFIRE MITIGATION ACTIVITIES

In this chapter, SCE describes the wildfire mitigation activities it undertook in 2024 to reduce the risk of wildfire ignitions in its service area. SCE is seeking reasonableness review of and cost recovery for only those costs that are incremental to the amounts authorized in Track 4 of the 2021 GRC that were recorded or are eligible for recovery in the WMPMA and the FRMMA. This testimony provides the detail needed to assess the reasonableness of SCE's 2024 wildfire mitigation costs.

SCE also notes that its activities in 2024 were consistent with the mitigation strategies and program targets that were presented, evaluated, and approved by OEIS in its 2023-2025 WMP.

***Table VI-14***
***2024 Wildfire Mitigation Total O&M and Total Capital[41]***
***($ in thousands)***

| Type | Recovery Account | Total Recorded | GRC Authorized (CPUC) | CPUC Authorized (FERC) | Incremental |
|---|---|---|---|---|---|
| **Capital** | | a | b | c | d=a-b-c |
| | | 235,892 | 172,254 | 1,412 | 62,225 |
| **Total Capital** | | 235,892 | 172,254 | 1,412 | 62,225 |

| Type | Recovery Account | Total Recorded | GRC Authorized (CPUC) | CPUC Authorized (A&G Capitalization and FERC) | Incremental (CPUC) |
|---|---|---|---|---|---|
| **O&M** | | a | b | c | d=a-b-c |
| | WMPMA<br>Wildfire Management | 242,721 | 173,214 | 20,996 | 48,512 |
| | FRMMA<br>Wildfire Management | 10 | - | - | 10 |
| **Total O&M** | | 242,731 | 173,214 | 20,996 | 48,522 |

Footnote: Please note that the CPUC incremental O&M amount does not include adjustments related to the Shareholder-funded Adjustment - Thomas Fire Settlement (D. 25-01-024) of $10 million ordered in D.25-01-042, the 2019-2024 DOH Adjustment of $3.333 million ordered in D.25-06-017, and the Joint IOU Covered Conductor Testing Correction of $0.693 million which was already returned to customers in the 2022 WM/VM proceeding (A.23-10-001).

41 The GRC Authorized (CPUC) amount of $173.214 million is net of A&G capitalization and FERC.

## A. Risk Spend Efficiencies

A risk spend efficiency (RSE) calculation provides an indicator of a program's risk reduction compared to the costs for that program. RSEs help SCE evaluate the relative cost-effectiveness of potential initiatives; this in turn provides insight concerning prudently allocating resources, funding, and efforts to efficiently mitigate wildfire risk. That said, it is not in the best interest of our customers or the communities we serve for SCE to carry out a comprehensive wildfire risk mitigation plan based solely on RSEs. An RSE does not consider certain operational realities, such as resource constraints, compliance issues, or service disruptions. Relying solely on RSEs could lead to significant parts of SCE's electrical system and potentially significant risk issues being left unaddressed. Indeed, the Commission's Safety and Enforcement Division (SED) noted that focusing solely on RSEs in selecting mitigations could be "suboptimal from an aggregate risk portfolio standpoint."[42] SED further acknowledged that "mitigations are usually selected based on the highest RSE score unless there may be some identified resource constraints, compliance constraints, or operational constraints that may favor another candidate measure with a lower RSE."[43] All things being equal, an initiative with a relatively high RSE may generally be preferable to one with a relatively low RSE. However, when an initiative has a relatively low RSE, it could still be reasonable to deploy because, for example, it is required (e.g., critical care battery backup program to medical baseline (MBL) customers affected by PSPS), addresses a particular risk driver that other mitigations do not (e.g., infrared inspections), or reduces overall risk even if it costs more (e.g., targeted undergrounding).

Below, as directed in Ordering Paragraph (OP) 5 of D.24-03-008, SCE provides RSEs for activities that directly mitigate wildfire or PSPS risks. However, some activities do not *directly* reduce either wildfire or PSPS risks. For example, various situational awareness activities, as well as certain customer outreach programs or technology projects do not reduce risks by themselves but enable

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[42] California Public Utilities Commission, Risk and Safety Aspects of Risk Assessment and Mitigation Phase Report of Pacific Gas and Electric Company Investigation 17-11-003 (March 30, 2018), p. 18. *See* SCE's workpaper submitted in this proceeding.

[43] *Id.*

effective deployment of other activities. Calculating reductions in probability or consequence of ignition or PSPS events for these activities would be speculative at best. Furthermore, these foundational activities are necessary regardless of RSEs. As another example, pilots are being conducted not to reduce risk per se, but to assess technologies that can potentially reduce risks to determine operational impacts, costs, risk reduction benefits, and more. Once the results of the pilots are available, RSEs would be calculated prior to broad scale deployment.

## B. Enhanced Overhead Inspections and Remediations

### 1. Overview

This section of testimony describes SCE's Enhanced Overhead Inspections and Remediations and its associated 2024 costs. Table VI-15 and Table VI-16 below show the O&M expenses authorized in Track 4 of the 2021 GRC, as well as the total O&M expenses for Enhanced Overhead Inspections and Remediations in 2024. The imputed GRC authorized amount is $104.194 million.[44]

***Table VI-15***
***Enhanced Overhead Inspections and Remediations***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses***
***by GRC Activity and by Cost Recovery Account[45]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Enhanced Overhead Inspections and Remediations | $ 104,702 | $ 126,675 | pp. 263-266; 277; 279-332; 426-428 |
| **TOTAL** | **$ 104,702** | **$ 126,675** | |

[44] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[45] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement p.11. FN 30.

***Table VI-16***
***Enhanced Overhead Inspections and Remediations***
***2024 Total Recorded O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Distribution O&M Preventive Maintenance / Breakdown Maintenance, HFRI Repaires/Replacements, AOC Repairs/Replacements, Long Span Initiative | $ 58,293 |
| HFRA 360 Program - D / Aerial Inspections - D / HFRA 360 Program - D AOC / Overhead Detail Inspections / HFRI Inspections - D / Annual Grid Patrol | $ 36,731 |
| Aerial Inspections - T | $ 13,331 |
| Technology Support Tools | $ 4,931 |
| HFRI & AOC Repairs / Replacements - T | $ 4,712 |
| HFRI Inspections and AOC Inspection - T | $ 2,736 |
| Technology Solutions | $ 2,147 |
| Data Platform/Governance | $ 2,136 |
| Transmission Splice | $ 817 |
| Infrared Inspection Program | $ 752 |
| Transmission Work Order Related Expense | $ 310 |
| Covered Conductor Inspections | $ 268 |
| Distribution Work Order Related Expense | $ 123 |
| HFRI Generation | $ 41 |
| HFRI Repairs / Replacements - Gen | $ 27 |
| High-Risk Transition Spans | $ 17 |
| HFRI Project Management Support | $ 1 |
| Construction Standards Remediation | $ (700) |
| **TOTAL** | **$ 126,675** |

Table VI-17 and Table VI-18 below show the capital expenditures authorized in Track 4 of the 2021 GRC for 2024, as well as the total capital expenditures for Enhanced Overhead Inspections and Remediations in 2024.

***Table VI-17***
***Enhanced Overhead Inspections and Remediations***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditures[46]***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Enhanced Overhead Inspections and Remediations | $ 91,908 | $ 137,044 | pp. 263-266; 277; 279-332; 426-428 |

***Table VI-18***
***Enhanced Overhead Inspections and Remediations***
***2024 Total Incurred Capital Expenditures by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| Distribution Capital Preventive Maintenance & Breakdown Maintenance, HFRI Repairs/Replacements, AOC Repairs / Replacements, Long Span Remediation | $ 99,249 |
| HFRI Repairs / Replacements T | $ 16,729 |
| Technology Support Tools | $ 8,850 |
| Technology Solutions | $ 7,551 |
| Data Platform/Governance | $ 2,093 |
| HFRA 360 Program - D | $ 1,339 |
| FR Wrap Retrofit of Dead-end Poles | $ 624 |
| Legacy Facilities | $ 453 |
| Vertical Switches | $ 154 |
| Infrared Inspection Program | $ 1 |
| **TOTAL** | **$ 137,044** |

Asset inspections are a foundational element of SCE's wildfire strategy that complement other core areas of SCE's wildfire mitigation portfolio such as grid hardening, vegetation management, and situational awareness. The purpose of asset inspections is to identify existing or potential issues with SCE's utility assets that, if left unaddressed, could potentially lead to a wildfire ignition. This section

[46] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

also discusses the remediations that SCE performs following the identification of an issue by an inspection, along with technology tools that support inspections and remediations.

Asset inspections are periodic and must be performed on an ongoing basis, as utility assets experience degradation over time. As discussed, below, SCE uses sophisticated risk modeling tools to determine inspection scope and frequency. SCE may inspect a given pole each year, as that asset's inspection frequency will be informed by risk modeling. SCE also evaluates the results of its inspection processes through Quality Assurance/Quality Control (QA/QC) reviews. SCE's current inspection portfolio represents significant maturity and advancement from the original wildfire-driven inspection efforts in the 2018/2019 and 2020 period.

SCE inspects the electrical equipment within its high fire risk area (HFRA) pursuant to CPUC regulatory requirements (i.e., General Order (GO) 95 and GO 165), as well as its own internal standards that go beyond the GO 95 and GO 165 requirements. GO 95 provides guidance on overhead electric line construction standards and GO 165 provides guidance on the minimum timing for inspections. As noted above, inspections are conducted with the intent of identifying existing or potential problems on SCE's system. When a problem is identified by the inspector, through either ground, aerial, infrared, corona scans, or conductor and splice assessments, a notification is generated. A notification is then given a priority identifier, P1, P2, or P3, depending on the severity of the risk created by the identified condition, and the notification is scheduled for remediation. Remediation costs may be either an O&M expense or a capital expenditure, pursuant to existing accounting standards and requirements. SCE uses technology support tools to help facilitate the inspections and remediations processes.

This GRC activity is comprised of the following sub-activities:

- Distribution Remediations, includes Distribution Preventive Maintenance and Distribution Breakdown Maintenance, HFRI Repairs and Replacements, AOC Repairs and Replacements, Long Span Initiative and Remediations – See section VI.B.3, below

- Distribution Inspections in High Fire Risk Area, includes HFRA 360 Program-D, Aerial Inspections-D, HFRA 360 Program-D AOC, HFRI Inspections-D, Overhead Details Inspections and Annual Grid Patrol – See Section VI.B.4, below[47]
- Transmission Aerial Inspections – See Section VI.B.5, below
- HFRI Inspections – T – See Section VI.B.6, below
- Technology Solutions – See Section VI.B.7, below
- Data Platform and Governance – See Section VI.B.8, below
- Transmission HFRI Repairs and Replacements – See Section VI.B.9, below
- Technology Support Tools – See Section VI.B910, below
- Transmission Splice – SCE used enhanced transmission conductor and splice inspections methods (LineVue and X-Ray) in HFRA to complement existing inspection processes to help prevent future ignitions. LineVue determines the deterioration of the cross-sectional area of the conductor steel core and detects any localized breaks or corrosion pits on the steel wires and loss of the zinc galvanized layer. X-Ray is used on conductor line splices to verify proper installation, as well as identify broken strands or deformities. In 2024 SCE performed conductor and splice assessments on approximately 33 spans with LineVue, and 70 splices with X-Ray and recorded O&M expenses of $0.817 million for this sub-activity.
- Infrared is used to scan and detect temperature differences between components and identify heat signatures of components called “hot spots,” which may indicate deterioration in structures and equipment not visible to the naked eye. Infrared inspections can be performed from vehicles, but some require hiking to the structure or using a helicopter. A two-person crew is used for vehicle inspections,

[47] Throughout SCE’s testimony, the capital letter “T” signifies “Transmission,” and the capital letter “D” signifies “Distribution.”

but only one inspector is required for helicopter inspections. In 2024 SCE recorded O&M expenses of $0.752 million and capital expenditure of $0.001 million. The Infrared Inspection Program is comprised of the following sub-activities:

  - Infrared Inspection Program – Distribution IR – In 2024, SCE performed Distribution Infrared Inspections on 5,399 overhead distribution circuit miles, which represented approximately 61% of overhead distribution circuit miles in HFRA.
  - Infrared Inspection Program – Transmission IR and Corona Scans – Transmission infrared inspection detects potential problems leading to component/conductor failure, which corona scanning technology is solely used in higher voltage circuits. During transmission infrared and corona scanning, specialized infrared and ultraviolet (corona) light cameras are mounted on helicopters and the line is flown, capturing data at splices, conductor connection/attachment points, and insulators. In 2024, SCE performed transmission infrared and corona scans on 1,086 HFRA transmission circuit miles.

- Transmission Work Order-Related Expense – These are expenses incurred for preventive and reactive maintenance work in SCE's wildfire mitigation program that is necessary when capital additions or replacements are being performed and are not capitalized pursuant to standard accounting guidelines. An example is the replacement of insulators, a minor item installed on crossarms, during a pole replacement. In 2024, SCE recorded O&M expenses of $0.310 million for this sub-activity.
- Covered Conductor Inspections – In 2024, SCE continued assessing covered conductor to understand its performance and maintenance needs. In particular,

SCE performed condition assessments of aluminum coastal covered conductor to assess its performance in relation to the coastal environment. System-wide, covered conductor was inspected to determine if there are emerging failure modes that warrant new maintenance activities. As a result, no new failures were identified, however coastal aluminum conductor continues to be monitored for any potential early degradation. In 2024, SCE recorded O&M expenses of $0.268 million for Covered Conductor Inspection and Maintenance activities directly related to these inspections.

- Distribution Work Order-Related Expense – These are expenses incurred for preventive and reactive maintenance work in SCE's wildfire mitigation program that is necessary when capital additions or replacements are being performed and are not capitalized pursuant to standard accounting guidelines. An example is the replacement of insulators, a minor item installed on crossarms, during a pole replacement. In 2024, SCE recorded O&M expenses of $0.123 million for Distribution Work Order-Related Expense.
- HFRI Generation Inspections– SCE performed HFRI inspections on generation assets such as powerhouses, substations, transformer decks, gauging stations, pull boxes, and weather stations. These inspections involved a detailed visual inspection of generation assets to identify any equipment issues or conditions that might cause an ignition risk. In 2024, SCE completed inspection of 225 generation assets in HFRA and recorded O&M expenses of $0.041 million.
- HFRI Repairs / Replacements – Gen – This involved trimming and brushing of vegetation close to generation assets. In 2024, SCE recorded O&M expenses of $0.027 million for this sub-activity.
- High-Risk Transition Spans – Conductor spans on SCE's transmission system where the conductor changes orientation from a horizontal configuration to a vertical configuration (or vice versa) require remediation to reduce ignition risk

from wire-to-wire contact. In 2024, SCE initiated a comprehensive inventory of transmission spans located within High Fire Risk Areas (HFRA) using the inspection form. Through this effort, at least sixty 66kV transition spans have been identified as potentially high-risk in HFRA. SCE has since begun conducting detailed engineering analyses to assess these spans and determine appropriate remediation measures to mitigate associated risks. In 2024, SCE recorded O&M expenses of $0.017 million for this sub-activity.

- HFRI Project Management Support – Involves managing and coordinating various tasks to ensure the successful completion of wildfire related projects. The support encompasses activities such as planning, budgeting, scheduling, and tracking (performance managing) the progress of HFRI-related projects to ensure they comply with regulatory standards and achieve organizational objectives. In 2024, SCE recorded O&M expenses of $0.001 million for this sub-activity.
- Fire Resistant Wrap Retrofit of Dead-end Poles – In 2024, SCE piloted a new activity to install fire-resistant (FR) wrap on existing wood poles with covered conductor in severe risk and high consequence areas with the intent to improve grid resiliency by protecting its structures in the event of wildfire. The pilot concentrated efforts and risk-prioritized scope at the circuit level based on the number of historical fires (burn scars) experienced per structure. SCE retrofitted 619 dead-end and adjacent tangent wood pole structures in the high-risk, ingress/egress of the Trumpet, Calgrove, and Arlene circuits within the North Valley region. In 2024, SCE recorded capital expenditures of $0.624 million for this sub-activity.
- Legacy Facilities (Generation)– In 2024, SCE implemented upgrades to enhance the safety of legacy hydroelectric facilities. Open wire distribution lines between the facility and the operating gatehouses were re-routed to an existing covered conductor line. Additionally, the bare copper controls were upgraded to a fiber

circuit reducing the risk of ignitions caused by object contact or clashing of bare conductors. In 2024, SCE recorded capital expenditures of $0.453 million for this sub-activity.

- Vertical Switches – Based on inspection findings, SCE determined it prudent to replace legacy vertical switches installed on wooden crossarms with new vertical switches on composite crossarms due to the ignition risk posed by the former. The program was sunset in 2023. The incomplete projects from 2023 were carried over and completed in 2024, with a recorded capital expenditure of $0.154 million for this sub-activity.
- Construction Standard Remediation –Construction Standard Remediation remediates covered conductor construction work completed prior to 2021 including any missing items such as dead-end covers, connector covers, fuse covers, lightning arrestors and covers, and pothead covers, and identifying abnormal conditions such as visible signs of tracking or damage on the outer jacket. In 2022, SCE modified its Covered Conductor (CC) construction standard to include the replacement of open wire secondary or weather-resistant aluminum (OWS or WAL) with multiplex secondary conductors. Weather resistant aluminum wire on the secondary system is outdated technology and will be updated to the new standard when WCCP is installed. Construction Standards Remediations are work SCE performed in 2021 on certain earlier-installed covered conductor projects to bring those installations up to SCE's current construction and design standards. This work was important to help ensure the continued full effectiveness of covered conductor and to prevent potential wire downs that could pose ignition risk. As also outlined in SCE's 2022 Wildfire Mitigation and Vegetation Management testimony (A.23-10-001, Exhibit SCE-01), SCE incurred expenditures totaling $1.154 million for joint investor-owned utilities (IOUs) testing of covered conductor in 2022. The costs were shared

among the three participating IOUs, including SCE, PG&E, and SDG&E, with each IOU responsible for one-third of the total costs. In 2024, SCE received reimbursement payments totaling $0.692 million from PG&E and SDG&E. Accordingly, SCE reduced its cost recovery request by the same amount in its rebuttal testimony and excluded the reimbursed portion when implementing the Commission-authorized 2022 revenue requirement in 2025, pursuant to D.25-06-051. As a result, SCE recorded a ($0.700) million credit to its O&M expenses in 2024.

**2. Spending on Enhanced Overhead Inspections and Remediations Was Reasonable**

SCE's spending on Enhanced Overhead Inspections and Remediations was reasonable because the sub-activities that comprise this GRC activity directly mitigated a significant amount of wildfire risk, allowed SCE to manage and execute inspections, and store, evaluate and utilize the enormous amount of data captured during inspections more effectively.

As discussed above, SCE's Track 4 forecast for 2024 costs was based on SCE's 2021 recorded costs. As with many other areas discussed in this Application, the economic conditions in May 2022, when SCE submitted its 2024 forecast, were markedly different than the economic conditions in 2024, which have been influenced by supply chain issues and significant inflation. For Enhanced Overhead Inspections and Remediations, SCE also conducted more inspections and had more findings that required remediation than it had in 2021, resulting in above-authorized spending. Further, each inspection and remediation cost more than in 2021. However, the increased inspection scope was informed by SCE's latest risk-informed strategy from its approved 2023-2025 WMP and the increased costs were affected by factors outside of SCE's control, as further explained, below. Choosing to remain with the original frequency and limited methods and tools used in 2021, despite SCE's new learnings, would not have been a prudent alternative. As such, SCE spending more than authorized for this activity was reasonable. In the sections that follow, SCE explains in more detail the reasonableness of SCE's spending on SCE's Distribution Inspections in HFRA, Distribution Remediations, Transmission Aerial

Inspections, Transmission HFRI Repairs and Replacements, Data Platform and Governance, Technology Support Tools, and Technology Solutions.

### 3. Distribution Remediations[48]

#### a) Overview

This section discusses multiple sub-activities including Distribution Preventive Maintenance, Distribution Breakdown Maintenance, HFRI Repairs and Replacements, AOC Repairs and Replacements, and Long Span Initiative and Remediations.

SCE's risk-informed distribution inspection programs result in findings of existing or potential issues that could lead to ignitions and catastrophic wildfires if left unaddressed. This includes work such as replacing poles, crossarms, lightning arrestors, pole hardware, and bird guards, and repairing and/or replacing conductor. Remediation notifications are prioritized based on the severity of the findings, and result in both capital expenditures and/or O&M expenses when the remediation is performed (pursuant to accounting guidelines).

Distribution Breakdown Maintenance typically consists of Priority 1 (P1) remediation work based on inspection findings, as well as issues identified through other means that also require immediate attention. Consistent with GO 95, SCE makes P1-related conditions safe within 72 hours.

Distribution Preventive Maintenance typically consists of Priority 2 (P2) remediation work based on inspection findings, as well as P2 issues found by crews. The remediation timeframes for P2 issues that create a fire risk are 12 months in Tier 2 areas and 6 months in Tier 3 areas. For notifications identified within AOCs, they are further prioritized by risk, with the highest risk notifications requiring remediation prior to that year's summer or fall wildfire season. Table VI-19 shows the type of P1 and P2 equipment repairs/replacements that were completed in 2024, segmented by capital and O&M scope.

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[48] This section covers multiple sub-activities that entail substantively similar work. Some program costs were recorded in historical program accounts as SCE transitioned old accounting into newer accounting cost centers. And other program costs, such as AOC, involved doing the same type of work in a different program.

***Table VI-19***
***Most Common Types of Capital and***
***O&M Distribution Remediations Completed in 2024***

| Capital Remediations | 2024 Volume |
|---|---|
| Replace Structure | 2,664 |
| Replace Cable/Conductor | 1,248 |
| Replace Lightning Arrestor | 675 |
| Replace Avian Protection | 188 |
| Replace Guy/Anchor | 177 |
| Replace Hardware | 164 |
| Replace Cutout/Fuse | 118 |
| Replace Crossarm | 10 |
| Other | 265 |
| Total | 5,509 |

| O&M Remediation | 2024 Volume |
|---|---|
| Replace Avian Protection | 6,729 |
| Replace Hardware | 5,153 |
| Replace Guy/Anchor | 4,343 |
| Replace Cable/Conductor | 3,675 |
| Replace Structure | 2,933 |
| Replace Insulator | 2,804 |
| Repair Crossarm | 1,121 |
| Other | 2,432 |
| Total | 29,190 |

SCE has a long-standing and well-established practice of bundling work where appropriate. In 2024, SCE continued to bundle work at the structure and circuit segment levels to the extent feasible for economic efficiency and to minimize the impact of remediation work on customers, as well as to reduce the volume of repeat outages, road closures and traffic restrictions. In certain cases, this resulted in future-year scope being accelerated and completed in 2024. SCE is completing work at the same structure or near-adjacent structure at one time, as opposed to making multiple trips at different times to complete the work, which results in lower costs. The Commission has endorsed this practice, stating: “We do not take issue with SCE bundling this work with higher priority notification where it is

efficient and cost-effective to do so."[49] Completing work on the same physical structure or near-adjacent structure on the same circuit is optimal from an efficiency and cost effectiveness standpoint, as the work is essentially completed in "one job" or "one trip" as opposed to multiple jobs or trips. Table VI-20 below shows the distribution Priority 3 remediation units completed in 2024 for standalone (unbundled) and bundled scenarios.

***Table VI-20***
***Priority 3 Notifications (P3) Completed in 2024***
***for Distribution Remediation Units***

| | Capital | O&M | Total |
|---|---|---|---|
| P3 Completed in 2024 | 1,489 | 4,950 | 6,439 |

SCE's Long Span Initiative is a program that addresses increased risk of conductor clash in high wind conditions associated with distribution conductor spans of a certain length, spans with mixed conductor, spans that have a sharp angle, or spans that transition between vertical and horizontal configuration. In 2020, SCE began using LiDAR on its distribution long spans to identify locations with potential conductor clash issues and planned to remediate the highest risk locations upon field validation. In 2022, SCE enhanced its risk methodology and prioritization by incorporating the IWMS and developing a risk analysis that considers LiDAR measurements, conductor PIO, and wind-related features to better target conductor clash scenarios. Long spans that are at high risk for conductor clashing and that fall within locations that are largely consequential in the case of an ignition are prioritized for remediation. The type of remediation selected is determined by the specific details of each span and the corresponding field conditions. This initiative includes three types of remediations that are carried out with the purpose of reducing conductor clashing risks from long spans: (1) Line spacers – insulated equipment that separates the lines to reduce the possibility of wire-to-wire contact. It is the preferred remediation type due to the speed of deployment and its effectiveness against clashing. They are utilized during instances where there is bucket truck accessibility, (2) Alternate Construction – this

[49] *See* D.22-06-032 at p. 40 (regarding P3s).

includes ridge pin, box construction, wider crossarms, and interest poles. These construction configurations increase phase spacing or reduce sag, which minimizes the probability of wire-to-wire contact. This type of remediation is typically utilized when there is no bucket truck accessibility for line spacers, and (3) Covered Conductor – the wire ensures that the lines are protected if clashing occurs. Covered conductor will be installed in instances where there is no bucket truck access and either a 3-wire span is underbuilt, or a 4-wire span does not have sufficient space for box construction.

**b) Spending on Distribution Remediations Was Reasonable**

In 2024, SCE performed approximately 5,509 capital distribution remediations at a total cost of $99.249 million, and approximately 29,190 O&M distribution remediations at a total cost of $58.293 million. As discussed in the previous section, based on improvements in risk modeling, SCE significantly increased the volume of distribution aerial and ground inspections relative to its spending in 2021. This led to a corresponding increase in findings and remediation volume, which in turn increased total costs. SCE also improved and expanded the scope of distribution inspections. For example, the ground inspection survey, featured approximately 155 inspection items and question elements in 2021, which was subsequently updated to approximately 195 inspection items and question elements in July 2023, which has continued to be used in 2024. Put simply, SCE is inspecting more often and looking for a greater extent of issues, both of which have led to a substantial increase in findings and the resulting remediation costs.

Performing more remediations than prior years was reasonable because remediations were required pursuant to CPUC General Orders and leaving them unrepaired could increase the risk of wildfire. Further, the inspection findings were validated by SCE's rigorous QA/QC process, which checks and evaluates the results of its distribution inspection findings. In 2024, SCE's QA/QC team sampled 2,473 results from distribution inspections in HFRA and found a conformance rate of 95.2%.

In addition to the increase in remediation volume, increased costs in labor rates and materials have contributed to higher costs per remediation, particularly with capital remediations

(the largest share of which are replacements of conductor and/or replacement of lightning arrestors). Factors such as inflation, supply chain constraints, tight labor markets with associated rate increases, and raw material costs have all increased costs in significant and unanticipated ways since 2021. SCE mitigated these increases to the extent that it could through its procurement process, which utilizes competitive bidding, among other tools, to secure materials at a reasonable cost.

In sum, SCE's distribution remediation costs were reasonable because they resulted from a mature and risk-informed inspection program, were validated by a rigorous QA/QC program, and were performed at an appropriate cost based on competitive procurement and labor practices.

SCE's spending on Long Span remediations was reasonable because it addressed potential wire-to-wire contact, thereby reducing wildfire risk and potential ignition events during high wind conditions. SCE aimed to reduce wildfire ignition risk on distribution circuits over a certain length, spans with mixed conductor, sharp angles, or transitions between vertical and horizontal configurations. This was achieved through the deployment of line spacers, alternate construction methodologies (including ridge pin, box construction, wider crossarms, and interset poles), or covered conductor.

The risk prioritization methodology to determine LSI scope has been updated using the IWMS risk analysis. This new methodology considers spans in severe risk and high consequence areas and uses the LSI risk model to determine the probability of wire-to-wire contact. For example, a span with a high probability of wire-to-wire contact in a Severe Risk Area would be prioritized over a span outside of a Severe Risk Area. SCE completed conductor blow-out studies to evaluate risk factors and determine worst-case conditions that could lead to wire-to-wire contact on over-sagged conductors. In 2019, SCE used ground inspection findings to determine the probability of a wire-to-wire contact causing an ignition by evaluating conductor type and span length. After completing ground inspections in 2019, SCE improved its risk-informed capabilities and analyses. In 2020, SCE began using Light Detection and Ranging (LiDAR) on its distribution long spans to identify locations with potential issues and planned to remediate the highest risk locations upon field validation. SCE selected the LSI Remediation program due to the speed of deployment for line spacer installation and its

effectiveness against wire-to-wire contact. Additionally, LSI has a relatively high risk spend efficiency (RSE) compared to other mitigation programs. Alternatively, LSI remediation can be performed during the installation of covered conductor. However, a more proactive and quicker approach is warranted, given the risk associated with wire-to-wire contact, especially during extreme wind events. In 2024, over 90% of LSI remediations were line spacers, the most cost effective and quickest LSI remediation available. SCE employs work bundling to drive efficiencies and lower costs. When LSI work is bundled with other types of work, it may not qualify for wildfire-related cost recovery in the LSI work activity and will instead be accounted for through other programmatic work.

**4. Distribution Inspections[50]**

**a) Overview**

This section discusses multiple sub-activities including the HFRA 360 Program, Aerial Inspections, HFRA 360 Program AOC, HFRI Inspections for Distributions, Overhead Detail Inspections and Annual Grid Patrol. SCE performs ground-based inspections to help detect equipment or structure conditions that are difficult to identify via aerial inspections (e.g., the condition of guy anchors). Additionally, SCE conducts aerial detailed visual inspections via helicopter or drone in HFRA to supplement ground-based inspections and identify deterioration or unfavorable asset conditions that are not clearly visible from the ground, (e.g., damaged pole top). SCE carries out ignition-focused risk inspections in HFRA (High Fire Risk-Informed inspections or HFRI inspections) to identify equipment or structural degradation that may occur between compliance cycles and could pose potential ignition risks (formerly Overhead Detailed Inspections (EOI)). Most of SCE's distribution HFRI inspections involve performing both ground and aerial inspections during the same visit, known as "360 inspections." Following the initial implementation of this approach in 2023 and continuing in 2024, SCE expanded the use of 360 inspections for its distribution overhead facilities in HFRA. In addition, SCE performs Annual Grid Patrol (AGP) to identify anomalies through visual assessments conducted via

[50] This section covers multiple sub-activities that entail substantively similar work. Some program costs were recorded in historical program accounts as SCE transitioned old accounting into newer accounting cost centers. And other program costs, such as AOC, involved doing the same type of work in a different program.

driving patrols. While similar in execution to HFRI inspections, AGP is scoped and scheduled separately.

GO 165 sets the minimum internals for inspecting distribution and transmission facilities and mandates that utilities conduct more frequent inspections as needed to ensure reliable, high-quality, and safe operation.[51] SCE goes beyond these requirements by conducting HFRI inspections of each structure within HFRA at least once every three years, surpassing the GO 165 standard of once every five years. Due to varying risk levels across SCE's HFRA, structures are prioritized for inspection based on Probability of Ignition (PO) and consequence.

In 2024, SCE conducted 208,828 distribution ground inspections and 206,903 distribution aerial inspections as part of its HFRI program.[52] Additionally, SCE conducted AOC inspections on 34,333 distribution structures. The total O&M expenses for these inspections amounted to $36.731 million, which was recorded under both existing and legacy program accounts.[53]

**b) Spending on Distribution Inspections Was Reasonable**

SCE's 2024 expenditure on distribution inspections in HFRA is reasonable due to the risk-informed approach that was part of the approved 2023-2025 WMP. To determine the scope of the 2024 Distribution HFRI inspections, SCE utilized the locational risk categorization from its Integrated Wildfire Mitigation Strategy (IWMS) Risk Framework[54] and incorporated the latest risk modeling techniques. The year 2023 marked the first time SCE applied its IWMS Risk Framework for inspection scope, having initially used it for grid hardening mitigation selection starting in 2022. This

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[51] GO 165, Section III.B Standards for Inspection. *See* workpaper submitted in this proceeding.

[52] The 360 program aims to complete aerial and ground inspections at the same visit, but SCE still considers each inspection as unique. For example, an aerial and ground inspection performed at a pole on the same day would be counted as one ground inspection and one aerial inspection.

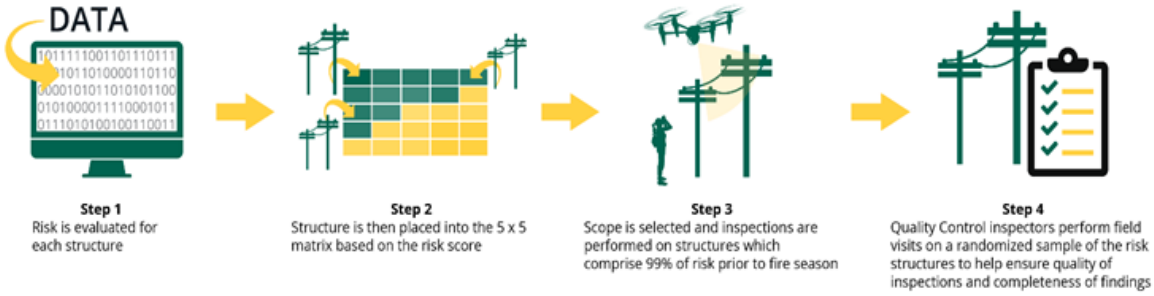
[53] Includes cost for the following sub-activities – HFRA 360 Program – D, Aerial Inspections – D, Overhead Detail Inspections, HFRA 360 Program – D AOC, AOC Inspections – D.

[54] SCE's IWMS Risk Framework was presented in its 2023-2025 WMP, which was evaluated and approved by OEIS. The IWMS Risk Framework is based on SCE's Integrated Grid Hardening Strategy (IGHS), which was introduced in SCE's 2022 WMP, which was also evaluated and approved by OEIS. *See* workpaper submitted in this proceeding: 2023-2025 Wildfire Mitigation Plan, section 6.

represented a significant advancement in SCE's ongoing development of its risk-informed strategy and the alignment of risk methodology across inspection programs and grid hardening activities.

Figure VI-3 outlines the process SCE utilized to incorporate risk through its inspection scoping procedures. SCE also preserved an appropriate reserve capacity needed for resources to perform in emergent Areas of Concern (AOCs).

***Figure VI-3***
Evaluation of Risk for Distribution

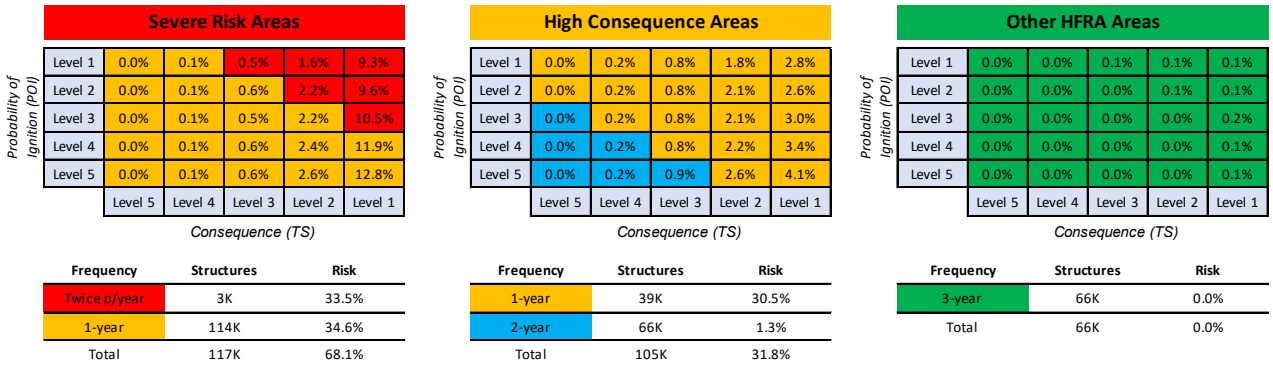



Structures located in the Severe Risk Area (SRA) and High Consequence Area (HCA) IWMS tranches that are identified as the highest risk within their respective 5x5 matrix are subject to more frequent inspections. This is depicted in Figure VI-3. Each 5x5 matrix in the figure represents the segment of the structure population within the specific IWMS tranche (i.e., SRA, HCA, or Other HFRA). The percentages within each cell indicate the proportion of total risk associated with the structures in that segment.

Figure VI-4 illustrates that the combined risk from all three tranches makes up nearly 100% of the distribution asset risk in SCE's HFRA, with 68.1% attributed to SRA, 31.8% to HCA, and 0.0% to Other HFRA. For instance, the cell representing the SRA tranche with Level 1 POI and Level 1 Consequence accounts for 9.3% of the total distribution structure risk. The red color in this cell signifies that these structures are inspected twice a year.[55]

[55] Risk as measured by multiplying probability of ignition by wildfire consequence risk score. The same 99% risk coverage applies to SCE's Transmission Detailed Inspections.

***Figure VI-4***
***Visualization of Risk Analysis for Distribution***



**Severe Risk Areas**

| Probability of Ignition (POI) | Level 5 | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|---|---|
| Level 1 | 0.0% | 0.1% | 0.5% | 1.6% | 9.3% |
| Level 2 | 0.0% | 0.1% | 0.6% | 2.2% | 9.6% |
| Level 3 | 0.0% | 0.1% | 0.5% | 2.2% | 10.5% |
| Level 4 | 0.0% | 0.1% | 0.6% | 2.4% | 11.9% |
| Level 5 | 0.0% | 0.1% | 0.6% | 2.6% | 12.8% |

*Consequence (TS)*

| Frequency | Structures | Risk |
|---|---|---|
| Twice p/year | 3K | 33.5% |
| 1-year | 114K | 34.6% |
| Total | 117K | 68.1% |

**High Consequence Areas**

| Probability of Ignition (POI) | Level 5 | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|---|---|
| Level 1 | 0.0% | 0.2% | 0.8% | 1.8% | 2.8% |
| Level 2 | 0.0% | 0.2% | 0.8% | 2.1% | 2.6% |
| Level 3 | 0.0% | 0.2% | 0.8% | 2.1% | 3.0% |
| Level 4 | 0.0% | 0.2% | 0.8% | 2.2% | 3.4% |
| Level 5 | 0.0% | 0.2% | 0.9% | 2.6% | 4.1% |

*Consequence (TS)*

| Frequency | Structures | Risk |
|---|---|---|
| 1-year | 39K | 30.5% |
| 2-year | 66K | 1.3% |
| Total | 105K | 31.8% |

**Other HFRA Areas**

| Probability of Ignition (POI) | Level 5 | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|---|---|
| Level 1 | 0.0% | 0.0% | 0.1% | 0.1% | 0.1% |
| Level 2 | 0.0% | 0.0% | 0.0% | 0.1% | 0.1% |
| Level 3 | 0.0% | 0.0% | 0.0% | 0.0% | 0.2% |
| Level 4 | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% |
| Level 5 | 0.0% | 0.0% | 0.0% | 0.0% | 0.1% |

*Consequence (TS)*

| Frequency | Structures | Risk |
|---|---|---|
| 3-year | 66K | 0.0% |
| Total | 66K | 0.0% |

SCE identifies Areas of Concern (AOCs) within HFRA based on the current year's conditions. These AOCs are regions that pose heightened fire risks due to fuel-driven factors in the summer and wind-driven factors in the fall. The identification of AOCs is based on various elements such as historical fire data, current and short-term weather conditions, type of fuel, wind exposure, and egress routes. To mitigate potential risks in these areas, SCE implements a comprehensive action plan that includes asset inspections (covering distribution, transmission, and generation) and prioritizes remediation for assets with the highest risk. Additionally, SCE updates its AOCs strategy annually, incorporating lessons learned to enhance the efficiency of the action plan before the peak fire season. The frequency is also affected by these AOCs.

In calendar year 2021, SCE's program was based on a two-year cycle, inspecting roughly half of the High Fire Risk Areas (HFRA) each year.[56] Although this approach was reasonable at the time, subsequent enhancements in SCE's risk analysis revealed that a bi-annual inspection frequency would not reduce enough risk. Consequently, more structures needed to be inspected annually or, in some instances, multiple times per year. Therefore, the inspection volume in 2024, despite significantly exceeding the forecasted amount, was reasonable. SCE's 2024 expenses surpassed 2021 recorded costs due to conducting approximately 11% more ground inspections and 15% more aerial inspections than

[56] 2021 GRC, SCE-04, Vol. 5, pp. 54-55. *See* workpaper submitted in this proceeding.

initially anticipated.[57] Further, subsequent increases in labor rates and the cost of aerial inspection services significantly raised SCE's expenses, compared to those recorded in 2021 (which formed the basis for SCE's Track 4 forecast for 2024). In 2024, SCE completed approximately 204,828 distribution ground inspections, representing an 11% increase compared to the 2021 actual recorded of 184,900 ground inspections. SCE completed approximately 206,903 distribution aerial inspections, representing a 15% increase compared to the 2021 actual recorded of 180,300 aerial inspections.

SCE's current approach to risk-informed inspection scope and frequency represents several years of rapid learning and advancement, and SCE does not consider it realistic or appropriate to revert to a compliance-based approach or to, otherwise, reduce its current inspection cycles. Additionally, the roughly 288,000 distribution structures in SCE's High Fire Risk Areas (HFRA) will degrade over time, necessitating active and frequent monitoring to prevent failures that could lead to ignitions and catastrophic wildfires.

**5. Transmission Aerial Inspections**

**a) Overview**

Transmission aerial inspections, much like SCE's distribution inspection programs, offer a unique perspective on utility assets that ground inspections cannot provide. These aerial inspections are essential and complement ground inspections by identifying existing or potential issues that could pose wildfire ignition risks. SCE's approach to the scope and frequency of transmission aerial inspections aligns with the IWMS Risk Framework methodology previously used for determining distribution HFRI inspection scope. In 2024, SCE conducted aerial inspections on 30,729 transmission structures, incurring a total cost of $13.331 million in O&M expenses.

**b) Spending on Transmission Aerial Inspections Was Reasonable**

The expenditure on transmission aerial inspections by SCE was justified as it is essential to inspect transmission assets to mitigate wildfire risk. SCE employed a sophisticated and

[57] In 2024, SCE completed approximately 204,828 distribution ground inspections, representing a 11% increase compared to the 2021 GRC actual of 184,900 ground inspections. SCE completed approximately 206,903 distribution aerial inspections, representing a 15% increase compared to the 2021 GRC actual of 180,300 aerial inspections.

advanced risk methodology to determine the frequency and scope of these inspections. Ground inspections alone are insufficient to fully identify potential wildfire risk issues in transmission assets, as they lack the visual perspective that aerial inspections provide.

Moreover, it was reasonable for SCE to spend more on transmission aerial inspections than SCE's Track 4 forecast for 2024, which was based on SCE's 2021 recorded costs. SCE has gained significant experience in operating an aerial transmission inspection program. Aerial inspections are labor-intensive and require specialized, licensed expertise to operate drones, helicopters, and planes. Additionally, the forecasts developed for Track 4, in May 2022, based on 2021 recorded costs did not account for the rapid increases in labor costs and specialized services due to supply chain issues and inflation.

SCE has diligently worked to control aerial inspection costs by employing competitive procurement and labor practices. This includes implementing new aerial contract rates in 2022, which resulted in an approximate 61% reduction in total program costs compared to previous rates. Relying solely on ground-based inspections, as an alternative to aerial inspections, would limit visibility to certain conditions, as previously mentioned.

**6. HFRI Inspections and AOC Inspections – Transmission**

**a) Overview**

Transmission ground inspections provide a unique perspective on utility assets that aerial inspections alone cannot offer. These inspections are crucial as they complement ground inspections by identifying existing or potential issues that could pose wildfire ignition risks. SCE's approach to the scope and frequency of transmission ground inspections aligns with the IWMS Risk Framework methodology previously used for distribution HFRI inspection scope. In 2024, SCE conducted ground inspections on 31,708 transmission structures, incurring a total cost of $2.736 million in O&M expenses.

In 2020 and continuing into 2021, in response to evolving conditions, SCE introduced a new inspection scoping methodology called Areas of Concern (AOC). AOCs are specific geographic areas that are marked by environmental and asset conditions that increase wildfire risk in a

certain area, such as an abundance of dry fuel and exposure to high winds. In 2021, SCE expanded on the AOC mitigation efforts by including both summer and fall AOC-specific inspection regimens. In addition, SCE now incorporates and coordinates AOC inspections with our overall holistic asset inspection cadence. Generally, summer AOC inspections prescribe detailed inspection of transmission assets in areas with a higher risk of fires driven by dry fuels and fall AOC inspections target transmission assets with high wind exposure. In 2024, SCE conducted AOC inspections on 3,302 transmission structures.

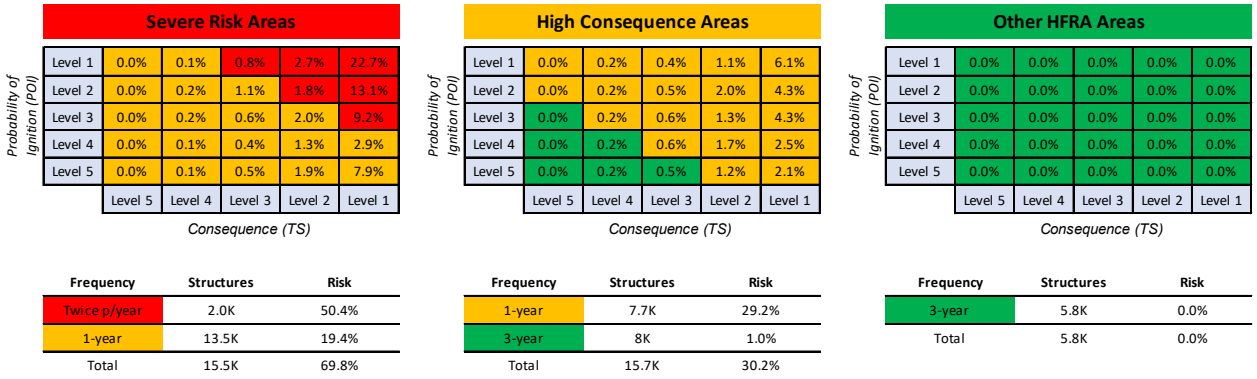
**b) Spending on HFRI and AOC Inspections – Transmission Was Reasonable**

SCE's expenditure on transmission ground inspections was justified due to the necessity of inspecting transmission assets to mitigate wildfire risk. Utilizing a sophisticated and advanced risk methodology, SCE determined the frequency and scope of these inspections. It was recognized that aerial inspections alone are inadequate for fully identifying potential wildfire risk issues in transmission assets, as they lack the visual perspective provided and vice versa.

Similar to distribution, Figure VI-5 illustrates that the combined risk from all three tranches makes up nearly 100% of the transmission asset risk in SCE's HFRA, with 69.8% attributed to SRA, 30.2% to HCA, and 0.0% to Other HFRA. For instance, the cell representing the SRA tranche with Level 1 POI and Level 1 Consequence accounts for 22.7% of the total transmission structure risk. The red color in this cell signifies that these structures are inspected twice a year.[58]

[58] Risk as measured by multiplying probability of ignition by wildfire consequence risk score. The same 99% risk coverage applies to SCE's Distribution Detailed Inspections.

***Figure VI-5***
***Visualization of Risk Analysis for Transmission***



**Severe Risk Areas**

| Probability of Ignition (POI) | Level 5 | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|---|---|
| Level 1 | 0.0% | 0.1% | 0.8% | 2.7% | 22.7% |
| Level 2 | 0.0% | 0.2% | 1.1% | 1.8% | 13.1% |
| Level 3 | 0.0% | 0.2% | 0.6% | 2.0% | 9.2% |
| Level 4 | 0.0% | 0.1% | 0.4% | 1.3% | 2.9% |
| Level 5 | 0.0% | 0.1% | 0.5% | 1.9% | 7.9% |

*Consequence (TS)*

| Frequency | Structures | Risk |
|---|---|---|
| Twice p/year | 2.0K | 50.4% |
| 1-year | 13.5K | 19.4% |
| Total | 15.5K | 69.8% |

**High Consequence Areas**

| Probability of Ignition (POI) | Level 5 | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|---|---|
| Level 1 | 0.0% | 0.2% | 0.4% | 1.1% | 6.1% |
| Level 2 | 0.0% | 0.2% | 0.5% | 2.0% | 4.3% |
| Level 3 | 0.0% | 0.2% | 0.6% | 1.3% | 4.3% |
| Level 4 | 0.0% | 0.2% | 0.6% | 1.7% | 2.5% |
| Level 5 | 0.0% | 0.2% | 0.5% | 1.2% | 2.1% |

*Consequence (TS)*

| Frequency | Structures | Risk |
|---|---|---|
| 1-year | 7.7K | 29.2% |
| 3-year | 8K | 1.0% |
| Total | 15.7K | 30.2% |

**Other HFRA Areas**

| Probability of Ignition (POI) | Level 5 | Level 4 | Level 3 | Level 2 | Level 1 |
|---|---|---|---|---|---|
| Level 1 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Level 2 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Level 3 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Level 4 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Level 5 | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

*Consequence (TS)*

| Frequency | Structures | Risk |
|---|---|---|
| 3-year | 5.8K | 0.0% |
| Total | 5.8K | 0.0% |

As discussed above, SCE's Track 4 forecast for 2024 costs was based on 2021 recorded costs. In 2021, the transmission ground inspection program was still evolving alongside SCE's risk methodology. Over the years, SCE has made significant progress and advancements in its risk-informed inspection scope and frequency. Like the distribution system, SCE believes it is neither realistic nor appropriate to revert to a compliance-based approach or reduce its current inspection cycles. Furthermore, the approximately 36,000 transmission structures in SCE's HFRA will deteriorate over time, requiring continuous and frequent monitoring to prevent failures that could lead to ignitions and catastrophic wildfires.

## 7. Technology Solutions

### a) Overview

In 2024, SCE completed the development of activities to begin a phased, full-scale deployment of Arbora. By the end of 2024, the rollout and the transition of routine and hazard tree inspections and mitigations to Arbora were completed. SCE also developed, implemented, and deployed non-routine work capabilities for Vegetation Management. SCE recorded capital expenditures for the build work, including costs for SCE labor, supplemental workers, consultants, and software[59].

[59] SCE labor represents the internal labor costs for the development and management of additional capabilities for the Vegetation Management Technology Solutions activities. Vendor contract costs reflect the anticipated vendor development labor, support resources, and Salesforce platform specialists.

In addition, in 2024, SCE recorded O&M expenses to support licensing fees and subscriptions, as well as required operational maintenance and support for implemented capabilities. Licensing fees and subscriptions include the application and platform licenses associated with Arbora. Operational maintenance and support costs include labor costs related to ongoing maintenance, end user training development, and field support services.

**b) Spending on Technology Solutions Was Reasonable**

In total, SCE recorded $2.147 million in O&M expenses and $7.551 million in capital expenditures for this sub-activity in 2024. SCE's spending in Technology Solutions was reasonable as Arbora is SCE's core solution that is leveraged for field inspections and trim prescriptions, and reporting for vegetation management. Enhancements to the tool are deemed reasonable as these capabilities ensure SCE can effectively perform vegetation management (i.e., routine, non-routine, and hazard tree)[60] to mitigate wildfire risk and meet compliance objectives. Also, Arbora supports SCE's wildfire risk objectives for vegetation management in alignment with its approved 2024 WMP.[61] Finally, Arbora is enabling integrated reporting across vegetation management.

The Commission has recognized the reasonableness of SCE's investments in Arbora. In Track 4 of the 2021 GRC, the Commission authorized amounts for vegetation management, including costs for Arbora, as confirmed in D.23-11-096. Further, in D.24-03-008, the Commission approved incremental costs for vegetation management in 2021, including approximately $11 million in capital expenditures and $0.63 million in O&M expenses related to Arbora.

In 2024, Arbora was able to perform all core inspection programs for vegetation management, including Routine Line Clearing inspections, cycle buster inspections, Hazard Tree inspections, Dead & Dying tree inspections and quality control inspections. Arbora was able to fully implement these use cases and continues to enhance the tool.

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[60] Arbora uses the Salesforce platform, which is currently utilized by other utility companies for work management and integrated reporting for various business areas.

[61] For 2024, SCE met its WMP wildfire risk mitigation Vegetation Management Work Management Tool (Arbora) target of monitoring stabilization of Arbora and develop plan and begin execution of plan to enable additional VM maintenance programs.

## 8. Data Platform and Governance

### a) Overview

Data Platform and Governance consists of three technology solutions: (1) EzyData Platform, (2) WiSDM (Wildfire Safety Data Management), and (3) DRTViewer. These solutions allow SCE to store and process significant volumes of data collected from wildfire-driven inspections to drive operational decisions and risk mitigations, as well as consolidate and organize wildfire data necessary for mandatory quarterly data reporting to OEIS.

The EzyData solution implemented on the Google Cloud Platform (GCP) consolidates sensory data from asset and vegetation inspections and integrates with other SCE systems such as InspectForce and SCE's core Enterprise Resource Planning (ERP) System, SAP. Other projects also used the EzyData solution, including aerial LiDAR Data Integration, which transferred historical LiDAR program source data to the GCP.

The WiSDM project was implemented in 2023 and continued to stabilize through the end of the year. As of 2024, WiSDM continues to be used for compiling and creating the Quarterly Data Report (QDR) submitted to CalOEIS and is enhanced as necessary to maintain compliance with any published changes and updates to OEIS data guidelines.

The Data Remediation Tool (DRT) Viewer analyzes field inspection photos to enhance the location accuracy of structural asset mapping. It assesses the quality of location metadata, identifies structure locations, recommends mapping corrections, and organizes asset location data for easy review and auditability. In 2024, the project transitioned into the production environment, integrating diverse photo data sources into the EzyData Google Cloud Platform.

In 2024, SCE incurred capital expenditures for Data Platform and Governance that included the license, infrastructure, consumption and subscription costs incurred during development, stabilization, and the operationalization of the products. Costs also include SCE labor and contract labor for project and program management, architecture support, development, testing, and deployment. O&M expenditures include license fees, ongoing cloud consumption costs, and data storage.

**b) Spending on Data Platform and Governance Was Reasonable**

In total, SCE recorded $2.136 million for O&M and $2.093 million in capital expenditures for this sub-activity in 2024. In alignment with previous filings, SCE's spending for Data Platform and Governance was reasonable because it was required to meet the expansive wildfire data and reporting requirements that OEIS issued in 2022.[62] Again, as discussed above, SCE's Track 4 forecast for 2024 was based on 2021 recorded costs, which did not account for the more expansive OEIS requirements, which were issued in 2022. The WiSDM project enabled SCE to centralize and manage approximately 40 million unique wildfire data reporting values that OEIS requires from SCE on a quarterly basis. This level of wildfire data centralization and reporting was an unprecedented activity for SCE that could not be realistically fulfilled via previous means of manual data extraction for the purpose of reporting via Excel spreadsheets. These solutions fulfill OEIS' expectations for continued maturity in wildfire data WiSDM management through its portal access for external parties. SCE's costs in 2024 on both EzyData and WiSDM reflect these expectations. SCE selected a cloud-based platform over an on-premises solution due to its greater efficiency, scalability, and adaptability to growing and increasingly complex inspection data needs.

SCE's asset and vegetation management inspection strategy has expanded and grown significantly since 2021. SCE has since included robust imagery and unique data points to better inform repairs and enhance asset information. In 2024, this included over 488,900 inspections which generated massive volumes of imagery, videos, and LiDAR data. This data, which measures in the petabytes (1 petabyte = 1,000,000 gigabytes), cannot be stored, managed, and analyzed using SCE's historical data-processing solutions, which prompted the creation of the EzyData Google Cloud Platform. This platform has demonstrated its scalability with the inclusion of asset inspection data from DRT Viewer.

[62] OEIS, Data Guidelines v3.0, December 15, 2022. *See* workpaper submitted in this proceeding.

### 9. Transmission HFRI and AOC Repairs and Replacements

#### a) Overview

The purpose of transmission inspections is to identify existing or potential transmission asset issues that, if left unaddressed, could lead to potential ignitions and wildfires. As such, the volume and nature of SCE's work and costs to remediate transmission asset issues directly results from inspection program scope, volume, and frequency.

Remediations are treated as either capital expenditures or O&M expenses. In 2024, SCE performed 1277 (972 P2; 305 P3) transmission O&M remediations (including AOC) at a total cost of $4.712 million, and 314 (306 P2; 8 P3) transmission capital remediations at a total cost of $16.729 million.

Most of the capital remediations were pole replacements (found during HFRI inspections) generally due to rotting and/or aging, avian damage caused by woodpeckers, or excessive bowing, splitting, or twisting. Other equipment replacement can include the new/reinforced towers, conductor replacement, and the replacement of equipment on the structure (e.g., switches). O&M remediations include the repair of electrical structures/equipment, and the replacement of relatively minor items, such as insulators, crossarms, or guys.

O&M remediation costs also include environmental evaluation and permitting costs related to structure brushing, which resulted from risk-informed inspections and not the vegetation management program work required by city or county fire codes or pursuant to Public Resources Code section 4292.

#### b) Spending on Transmission HFRI and AOC Repairs and Replacements Was Reasonable

In 2024, SCE recorded O&M expenses of $4.712 million and capital expenditures of $16.729 million for the Transmission HFRI and AOC Repairs and Replacement sub-activities. SCE's spending on HFRI transmission remediations was reasonable because SCE's actions to address the results of its findings directly reduce wildfire risk by eliminating issues that, if left unaddressed, could result in ignitions. SCE's transmission inspection programs in 2024 represented a mature state of

operation with several years of continued improvement in both the risk methodology supporting transmission inspections, and in the operational practices of the inspections and remediations themselves. The volume of capital remediations is generally aligned with SCE's volume in 2021, with an increase of approximately 7%. The volume of O&M remediations increased approximately 91% than the volume in 2021, primarily due to more inspection questions driving higher find rates, resulting from inspections. As with SCE's distribution remediations, SCE's QA/QC team evaluates the results of transmission inspection findings. In 2024, the QA/QC team evaluated 427 transmission HFRI inspections and found a conformance rate of 100%.

As discussed above, SCE's Track 4 forecast for 2024 costs was based on SCE's 2021 recorded costs. For capital remediation, SCE's unit costs for repairs were higher than in 2021. This is primarily due to higher labor costs (both normal time and overtime rates), higher material costs, and higher allocations for B materials[63] and division overhead rates. For O&M remediation, SCE's unit costs for repairs were lower than in 2021. However, O&M costs are higher than in 2021 was due to the higher volumes as stated above. As with many other areas discussed in this Application, the economic conditions in May 2022, when SCE submitted its 2024 forecast based on 2021 recorded costs, were markedly different than the economic conditions in 2024, which have been influenced by supply chain issues and significant inflation.

**10. Technology Support Tools**

**a) Overview**

Technology Support Tools include four product lines: (1) InspectForce, (2) InspectApp, (3) Artificial Intelligence & Machine Learning models (AI/ML), and (4) Mobile Field Solutions. While the tools under the Data Platform and Governance sub-activity are focused on managing and utilizing data resulting from inspections and (in the case of WiSDM) other wildfire

[63] B materials are minor miscellaneous items used as part of remediation work activities, including cross arms, fuses, insulators, bolts, nuts, pins, etc. that are critical for safe repair and construction. These materials are not purchased directly for specific work orders the way larger assets (such as poles) are kept in lay down yards and other material supply stations. These B materials are used by crews as needed for assigned work. Because of the nature of B material, it is used in small amounts for thousands of active work orders associated with SCE's construction and maintenance activities.

activities, the Technology Support tools are used by SCE as operational tools to perform and manage inspections and any resulting work order notifications.

InspectForce is used by field personnel to perform aerial inspections for both distribution and transmission and ground inspections for transmission. It was first piloted in 2022 for transmission ground and aerial inspections and has been successfully used since then for each inspection cycle for both distribution (aerial) and transmission (aerial and ground) assets. InspectForce contains the survey forms and questions the inspector uses to assess the asset, electronically log responses, and capture data such as images. InspectForce integrates with source systems to pull in necessary information to complete surveys. In 2024, for InspectForce Transmission, SCE stabilized the tool and implemented routine enhancements. For InspectForce Distribution, SCE finalized the solutioning approach to migrate distribution ground inspections from InspectApp onto the common InspectForce platform. The InspectApp field data collection tool focuses on Distribution inspection surveys. In 2024, InspectApp continued with steady state operational support of the tool, including updating survey questions focused on risk mitigation and asset conditions. In addition, SCE continued to expand the development and the running of computer vision AI/ML models in support of inspections. These models detect the type of asset and the condition of the asset to improve the overall effectiveness of inspections and mitigate risks. SCE uses FMP360 as part of its operational planning and mobile field tool management for execution and closure of work orders resulting from wildfire-driven inspections. SCE completed implementation in 2023 and transitioned to steady state operations in 2024. SCE recorded O&M expenses and capital expenditures for the development and support of the InspectForce and InspectApp applications for aerial and ground inspection capabilities. Expenditures also included the development of AI/ML models and putting FMP360 in operations.

**b) Spending on Technology Support Tools Was Reasonable**

In total, SCE recorded $4.931 million in O&M expenses and $8.850 million in capital expenditures for this sub-activity in 2024. SCE's spending on Technology Support Tools was reasonable because it was necessary to accommodate a major increase in the scope of inspections, beyond what was done in 2021. As discussed above, the Track 4 forecast for 2024 was based on

recorded 2021 costs. SCE's spend was reasonable as SCE balanced prioritization of key wildfire enhancements to legacy applications in order to control scope while designing and developing the InspectForce application (the long-term solution). These efforts ensure compliance with CPUC GO 165 compliance requirements. They also allow SCE to further mitigate challenges related to manual data entry and support improved planning and reporting of the inspections program as it transitions to one system.

SCE adopted InspectForce as a modern digital solution to handle the increased volume of inspections annually across aerial and ground programs in HFRA. The platform provides field personnel with consistent tools to perform inspections, capture findings and photos, and log data into systems like SAP, EzyData, and other enterprise platforms, ensuring seamless data integration and reporting. Designed for long-term use, InspectForce supports multiple inspection types, remediations, and future integration of AI and machine learning capabilities.

SCE evaluated various alternatives for managing its inspection programs but found that cloud-based "smart survey" tools lacked the robustness needed for the scale and complexity of their operations. For example, SCE's distribution ground program includes many conditional questions requiring significant logic in the survey tool. SCE selected InspectForce for its data capture and integration capabilities, which as noted above is based on the mature and tested Salesforce platform.

**11. Risk Spend Efficiency**

SCE developed RSEs for the following sub-activities:[64] HFRA 360 Program – D (3,645), Aerial and HFRI Inspections – T (77), HFRI Generation (6,959), and LSI (1,252). Although the RSEs for the transmission system-related mitigation sub-activities are lower than those associated with distribution system sub-activities due to most of the historical ignitions on SCE's system having occurred on its distribution overhead facilities, there is still significant wildfire risk from SCE's transmission system. Accordingly, SCE was reasonable in pursuing these initiatives that mitigate wildfire risk on SCE's transmission-level assets.

[64] Sub-activities that are substantively the same as these and combined in the preceding narrative are included in the RSEs for the respective comprehensive sub-activity.

SCE did not develop RSEs for the other sub-activities because they do not directly reduce the consequence or likelihood of wildfire or PSPS risk events. SCE executes them to enable current or future wildfire mitigation capabilities and/or to meet wildfire-related compliance requirements. Also, some sub-activities are too new and/or limited in scope to develop a meaningful RSE (e.g., High Risk Transition Spans).

## C. Aerial Suppression

### 1. Overview

#### a) Establishment and Operationalization of the Quick Reaction Force (QRF)

In 2019, SCE began exploring options for an initiative that mitigated the *consequences* of wildfires, after first focusing on initiatives that mitigated the risks of wildfires from igniting in the first place. As a result, SCE first executed an initial funding agreement with Orange County for limited aerial firefighting resources in mid-2019, after finalizing the preparation of its 2021 GRC. SCE continued the partnership in 2020. Based on the success of this initial partnership, in 2021, SCE partnered with the Fire Agencies of Los Angeles, Ventura, and Orange Counties (Fire Agencies) to fund the stand-by time of QRF aerial suppression resources to reduce wildfire risk to SCE's system, help protect SCE's infrastructure and communities, to bolster firefighting capabilities and to address the risks of quickly spreading wildfires, given limited aerial firefighting capabilities in the state.

To determine the exact parameters of the QRF following the initial limited partnership, SCE consulted with the Fire Agencies. The Fire Agencies informed SCE that the most effective suppression initiative must be an aerial-based suppression resource that could fight fires during the day and especially at night and be quickly deployed.[65] On high potential fire days, rapid response can make the difference between containing a fire or the fire causing significant public harm. The longer it takes resources to attack a fire immediately after it ignites, the less successful those resources will be in protecting SCE infrastructure and reducing public safety risk. As noted in Ventura County, Los Angeles County, and Orange County Fire Chiefs' letter to the President of the CPUC, "The intent of the

[65] *See* Workpaper "Aerial Firefighting Use and Effectiveness (AFUE) Report.pdf."

QRF is to mass overwhelming aerial *Wildfire Suppression Power* on initial attack and a massed, sustained attack into the first night of fires with high growth potential. Every large catastrophic wildfire starts small, and the QRF takes advantage of the '*golden window*' of opportunity to suppress the next megafire, day or night, before it even has a chance to grow. This aggressive initial attack of speed and force provides the Incident Commander maximum flexibility and success in early suppression operations."[66]

SCE relied on the expertise of the Fire Agencies that participate in the program to determine the type and number of aviation resources that would be necessary to make a significant change in suppressing wildfires in the high-risk environments that comprise a large portion of SCE's service area. Further, based on the advice of the Fire Agencies as well as its own internal expertise on what model is best for the company, SCE determined that a model where it entered into funding agreements with the three County Fire Agencies to fund the stand-by time for the fire suppression assets was a better option than purchasing the aircraft outright. This arrangement limits SCE's liability for the operation of the QRF, and makes more sense for SCE given the fact that usage and effectiveness would be limited versus providing funding directly to Fire Agencies with operational scope and authority to manage and operate this service. Only government agency-controlled aircraft are allowed to operate in the fire traffic area. At the same time, the Fire Agencies maintain the capability to move, position, and utilize established resources quickly and nimbly to meet existing and anticipated fire protection needs throughout the fifteen counties and beyond when the need is greatest.

**b) QRF Program and Cost Recovery History**

SCE provides funding for aerial suppression resources to reduce wildfire risk to the customers and communities it serves, and to protect SCE's equipment assets from damage. Multiple concurrent wildfires have stretched the pool of aerial firefighting assets, especially with night flying capabilities, available in SCE's service area at critical times. The limited availability of these suppression resources has increased the potential for wildfires to escape the initial attack stage and

[66] *See* Workpaper "Letter to President of the CPUC Regarding Proposed Decision for A.22-06-003".

become more destructive, putting SCE's customers, communities, and infrastructure at greater risk. To address this risk, and due to the limited availability of fire suppression resources available statewide, since 2019, SCE has partnered with local county firefighting agencies by providing funding to create a quick reaction force (QRF) of aerial firefighting resources to bolster firefighting capabilities. The helitankers that make up the QRF are three of the largest and most sophisticated firefighting helicopters in the world and are capable of fighting fires at night using water and/or fire retardant and have helitanker night vision capable cockpits and pilots qualified to fly them. Critically, night fire-fighting capabilities are limited in SCE's service area.[67]

Each year, SCE enters memorandums of understanding (MOUs) with the Los Angeles, Ventura, and Orange County Fire Agencies to fund these aerial suppression resources. Pursuant to the MOUs, SCE funded the fixed lease and stand-by time costs for the helicopters, and each fire agency paid for flight time, operational costs, and any other costs (i.e., all variable and non-stand-by costs) when the helicopters were used to fight fires. While it is SCE's understanding that the Fire Agencies are looking for alternative funding sources for the QRF, in 2024, those alternative sources were not available to ensure access to these critical fire-fighting resources.

SCE has successfully recovered the entirety of its aerial suppression costs for the years 2021, 2022 and 2023. For both 2021 and 2022 when QRF costs were challenged and the cost recovery proceeding was litigated to conclusion, the Commission approved SCE's request in its entirety.[68] For SCE's 2023 aerial suppression costs, SCE and intervening parties entered into a settlement agreement, which the Commission approved.[69] Despite the fact that the QRF costs were

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[67] *See* Bill Gabert, *Report shows use of four-helicopter Quick Reaction Force through the night limited final size of Route Fire,* October 2022; *available at* https://wildfiretoday.com/report-shows-use-of-four-helicopter-quick-reaction-force-through-the-night-limited-final-size-of-route-fire (accessed on December 4, 2025).

[68] D.24-03-008 Southern California Edison's Request to Recover 2021 Incremental Costs Related to Wildfire Mitigation and Vegetation Management, (A.22-06-003), pp. 36-42; and D.25-06-051 Southern California Edison's Request to Recover 2022 Incremental Wildfire Mitigation and Vegetation Management Costs, (A.23-10-001), pp. 44-48.

[69] D.25-06-017.

contested, the settlement agreement did not include any reductions to WMPMA costs, which is where SCE's QRF program costs were and are recorded.

Most recently, on September 18, 2025, the Commission approved SCE's entire forecast for year-round funding of the QRF program for 2025-2028 in SCE's 2025 GRC. The QRF costs approved in past cost recovery and rate setting proceedings (2021-2023), the costs included in this application for 2024, and the QRF amounts authorized in the 2025 GRC for 2025-2028 are shown below in Table VI-21.

***Table VI-21***
***QRF Program Annual Cost***
***Historical for 2021-2024 and Approved 2025 GRC Funding***
***($ in thousands)***

| Approved for Cost Recovery | | | Recorded | Approved GRC Forecast | | | |
|---|---|---|---|---|---|---|---|
| **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | **2028** |
| 17,550 | 18,200 | 34,675 | 36,059 | 35,000 | 35,000 | 35,000 | 35,000 |

*Note: Stand-by lease costs for 2021 and 2022 were for 165 days of QRF coverage; beginning in 2023 stand-by lease costs were for 365 days of QRF coverage.*

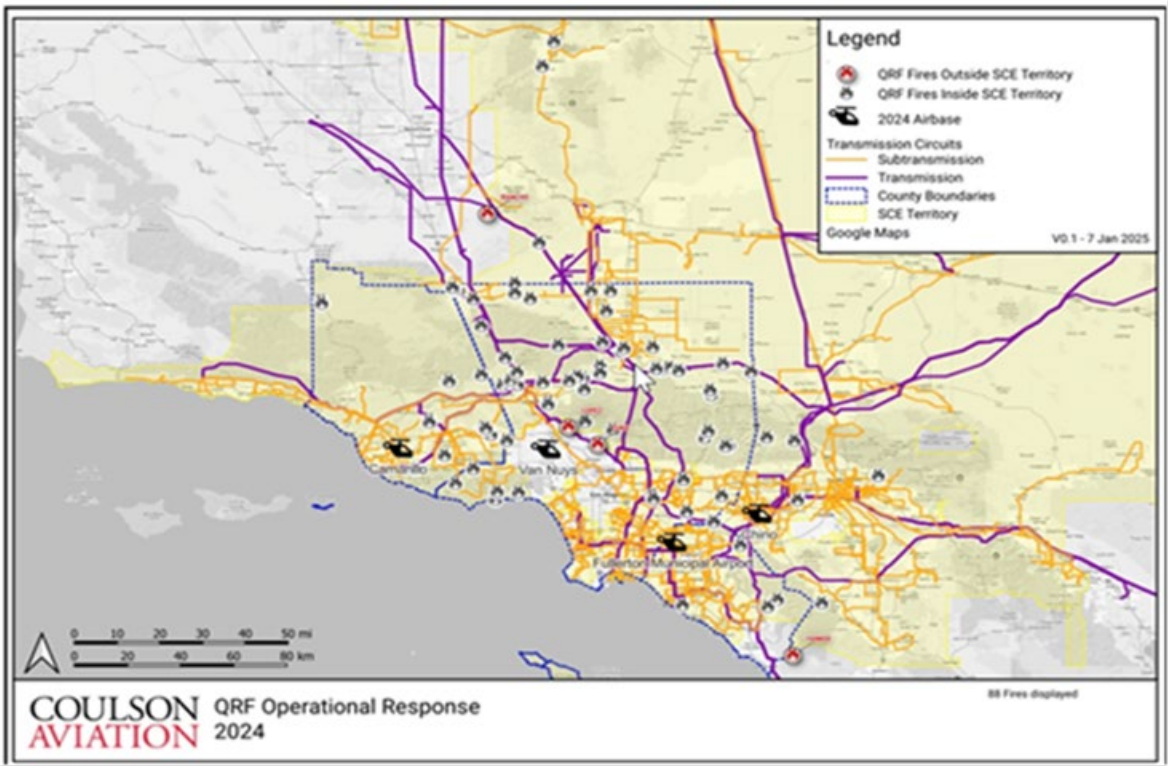
### 2. Operational Results in 2024

In 2024, the QRF responded to 86 unique fires within SCE's service area or in proximity to SCE's infrastructure.[70] 82 of the 86 fires were within SCE's service area; the other four of the 86 fires were less than 5 miles from SCE infrastructure and required QRF deployment to reduce the risk of the fires from spreading to SCE infrastructure. During 2024, the Bridge Fire, Line Fire, and Airport Fire were notable for their rapid growth due to long periods of hot, dry weather in early September 2024. The Mountain Fire and Franklin Fire occurred later in September, driven by dry conditions and multiple rounds of Santa Ana Winds. The severity and duration of these fires were influenced by weather events,

[70] In 2024, there were 88 QRF responses in response to the 86 fires; the Bridge and Line fires each required two phases of QRF response. *See* Workpaper "2024 List of QRF Response.pdf". With limited exceptions, SCE has no role in directing the operation or use of the helicopters and is not a party to the lease and the service agreement. Operational decisions regarding where and when the assets are used are at the discretion of the individual fire agencies and are prioritized and deployed by a regional fire coordination center, primarily within SCE's service area.

including downslope/offshore wind events that led to critical fire weather conditions.[71] Figure VI-6 shows each of these incidents on a map of SCE's service area.

***Figure VI-6***
***2024 QRF Incidents within SCE Service Area or Less Than 5 Miles from SCE Infrastructure***



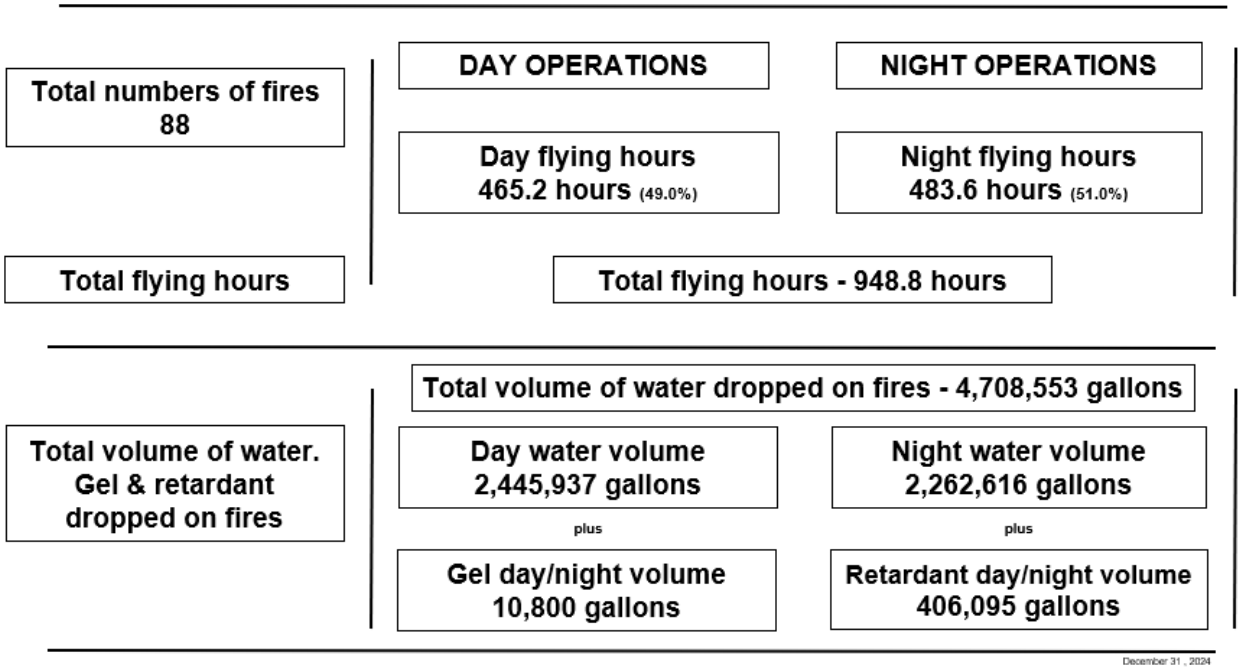

The QRF is composed of four aerial firefighting helicopters (three helitankers and one intelligence/reconnaissance aircraft), support personnel, and equipment to bolster firefighting capabilities.[72] These resources are capable of being rapidly deployed virtually anywhere in SCE's service area, either individually or as a fleet. The QRF includes one aircraft Helicopter Coordinator (HLCO) that coordinates with ground commanders and is essential to the nighttime firefighting capability of the QRF. The other three aircraft, referred to as helitankers, carry out water dropping and fire-retardant missions under the direction of the HLCO. The night firefighting capabilities of the QRF

[71] See Workpaper, "2024 QRF Large Fires and Acres Burned Final.pdf".

[72] See Workpaper "QRF-Operational Doctrine.pdf."

aerial resources is a game changer in mitigating the damage and gaining control over wildfires. Figure VI-7 below shows the 2024 QRF flying hours for day and night operations as well as the volume of water, gel and retardant dropped on fires.

***Figure VI-7***
***Quick Reaction Force (QRF) – 2024QRF Flying Hours and Water/Gel Volume Dropped***




### 3. QRF Program Costs for 2024

Just as it has for several years, in 2024 SCE partnered with Los Angeles, Ventura, and Orange Counties' Fire Agencies to fund the stand-by time of aerial suppression resources to reduce wildfire risk to SCE's system and help protect SCE's infrastructure and communities. SCE's QRF stand-by lease payment is a fixed cost. The Fire Agencies have separate contracts with the helicopter company (Coulson) to cover both the annual stand-by lease costs (SCE's cost responsibility) and helicopter deployment costs (Fire Agency cost).

Similar to 2023, SCE funded QRF coverage for the entire year in 2024 because of a) SCE's and the county fire departments' assessment that catastrophic fires were becoming more prevalent outside of the traditional fire season months, and b) the provider of the QRF asserting that, due

to competing international demand, the resources would no longer be available if only contracted for part of the year (as they had been in earlier years). In evaluating the expansion of the QRF from the previous years' 165-day contract period to year-round coverage, SCE reviewed fire history from 1992 to 2017 (based on data availability) of 300+ acre fires within SCE's service area to determine which months fires occurred.[73] The summary results were that there had been 782 such fires for a total 4,307,837 acres burned within the 165-day lease period, and 400 such fires for a total of 1,182,505 acres burned outside of the lease period. As such, SCE determined it was prudent to extend the funding for QRF stand-by costs for the entire year. The need for year-round QRF resources was confirmed by 2024 fires occurring outside of the 165-day period in 2024.[74]

Table VI-22, Table VI-23, and Table VI-24 below, show SCE's 2024 recorded $36.059 million in O&M expenses for the stand-by lease costs for year-round QRF coverage based on the MOUs with Ventura County, Los Angeles County, and Orange County Fire Agencies. The imputed GRC authorized amount is $16.228 million.[75] The difference of $19.831 million between the imputed 2024 GRC authorized versus recorded expenses was for the actual contractual costs incurred for 2024, which included the expansion of QRF coverage to year-round from the previous 165-day lease period.

[73] *See* Workpaper, "Ignition Counts and Acres Sum by Year_Month for 300+acre fires.pdf".

[74] Traditionally, California's wildfire season ran from August to November. With the increasing effects of climate change, California faces a year-round fire season. See Office of Governor, Governor Newsom and CAL FIRE Announce the End of Peak Wildfire Season for Most of California, November 17, 2022; available at https://www.gov.ca.gov/2022/11/17/governor-newsom-and-cal-fire-announce-the-end-of-peak-wildfire-season-for-most-of-california/ (accessed on September 4, 2025) - "While we've reached the end of peak fire season in a better position than recent years, wildfire season in California is year-round and we remain vigilant, focused on protecting lives and livelihoods."

[75] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

***Table VI-22***
***Aerial Suppression***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses***
***by GRC Activity and by Cost Reocvery Account[76]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Aerial Suppression | $ 16,228 | $ 36,059 | pp. 523, 556-557 |
| **TOTAL** | **$ 16,228** | **$ 36,059** | |

***Table VI-23***
***2024 Total Recorded O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Aerial Suppression | $ 36,059 |
| **TOTAL** | **$ 36,059** |

***Table VI-24***
***2024 QRF Recorded O&M Expenses***

| Number | County | MOU Amount |
|---|---|---|
| 1 | Ventura | 9,647 |
| 2 | Los Angeles | 9,647 |
| 3 | Orange | 16,766 |
| | Total | 36,060 |

**4. Aerial Suppression Costs Were Reasonable**

In September 2025, the Commission once again conclusively determined that the QRF is a reasonable expenditure of customer funds because of the value it provides:

[76] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement p.11, FN 30.

> The Commission has already considered the merits of SCE's Aerial Suppression QRF arrangement, concluding "[i]t is reasonable for ratepayers to fund standby costs for helicopters used to fight fires that would threaten SCE infrastructure if not suppressed." Given the recent occurrence of catastrophic wildfires which significantly damaged and/or destroyed in-service SCE distribution [and] generation assets, resulting in hundreds of millions of dollars in repair and replacement costs, we continue to find SCE's Aerial Suppression program to be prudent and beneficial to ratepayers.[77]

In addition, the QRF's demonstrated effectiveness and the funding arrangement's endorsement from OEIS and local fire agencies further demonstrate the reasonableness of SCE's funding of the QRF in 2024. As detailed above, SCE pays the fixed, stand-by lease costs for the helicopters, and the Counties' fire agencies pay for the deployment costs when the QRF is dispatched, and are solely responsible for the safe and lawful operations and use of the QRF assets, including mission operations, deployment, maintenance, basing, positioning, pilot readiness, and ground support.

SCE incurred QRF stand-by costs in the best interest of its customers to reduce both the overall costs of suppressing fires in SCE's service area and the overall damage that would have been caused by those fires if left unsuppressed. SCE reasonably incurred costs to continue funding QRF stand-by costs to minimize the overall costs of fire suppression and protect SCE customers and infrastructure. Public funding was not sufficiently available for this critical resource in 2024.

SCE's 2024 QRF cost of $36.059 million is reasonable because these are the actual bargained-for contractual costs, and without the aerial resources the 86 fires in 2024 could have resulted in far greater destruction exceeding the cost of QRF resources. The QRF was extremely effective at mitigating potential consequences from wildfires potentially impacting SCE infrastructure to a degree that currently no other mitigation can match. There are very few areas in SCE's service area that would not be threatened or compromised by a wildland fire. This is especially true of fires that occur during high wind events and/or at night. Regardless of the cause or point of origin, entire neighborhoods and SCE's infrastructure have been damaged or destroyed by wildfires.

Since SCE entered into MOUs to fund deployment of these aerial suppression resources, the QRF has demonstrated its effectiveness in battling fires. For example, in 2024, the Franklin Fire was contained before dawn with the help of the QRF's night operations, which delivered 635,800 gallons of

[77] D.25-09-030 at p. 433 (internal citations omitted).

water. While other factors were certainly involved, the QRF operations contributed to saving over 150 homes. In comparison, the 2007 Corral Canyon Fire lacked night aerial support, burned 4,900 acres and destroyed 86 structures.[78] And, as noted in OEIS' Decision on SCE's 2023-2025 WMP, "[a]mong the strengths of SCE's Wildfire Mitigation Plan are the targets it has set for emergency preparedness, which include providing funding for fire agencies to maintain a quick reaction force of firefighting resources year-round."[79]

The importance of QRF in fighting fires is explained by the Fire Agency Chiefs. The Fire Agency Chiefs forwarded SCE a signed letter dated December 16, 2024 and addressed to "Commission Members." The letter states: "[T]he QRF, which is the world's first 24/7, entirely nocturnal wildfire aerial task force, is the most effective asset in the history of wildland firefighting, and its presence in Southern California since 2020 has saved billions of dollars in property and an untold number of human lives, facts that are both undeniable and verifiable with data."[80]

As discussed above, the reasonableness of the 2024 QRF program cost is further supported by the Commission's 2025 GRC Decision that approved QRF funding for the 2025-2028 GRC period. The same is true for 2021**,** 2022 and 2023.[81] There is no reason to treat SCE's 2024 aerial suppression costs any differently. Concern for wildfires must be paramount and the aerial suppression resources have proven extremely effective at reducing the area and assets burned and enabling faster response times. Given the QRF's demonstrated effectiveness and the funding arrangement's continued endorsement from the Commission*,* OEIS and local fire agencies, SCE's funding of the QRF in 2024 was reasonable.

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[78] Both Corral Canyon Fire and Franklin Fire were in the same area of the Santa Monica Mountains/Malibu within Los Angeles County.

[79] *See* the workpaper "The Office of Energy Infrastructure Safety's Decision Approving Southern California Edison Company's 2023-2025 Wildfire Mitigation Plan" dated October 24, 2023. *See* Section 1 Executive Summary.

[80] *See* the workpaper "Orange County Fire Authority Letter to CPUC.pdf."

[81] 2021 WMVM Decision (D.24-03-008); 2022 WMVM Decision (D.25-06-051); 2023 WMCE Decision (D.25-06-017); and 2021 GRC Track 4 Decision (D.23-11-096).

### 5. QRF Cost Recovery Compliance Requirements

In D.25-06-017 approving the Settlement Agreement for the 2023 WMCE, the Commission directed SCE to provide three specific showings in future after-the-fact reasonableness review cost recovery proceedings for the QRF.[82] The following discussion demonstrates SCE's adherence to these compliance requirements for the 2024 QRF funding. Those requirements are as follows: "In future after-the-fact reasonableness review applications seeking recovery of SCE's costs for the Quick Reaction Force (QRF):

i. SCE will document the (1) firefighting agencies' efforts that it is aware of to find alternative sources of QRF funding and a (2) description of the firefighting agencies' efforts to secure other non-financial resources (e.g., through mutual aid agreements) for the period covered by the application or for ongoing efforts for future years.

ii. To demonstrate efforts to reduce firefighting agencies' reliance on SCE customer funding, SCE will report on the firefighting agencies' ongoing and planned efforts that it is aware of to obtain alternative funding or efforts to secure other non-financial resources (e.g., through mutual aid agreements) for future years for which SCE has not entered into funding agreements with the firefighting agencies, such as by means of filing actual budget requests, grant applications, proposed legislation, etc., as appropriate to agencies actual budgeting/funding processes.

iii. SCE will also report on the firefighting agencies' budget for non-SCE funded aerial suppression assets, to the extent that information is reasonably available to SCE and ascertainable, from the subject application year onward."[83]

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[82] D.25-06-017 Decision approving Settlement and Authorizing SCE to recover costs related to Wildfire Mitigation, Vegetation Management, Catastrophic Events, and Other Costs, pp.19-20, A.24-04-005, and Appendix pp. A-9 to A-10.

[83] *See* D.25-06-017 at pp. 20-21.

### a) Fire Agencies' Efforts to Secure Alternative Public Sources of QRF Funding and to Secure Other Non-Financial Resources

#### (1) Alternative Public Sources of Funding

During 2024, the Fire Agencies wrote two letters addressing the need for creating a more sustainable funding method for the QRF program. The first letter was dated September 26, 2024, from Orange County Fire Authority chief to Steve Powell, President and CEO, SCE:

> As discussed, the other fire chiefs and I understand the QRF program cannot be sustained indefinitely with SCE funding alone. To that end, it's been suggested that in concept and as a starting point to create a more sustainable funding method, our agencies that host the aircraft and perhaps the State of California each contribute toward program costs beginning in 2026 with the understanding that our local agencies and the State of California would pursue public funding of the QRF thereafter.[84]

Additionally, the Fire Agencies wrote a second letter to the Commission in December of 2024 describing the firefighting agencies' efforts to find alternative public sources of QRF funding. The letter explained in part that:

> SCE continues to partner with all three Fire Agencies to actively work with elected officials to achieve similar results with the QRF program – an endeavor that has a far better opportunity to succeed now than it did in 2019 or 2020 due to the overwhelming proof of concept that has come with three and a half years of the QRF extinguishing, slowing, and stopping hundreds of wildfires. In essence, due to the unavailability of public funding to support a program that is saving countless lives and untold numbers of structures, SCE has not only stepped up financially, but also through advocacy to support our efforts to transition the funding to other sources in 2026 and beyond.[85]

In 2025, the three Fire Agencies have been coordinating closely with California State Assembly Member, and Assembly Utilities & Energy Committee Chair and Budget Committee Member, Cottie Petrie-Norris on legislation introduced in 2025 to shift full or partial funding from SCE to the State of California. Assembly Bill 275 (AB 275) is now a two-year bill, which will resume legislative consideration in 2026, and Orange County Fire Chief Brian Fennessy testified in

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[84] *See* the Workpaper "Orange County Fire Authority Letter to SCE.pdf."

[85] *See* the Workpaper "Orange County Fire Authority Letter to CPUC.pdf."

support on March 5, 2025, at a California State Assembly Utilities and Energy Oversight Committee Hearing. Other efforts include potential philanthropic support for the QRF program.

Further, in 2025, the Fire Agencies have produced a short documentary that will be used to promote the program to both state legislators and potential donors.[86] This documentary follows several other agency-led efforts to leverage media engagement in seeking alternative funding for the program's future. This includes a September 5, 2024, joint news release and media kit, complete with B-Roll footage of the aircraft and interviews with the three agency chiefs, SCE President/CEO Steve Powell, and Assembly member Cottie Petrie-Norris.[87]

The Fire Agencies contribute alternative funding by way of in-kind staffing, cost to complete required aircrew and ground resource training, and housing and logistical support for the aircraft and contractors that comprise the QRF Program.

In addition, it is SCE's understanding that the Fire Agencies plan to explore funding opportunities through their fiscal year budgets, grants, and other in-kind resources to help offset the cost to SCE customers and the overall QRF Program. SCE and the Fire Agencies are close to finalizing an agreement for 2026 and beyond that contemplates a cost sharing arrangement. Over the past five years, the consistent efforts by the three agencies to keep elected officials and community stakeholders informed on the program's effectiveness — from major media educational events to public board reports — have created a conducive environment for these future funding conversations to occur.

**(2) Other Non-Financial Resources**

The status of Fire Agencies' efforts to secure other non-financial resources for 2024 and currently in 2025 follows. The three counties regularly provide and receive mutual aid from in- and out-of-county partners. However, with the exception of the QRF aircraft, this type of firefighting aircraft is spread sparsely throughout the State of California. The three, 3,000-gallon

[86] https://vimeo.com/1100360153/2fb60e196c (Accessed on December 4, 2025).

[87] https://lacounty.gov/2024/09/05/worlds-largest-firefighting-helicopters-make-a-splash-on-2024-wildfires-seek-permanent-home-in-socal/ (Accessed on December 4, 2025).

capacity CH47 helitankers located in close proximity have proven time and time again that a rapid, continuous and aggressive aerial attack is necessary to ensure lives are protected day and night. This program is essential to public safety as there are no other aviation resources in existence reasonably available that are capable of duplicating the success experienced within the SCE service territory.

**b) Firefighting Agencies' Budget for Non-SCE-Funded Aerial Suppression Assets**

To comply with this requirement, SCE requested that the firefighting agencies provide their respective budgets for non-SCE funded aerial suppression assets. The Fire Agencies provided the relevant budget information to SCE, which is attached to this testimony.[88]

**6. Risk Spending Efficiency.**

SCE developed an RSE for Aerial Suppression (1,148). This RSE ratio demonstrates the effectiveness of the Aerial Suppression costs and justifies the program spending as reasonable.

## D. PSPS Execution

### 1. Overview

To protect public safety and mitigate the risk of significant wildfires associated with electric facilities, SCE continues to use proactive de-energization of power lines, referred to as Public Safety Power Shutoffs (PSPS), as a last resort when severe fire weather conditions pose a risk to infrastructure. SCE's objective in using PSPS as a last resort is to reduce the risk that our equipment could be the source of a significant wildfire through the use of targeted de-energizations, impacting as few customers as possible while still mitigating the wildfire risk. SCE's goal is to communicate clearly, accurately and in a timely fashion, and to minimize the disruption and hardship of proactive de-energization through customer programs and support. SCE is continuing to undertake significant efforts to further advance its robust infrastructure and operational program to manage wildfire-related risks. The changing climate, below average rainfall, extended periods of high winds and potential for wildfire to spread are indicators that we may need to use PSPS more often to help prevent fires caused by

[88] *See* the Workpaper "Budget information related to aerial suppression assets funded by county fire agencies (non-SCE).pdf."

utility equipment and keep our communities and customers safe. Therefore, more frequent and extended use of PSPS may be required in 2025 (assuming similar weather as 2024), and PSPS may extend to areas that have not experienced PSPS in the past. In SCE's 2025 GRC, the Commission recognized the need for PSPS and SCE's implementation of this program, noting "[w]e find SCE's 2025 forecast methodology for PSPS Execution to be reasonable and well-supported" and "[f]or all these reasons, we approve SCE's full TY O&M request of $20.335 million in expenses for PSPS Execution."[89]

Table VI-25 and Table VI-26 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for PSPS Execution. The imputed GRC authorized amount is $16.610 million[90]. Aerial Suppression is discussed in IV.C.

***Table VI-25***
***PSPS Execution***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[91]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| PSPS Execution | $ 16,610 | $ 27,233 | pp. 550-634 |
| **TOTAL** | **$ 16,610** | **$ 27,233** | |

89 *See* Decision 25-09-030 at pp:427-428

90 *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

91 *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

***Table VI-26***
***PSPS Execution***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Line Patrols - D and Line Patrols - | 8,442 |
| PSPS Execution IMT | 6,446 |
| Community Outreach | 5,233 |
| PSPS Operations | 4,725 |
| PSPS Response & Compliance | 1,337 |
| Community Resource Centers | 517 |
| Customer Side Generators | 380 |
| Community Crew Vehicles (PSPS) | 102 |
| Town Hall Community Meetings | 51 |
| **TOTAL** | **$ 27,233** |

Table VI-27 and Table VI-28 below, show the capital expenditures authorized in Track 4 of the 2021 GRC for 2024, as well as the total capital expenditures for PSPS Execution.

***Table VI-27***
***PSPS Execution***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditures[92]***
***(($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| PSPS Execution | $ 4,328 | $ 845 | pp. 550-634 |

[92] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

***Table VI-28***
***PSPS Execution***
***2024 Total Capital Expenditures by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| Line Patrols | $ 845 |
| **TOTAL** | **$ 845** |

PSPS Execution drives the preparation and execution of PSPS events in compliance with applicable CPUC decisions.[93] In 2024, PSPS Execution comprised the following sub-activities:

- Line Patrols (O&M and Capital) – See Section VI.D.3, below.
- PSPS Execution Incident Management Team (IMT) (O&M) – See Section VI.D.4, below.
- Community Outreach (O&M) – See Section VI.D.5, below.
- PSPS Operations (O&M) – See Section VI.D.6, below.
- PSPS Response and Compliance (O&M) – See Section VI.D.7, below.
- Community Resource Centers (CRCs) (O&M) - To support communities impacted by PSPS, SCE operates CRCs to provide in-person, localized assistance. During PSPS activations, CRCs offer essential services such as charging stations for small electronic devices, light snacks, bottled water, and specialized support for customers with Access and Functional Needs (AFN), including thermal medical storage bags and medical device charging. Customers can also obtain timely information regarding the scope and expected duration of the PSPS event. As of December 31, 2024, SCE had established contracts with 67 CRC locations and activated CRCs 109 times, providing support over a cumulative 189 days across multiple counties. CRCs are staffed by Customer Outreach team members,

[93] *See* D.19-05-042, D.20-05-051, and D.21-06-034.

typically in teams of three to four, who are deployed to set up and manage operations at each site. In 2024, approximately 3,518 customers visited CRCs during PSPS events. In 2024, SCE recorded $0.517 million in O&M expenses for this activity.

- Customer-Side Generators (O&M) – SCE has contracted with several customers who have agreed to participate in a generator deployment program to bolster resiliency for rural communities with very few resources to access in their area (groceries, water, and essential services). SCE deployed and connected 27 generators in support of Resiliency Zones (RZs), and major customers. SCE currently has ten identified RZs in the service area, including in the towns/cities of Santa Clarita (three facilities), Cabazon (two facilities), Acton (one facility), Lee Vining (one facility), Mammoth Lakes (one facility), Tehachapi (one facility), and Bridgeport (one facility). SCE pays a fee to the generator vendor to retain the units in a ready state at their facilities.[94] In addition to the RZ generators, SCE works with county offices of emergency management to triage requests for generation for major facilities or customers with medical needs to sustain life (in which case the county evaluates if they have plans in place to support, and if they are unable to support they would ask SCE to support) during PSPS events. In 2024, SCE deployed 27 generators (15 to RZs and 12 to a major customer in Kern County called the Kern Valley Hospital). The cost of deploying the 27 generators was recorded at $0.380 million in O&M expenses for this activity.
- Community Crew Vehicles (CCVs) (O&M) - SCE provides in-person, localized support to communities impacted by PSPS through the deployment of

[94] Larger kW units (typically 500 kW and larger) are scarce in the rental marketplace, particularly cleaner-burning EPA Tier 4 emissions-equipped units, meaning that SCE must keep them on retainer to ensure they are not rented to other parties.

CCVs. These mobile units are deployed to areas without contracted CRC locations or to supplement existing CRCs. These vehicles are designed for rapid deployment and can be set up in open or remote areas without the need for permanent infrastructure. Each CCV is equipped with technology and supplies to enable SCE personnel to distribute water, snacks, and resiliency kits, as well as to facilitate customer communications. In 2024, SCE recorded $0.517 million in O&M expenses for this activity. As of 2024, SCE maintains a fleet of eight CCVs. In 2024, CCVs were deployed 47 times across multiple counties, providing support for 80 days, and approximately 1,785 customers visited CCV customer support sites during PSPS events. To improve connectivity in areas with limited cellular service, two CCVs are equipped with Starlink satellite phones, with plans to expand the technology to the remaining vehicles. SCE collaborates with public safety partners to identify new deployment sites and evolving community needs. CRC and CCV activations, along with associated customer support activities, are expected to continue through 2025 to 2028. In 2024, SCE recorded $0.102 million in O&M expenses for this activity.

- Town Hall Community Meetings (O&M) – SCE organizes localized Wildfire Safety Community Meetings (WSCMs) to engage directly with community members in areas impacted by PSPS. These forums provide an opportunity for residents to interact with SCE leaders and subject matter experts, learn about wildfire mitigation strategies, explore customer programs designed to reduce the impact of PSPS de-energizations, and access emergency preparedness resources. In 2024, SCE hosted two WSCMs in High Fire Risk Areas (HFRA) affected by PSPS. Looking ahead, SCE is committed to continuing these meetings and plans to expand the number of these meetings in future years. This effort aims to ensure consistent, transparent communication to increase awareness of the resources SCE

offers to help mitigate wildfire-related impacts. In 2024, SCE recorded $0.051 million in O&M expenses for this activity.

**2. Spending on PSPS Execution Was Reasonable**

In 2024, SCE recorded $27.233 million in O&M expenses for PSPS Execution comprising the various sub-activities described above. These sub-activities drove the design, development, implementation, execution and management of PSPS events. SCE's spending on PSPS Execution was reasonable because the sub-activities that comprise this GRC activity either directly mitigated a significant amount of wildfire risk or allowed SCE to effectively implement PSPS protocols in a manner that minimized impact to customers while mitigating a significant amount of risk. For example, as described in more detail below, line patrols provide critical sources of situational awareness information that allow for the safe execution of SCE's PSPS protocols before and during a PSPS event, and after weather conditions have abated they ensure that circuits that were de-energized are safe to re-energize. In addition, SCE's customer outreach efforts increase customer awareness and understanding of PSPS events and how to prepare for them. And CRCs and CCVs provide services to customers impacted by PSPS de-energizations. SCE recovered its 2023 costs related to the PSPS Execution activity in D.25-06-017.[95]

SCE remains committed to enhancing its wildfire mitigation programs to address the threat of catastrophic fires posed by extreme weather and climate change. In all events in which lines were de-energized, PSPS could have prevented vegetation or debris from blowing into lines and creating sparks that could lead to wildfire ignitions. In addition, SCE has found many instances in which winds have caused damage to power lines, which may have caused an ignition if the lines were energized.

[95] D.25-06-017 approved a Settlement Agreement, which did not include any reductions to WMPMA costs, which is where SCE's PSPS Execution program costs were and are recorded.

***Table VI-29***
***List of 20 PSPS Events in 2024***

| Event Name | Deenergized | Number of Customers |
|---|---|---|
| PSPS Incident 6.14.2024 | No | - |
| PSPS Event 07.21.2024 | No | - |
| PSPS Event 07.26.2024 | No | - |
| PSPS Incident 08.07.2024 | Yes | 21 |
| PSPS Event 08.23.2024 | Yes | 3 |
| PSPS Event 09.15.2024 | No | - |
| PSPS Event 09.07.2024 | Yes | 489 |
| PSPS Event 10.02.2024 | Yes | 1 |
| PSPS Event 10.09.2024 | No | - |
| PSPS Event 10.17.2024 | Yes | 11,381 |
| PSPS Incident 10.27.2024 | Yes | 89 |
| PSPS Incident 11.04.2024 | Yes | 71,044 |
| PSPS Incident 11.11.2024 | Yes | 637 |
| PSPS Incident 11.18.2024 | Yes | 1,251 |
| PSPS Incident 11.28.2024 | No | - |
| PSPS Event 12.05.2024 | No | - |
| PSPS Incident 12.09.2024 | Yes | 51,102 |
| PSPS Incident 12.14.2024 | Yes | 1,007 |
| PSPS Incident 12.26.2024 | No | - |
| PSPS Event 12.31.2024 | No | - |

SCE remains focused on improving customer communications before, during, and after PSPS events, and mitigating the impacts of PSPS events through execution of hardening programs, sectionalizing, and rapid patrols to evaluate its ability to safely restore power. SCE is also committed to customer support mitigations, including battery backups and portable generator programs, outreach through CRCs, CCVs and community meetings, and programmatic support through 211 to reduce the impacts of PSPS de-energizations.

**3. Line Patrols (Distribution & Transmission)**

**a) Overview**

Line Patrols are an important part of SCE's PSPS program and are one of many inputs that the PSPS IMT considers when initiating PSPS Protocols. Line patrols provide critical sources of situational awareness that allow for the execution of SCE's PSPS protocols before, during, and after a PSPS event, and at times after weather conditions have abated. SCE trains qualified electrical workers to

perform pre-patrols and Live Field Observations (LFO) for PSPS events. Before an event, line patrols are conducted by Qualified Electrical Workers (i.e., Troublemen, Senior Patrolmen, etc.) to examine SCE assets for any potential concerns that may be exacerbated by the upcoming wind event. During an event, qualified personnel can be deployed to HFRA to take live wind readings, visually inspect SCE's overhead asset integrity, and to watch for other environmental hazards (i.e., airborne debris). These LFOs are performed to identify and document safety and reliability conditions that may require immediate action and may be performed with one or more vehicles, or by aircraft, or on foot, as appropriate, depending on congestion, visibility, accessibility, time urgency and topography. LFOs provide real-time data back to SCE's IMT to inform operational decision making. Finally, after concerning weather conditions have abated, SCE dispatches teams to patrol all circuits that were de-energized to identify damaged equipment, downed wires, or debris in the lines. Circuits found with damage or hazards are repaired/mitigated prior to power restoration.

**b) Spending on Line Patrols (Distribution and Transmission) Was Reasonable**

In 2024, SCE recorded $8.442 million in O&M expenses and $0.845 million in capital expenditures for this sub-activity. Qualified electrical workers perform pre-patrols, live field observations, restoration patrols and, at times, post-patrols for PSPS events to provide real time field data and communicate when weather damage/hazards have been identified or if safety risks are present. This situational awareness supports the safe execution of SCE's PSPS protocols before and during a PSPS event, and after weather conditions have abated. In 2024, SCE conducted over 1,600 Line Patrols during PSPS and high-threat events.

**4. PSPS Execution Incident Management Team (IMT)**

**a) Overview**

SCE has established and trained a dedicated PSPS IMT team to respond to PSPS events and advance operational protocols and enhancements during normal daily operations. A dedicated team creates greater operational and communications consistency across PSPS activations. Additionally, this specialized team is able to quickly adapt and make changes from one event to another. The Incident Command System (ICS) is typically utilized by private and public organizations across the

country as a best practice for emergency response, regardless of incident size or type. ICS has been successfully utilized at SCE for several years, allowing for the IMT to respond in a cohesive, integrated manner during any activation, including those related to wildfires and PSPS events. Additionally, SCE maintains a comprehensive annual all-hazards training and exercise routine to ensure continuous improvement. This program adheres to State and Federal emergency management guidance for readiness standards. The PSPS IMT oversees and executes PSPS protocols, which detail how PSPS activation, notification, de-energization and service restoration processes work (e.g., roles and responsibilities, decision-making processes, and execution). The team relies on a multitude of tools and technologies to anticipate the need for possible PSPS activation, monitor weather events, evaluate real time forecasts, provide communications to affected communities, and enable the IMT under the leadership of the Incident Commander to make complex decisions about when to implement and when to end PSPS events. When SCE forecasts that windspeeds will breach circuit specific thresholds for activation and monitoring for potential PSPS, SCE activates its PSPS IMT and begins preparations for the upcoming event (notifications, pre-patrols, etc.). The IMT uses a variety of factors to guide its decision on whether de-energization on each circuit or circuit segment is necessary, including the Fire Potential Index (FPI) and real-time data from weather station sensors and field observers (if available).

**b) Spending on PSPS Execution IMT Was Reasonable**

SCE's dedicated PSPS IMT team is staffed to respond to PSPS events and advance operational protocols and enhancements. A dedicated team has more robust skills and deeper PSPS knowledge, leading to higher performance levels under emergency conditions. Additionally, this specialized team is able to quickly codify best practices and lessons learned to improve performance from one event to another. Having a dedicated team supports consistent decision making, deeper PSPS-specific subject matter experience, and greater ability to support continuous improvement, integration of new regulatory requirements and capabilities into existing processes, and advanced planning during non-event periods. This team is supplemented by additional employees from various organizations across the company that provide functional support during a PSPS activation event. PSPS execution IMTs were established with the necessary tools and technology to monitor ongoing weather and circumstances.

SCE's spending on PSPS Execution IMT was reasonable because this sub-activity helped mitigate a significant amount of wildfire risk and allowed SCE to effectively implement PSPS protocols in a manner that minimized impact to customers. In 2024, the PSPS IMT was activated for 20 PSPS events and de-energization was ultimately required in 11 of those events. SCE recorded $6.446 million O&M expenses for PSPS Execution IMT activity in 2024.

### 5. Community Outreach

#### a) Overview

In 2024, SCE recorded $5.233 million in O&M expenses for Community Outreach. This activity covers SCE's PSPS advertising campaign, which seeks to improve the public's awareness of SCE's PSPS activities by providing information on how to prepare for a de-energization, including what to expect and available resources. The PSPS advertising campaign conveys messages via multiple media avenues, such as streaming TV, radio, streaming audio, social media, and digital banners. The ads were communicated in multiple languages[96] and focused on messages such as PSPS conditions, how to update PSPS/outage alert preferences, emergency preparedness, wildfire mitigation, MBL program sign-ups, and customer resources and programs. The 2024 expenses covered the costs of strategic planning, creative development and production, customer testing, media planning and buying, ad production, and reporting of the entire campaign.

#### b) Spending on Community Outreach Was Reasonable

The 2024 O&M expenses that SCE incurred for PSPS Community Outreach were reasonable because these activities conveyed important information to help customers prepare for and mitigate the impacts of PSPS de-energizations, including those most vulnerable. SCE selected its advertisement companies using a competitive bidding process. SCE conducts agency reviews every three years to ensure the most efficient agency is chosen to serve SCE's advertising needs.

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[96] SCE's 2024 costs for translating its PSPS ads into multiple languages are included with O&M expenses for PSPS Customer Support – *see* Section VI.E.5 In Language Advertising & Translations, below, for further details.

### 6. PSPS Operations

#### a) Overview

The PSPS Operations group comprises functional area managers, power system operations specialists, advisors, and specialists that are responsible for activities that span both 'blue-sky' days and, when activated, to execute PSPS events.

When not activated for PSPS, the team develops, improves, and maintains the processes, procedures, protocols, and systems that are critical to effective and efficient PSPS event execution on a dynamic and ever-changing electrical grid. This includes the development, maintenance, operation, and updates of the Integrated PSPS Event Management System (iPEMS) and integration with CDP, the two core systems used to manage and execute PSPS events.

When activated for a PSPS event, PSPS Operations staff, a specialized PSPS Task Force that is part of SCE's overall IMT structure, are responsible for providing oversight and guidance for the execution of PSPS protocols on the transmission, sub-transmission, and distribution circuits in SCE's HFRA. The PSPS Task Force reviews and updates switch plans and procedures for impacted HFRA circuits. The task force transfers customer loads to non-impacted circuits to minimize customer impacts during PSPS events (when feasible) and initiates pre-patrols on in-scope circuits prior to the period of concern, among other tasks.

During the event, the PSPS Task Force is responsible for providing up-to-date situational awareness of the electric grid and environmental conditions and for recommending de-energization if weather conditions pose an imminent and significant threat to public safety. Once the threat to public safety has abated, the PSPS Task Force coordinates restoration activities. After the event has concluded, the PSPS Task Force is responsible for gathering and submitting operations-related data for various PSPS post-event reporting activities.

In 2024, SCE recorded $4.725 million in O&M expenses for this sub-activity.

#### b) Spending on PSPS Operations Was Reasonable

The O&M expenses incurred by SCE in 2024 for PSPS Operations were reasonable because this activity was necessary to ensure sustainability and continued success of SCE's

execution of PSPS. PSPS Operations addresses preparedness, technological advancements, compliance, focused response during activations, and a commitment to continuous improvement. All these elements collectively contribute to the safety, reliability, and effectiveness of SCE's PSPS program. The long-term benefits, such as enhanced public safety and operational efficiency, require ongoing financial support for continuous improvement in providing reliable and safe electric service while staying ahead of emerging challenges in the dynamic field of PSPS event management.

In 2019, SCE considered continuing with the existing IMT structure. However, recognizing the growing impacts of climate change and the increasing wildfire risk within SCE's service area, coupled with the potential for numerous PSPS-related IMT activations and the impact of PSPS on our customers, it was determined that developing a dedicated PSPS Operations team was the best approach. This decision aimed to increase precision, provide a higher level of expertise, ensure consistency, enable rapid response, enhance accountability, and allocate resources more effectively, in addition to keeping a sharp focus on minimizing the impact on our customers. By doing so, SCE sought to enhance its ability to effectively manage risks and maintain grid resilience during PSPS activations. This strategic shift was deemed necessary due to the complexity of the PSPS program, stringent regulatory requirements,[97] and the need for compliant execution.

As discussed above, SCE's forecast in Track 4 for 2024 costs was based on recorded 2021 spend. Since 2021, the PSPS Operations program has significantly matured, driving expansion in strategy and scope. This evolution has required SCE to expand operations and make targeted investments to strengthen operational capabilities, enhance compliance oversight, and deliver comprehensive training. Given that this maturation occurred after SCE's 2021 GRC filing, it was reasonable that these costs were not included in SCE's Track 4 forecast.

[97] *See* ESRB-8, D.19-05-042, D.20-05-051, D.21-06-034, and D.21-06-014.

### 7. PSPS Response and Compliance

#### a) Overview

In 2019, SCE established a dedicated Wildfire/PSPS Response group within the Business Resiliency Department to provide direct support for PSPS and wildfire mitigation efforts. This includes supporting high-impact work activities for implementing the PSPS protocols; deploying enhanced situational awareness tools, such as supercomputers, high-resolution forecasting, high definition (HD) cameras, and weather stations; and developing processes and procedures to comply with regulatory mandates.

#### b) Spending on PSPS Response and Compliance Was Reasonable

In 2024, a group of dedicated IMT resources developed several additional capabilities around PSPS IMT programs and processes to enhance situational awareness tools and technologies and build external engagement. A dedicated team creates greater consistency across PSPS activations when communicating with customers and public safety partners. Additionally, this specialized team is able to more quickly adapt and make changes from one event to another. This team worked on PSPS-related compliance requirements, processes, and procedures, quality assurance activities and provided support for future technology enhancements. SCE forecasts continued support needed for the ongoing design, development, implementation, and execution of SCE's PSPS protocol and compliance program. In 2024, SCE recorded $1.337 million in O&M expenses for this sub-activity.

### 8. RSE

SCE developed RSEs for CRCs/CCVs sub-activity (1). The RSE for CRCs/CCVs is relatively low because the PSPS risk score is less than SCE's wildfire risk score. However, there is still significant PSPS risk that SCE is required to mitigate and CRCs/CCVs are one of the few activities that effectively address those risks. SCE did not develop RSEs for the remaining sub-activities because they do not directly reduce the consequence or likelihood of PSPS events. SCE executes them to enable current or future PSPS capabilities and/or to meet PSPS-related compliance requirements.

## E. PSPS Customer Support

### 1. Overview

Table VI-30 and Table VI-31 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for PSPS Customer Support. The imputed GRC authorized amount is $21.294 million.[98]

***Table VI-30***
***PSPS Customer Support***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[99]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| PSPS Customer Support | $ 21,294 | $ 28,314 | pp. 550-604 |
| **TOTAL** | **$ 21,294** | **$ 28,314** | |

[98] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[99] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement p.11, FN 30.

***Table VI-31***
***PSPS Customer Support***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Critical Care Battery Backup Program | $ 7,700 |
| IMT Customer Notifications | $ 4,057 |
| In-Language advertising & translations | $ 2,711 |
| AFN Customer Enhancements | $ 2,142 |
| Customer Research and Education | $ 2,016 |
| Disability Disaster & Access Resources (DDAR) | $ 1,609 |
| PSPS 211 Service | $ 1,589 |
| Emergency Outage Notification System | $ 1,499 |
| PSPS Newsletter | $ 1,210 |
| Surveys, CBO, and Staffing | $ 924 |
| PSPS Website Improvements | $ 811 |
| Customer Contact Center Support | $ 712 |
| Residential Battery Station Rebates | $ 645 |
| Well Water Generator Incentive | $ 399 |
| In-Event Battery Loan Pilot | $ 204 |
| Resiliency Zones | $ 55 |
| eMobility Phase 2 | $ 30 |
| **TOTAL** | **$ 28,314** |

Table VI-32 and Table VI-33, below, show the capital expenditures authorized in Track 4 of the 2021 GRC for 2024, as well as the total capital expenditures for PSPS Customer Support.

***Table VI-32***
***PSPS Customer Support***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditures[100]***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| PSPS Customer Support | $ 1,203 | $ 8,426 | pp. 550-604 |

***Table VI-33***
***PSPS Customer Support***
***2024 Total Capital Expenditures by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| IMT Customer Notifications | $ 8,426 |
| **TOTAL** | **$ 8,426** |

SCE incurred O&M expenses in the amount of $28.314 million and capital expenditures in the amount of $8.426 million in 2024 related to PSPS Customer Support.

When necessary, SCE activates its PSPS event process, which entails implementing a series of detailed notifications to its customers, public safety partners, and other entities on potential PSPS activity. In addition, throughout the year, SCE provides consistent and frequent messaging designed to build customer awareness and understanding of what a PSPS event is, inform customers on how such events may impact them, and encourage and aid customers to build their own resiliency plans for de-energizations. SCE's PSPS Customer Support strategy uses a mix of communication channels to

100 *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

provide this awareness and information. In 2024, PSPS Customer Support was comprised of the following sub-activities:

- Critical Care Battery Backup (CCBB) – See Section VI.E.3, below.
- IMT Customer Notifications – See Section VI.E.4, below.
- In-Language Advertising and Translations – See Section VI.E.5, below.
- Access and Functional Needs (AFN) Customer Enhancements – See Section VI.E.6, below.
- Customer Research and Education – See Section VI.E.7, below.
- Disability Disaster and Access Resources (DDAR) – See Section VI.E.8, below.
- PSPS 211 Service– See Section VI.E.9, below.
- Emergency Outage Notification System (EONS) – See Section VI.E.10, below.
- PSPS Newsletter – See Section VI.E.11, below.
- Surveys, Community-Based Organizations (CBO), and Staffing – SCE conducts annual pre- and post-season surveys to evaluate the effectiveness of its wildfire safety and preparedness communications and outreach to customers. These pre- and post-season surveys are offered to customers in English and 19 additional languages. In 2024, SCE contracted with a third-party to conduct the CPUC-mandated annual pre- and post-wildfire and PSPS communications effectiveness study.[101] Payments were issued to CPUC-approved CBOs that conducted PSPS education and outreach, before, during and after wildfire season. As part of these efforts, SCE collaborated with a total of 94 CBOs to educate and increase awareness among constituents around safety preparedness. These CBOs generated over 116 million direct engagements through multiple communication channels and achieved over 3 million impressions via social media platforms. In 2024, SCE recorded $0.924 million in O&M expenses for this sub-activity.

[101] *See* D.20-03-004 at pp. 19-25.

- PSPS Website Improvements – SCE maintains a dedicated and interactive webpage on SCE.com to enhance customer awareness of PSPS. This resource hub provides timely updates, guidance on building personal resilience during outages, and access to emergency preparedness resources. In 2024, SCE continued to support and maintain the PSPS webpage and associated digital content enhancements implemented in prior years. No new functional or design changes were introduced during the year, as the existing platform remained stable and effective in meeting both operational requirements and customer communication needs throughout the PSPS season. In 2024, SCE recorded $0.811 million in O&M expenses for this sub-activity.
- Customer Contact Center Support – During 2024 PSPS events, SCE provided comprehensive support to customers by addressing inquiries, sharing resource information, resolving concerns, and escalating urgent issues as needed. SCE also delivered critical safety messaging to help protect the public throughout these events. In addition, SCE has engaged directly with the community through its CRC and CCV customer support sites since 2020. SCE has improved its response times for those seeking information via customer service channels regarding PSPS and other outages. In 2024, SCE recorded $0.712 million in O&M expenses for this sub-activity.
- Residential Battery Station Rebates (Portable Power Station Rebate Program) – In 2024, SCE issued 2,315 rebates to customers that purchased qualified power stations and paid for the costs and services needed to market the program, provide program management and call center support, and sustain the operations of the program. The rebate amount of $150 per portable power station is supported by market analysis, coincides with inflation, and is comparable to other IOUs' rebate

values.[102] In 2024, SCE recorded $0.645 million in O&M expenses for this sub-activity.

- Well Water Generator Incentive (Portable Generator Rebate Program) – SCE issued 297 rebates to customers that purchased qualified portable generators. In addition, SCE paid for the costs and services needed to market the program, provide program management and call center support, and sustain the operations of the program. The rebate amounts of $200 and $600 per portable generator are supported by customer survey feedback to offset the large upfront cost in purchasing a portable generator. In 2024, SCE recorded $0.399 million in O&M expenses for this sub-activity.
- In-Event Battery Loan Pilot – In 2023, SCE launched a pilot program to support customers with AFN who reside in High Fire Risk Areas and rely on medical devices or assistive technologies essential for their independence, health, or safety. The pilot provides in-event support during PSPS by responding to escalation requests from customers requiring temporary power solutions for critical medical equipment. This initiative is designed for customers who are not currently eligible for, or have not yet applied to, the Critical Care Backup Battery (CCBB) program. Since its inception, SCE has responded promptly to all battery loan requests received, deploying 88 battery loans in 2024, ensuring timely eligibility assessments and delivery of backup power during PSPS. In 2024, SCE recorded $0.204 million in O&M expenses for this sub-activity.
- Resiliency Zones –SCE continued to support customer sites participating in Resiliency Zones which target rural communities impacted by PSPS outages. During PSPS, Resiliency Zone sites utilize SCE provided backup generation to

[102] SCE issues $150 for Portable Power Stations to all HFRA customers. By comparison, SDG&E issues rebates of $100 for non-CARE/FERA and $150 for CARE/FERA for Portable Power Stations and PG&E issues combined rebates (for Portable Power Stations and Generators) of $300 for non-CARE/FERA and $500 for CARE/FERA.

help ensure continuity of essential services during PSPS. In 2024, SCE deployed backup generators to Resiliency Zone sites under PSPS consideration on nine occasions. This included five deployments to a single site and one deployment each to four additional distinct locations. These deployments helped maintain critical services and enhance community resilience in high-risk, remote areas. In 2024, SCE recorded $0.055 million in O&M expenses for this sub-activity.

- eMobility Phase 2 (Mobile EV Charging) – The Mobile Electric Vehicle Charging (MEVC) pilot (previously referred to as eMobility Phase 2) was initiated to test solutions that support transportation resilience for customers impacted by PSPS events. The PSPS OIR Phase 2 Decision required the IOUs to implement pilot projects to investigate the feasibility of mobile and deployable electric vehicle Level 3 fast charging for areas impacted by PSPS events with each pilot limited to $4 million.[103] In 2023, SCE tested a MEVC prototype and exhibited it to community members to get feedback on design and deployment. However, initially SCE has had difficulties getting the MEVC to operate with different power sources (shore power vs battery/generator power) and to operate consistently across different makes and models of EVs. Since developing the MEVC, multiple options for mobile EV charging have become commercially available through rental agencies (e.g., Sunbelt, etc.); this combined with the inconsistent operations of the MEVC is causing SCE to consider different options to address this need going forward. In 2024, SCE recorded $0.030 million in O&M expenses for this sub-activity.

**2. Spending on PSPS Customer Support Was Reasonable**

SCE's Customer Support provides customers with programs and resources that increase resiliency and help mitigate the impacts of PSPS. For example, the Critical Care Backup Battery

[103] *See* D.20-05-051 at pp. 54-55

program (CCBB) enables certain customers to continue using critical medical equipment during de-energizations. SCE offers households and individuals with AFN a variety of services to help mitigate the impact of PSPS de-energizations. SCE continues to conduct research and outreach to gather and examine customer feedback which helps enhance program offerings and inform marketing and outreach strategies so that customers are aware of how to improve resiliency and what services are available.

### 3. Critical Care Battery Backup (CCBB) Program

#### a) Overview

In 2024, SCE incurred $7.700 million in O&M expenses to administer the CCBB program. SCE launched the CCBB program to provide fully subsidized portable backup batteries to temporarily operate critical medical equipment during power outages due to PSPS events or other emergencies. The CCBB program addresses the needs of SCE's MBL program customers residing in HFRA[104] and consists of activities such as outreach and marketing to encourage program enrollment, procurement, and deployment of portable backup batteries to eligible customers, and program management. A majority of the 2024 program costs ($7.291 million) were associated with battery procurement and delivery to deploy 2,654 portable backup batteries to eligible customers. There were also 2024 costs associated with program management, marketing, and data systems development ($0.408 million) for the CCBB program.

#### b) Spending on the CCBB Program Was Reasonable

SCE's 2024 spending on the CCBB program was reasonable because these activities were necessary to mitigate the impacts of PSPS de-energizations on SCE's most vulnerable customers. When evaluating battery suppliers and third-party contractors to help administer the program, SCE obtained the lowest negotiated pricing through its request for proposal (RFP) process that would fulfill CCBB program standards for batteries that could be used safely by SCE's customers. Through contract negotiations, SCE secured fixed pricing for portable batteries, solar panel recharging systems, and an extended three-year warranty. SCE also issued RFPs to onboard contractors to support customer

[104] This is to align with guidance issued in D.21-06-034 and to administer a program to support resiliency for customers that rely on electricity to maintain necessary life functions. *See* D.21-06-034, p. A-10.

outreach, assessment, enrollment, delivery, and education on the safe and proper use of the portable battery and solar panel.

#### 4. IMT Customer Notifications

##### a) Overview

In 2024, SCE incurred $8.426 million in capital expenditure and $4.057 million in O&M expenses on IMT Customer Notifications. The IMT Customer Notifications activity consists of technology investments to improve the accuracy of customers notified through the PSPS notifications process and, thereby, reduce the impacts of a PSPS event to customers. These investments include work to improve data and reporting accuracy, optimize PSPS operational workflow, analytics, and enhance the PSPS notification process to improve the customer experience. In 2024, PSPS events increased in both frequency and scale, making long-term enhancements necessary to accommodate the increased activation size. SCE's Centralized Data Platform (CDP) allows for automation and deployment of technology to support PSPS event management lifecycle capability and complies with the 2021 Action Plan, which was in response to the January 12, 2021 regulatory request from then-CPUC President Batjer and the January 26, 2021 PSPS Public Hearing feedback aimed at improving PSPS operations. Work completed in 2024 also included improvements to maintain platform continuity and further automation of the end-to-end workflow to further increase reliability and response during activations. The optimization of the workflow allowed for faster system response time and automating circuit to county updates that allowed IMTs to collaborate effectively in a single tool (this included completion of work to consolidate and standardize customer complaint data), as directed by an Administrative Enforcement Order (AEO).[105]

SCE continues to enhance its support for customers with Access and Functional Needs (AFN) before, during, and after PSPS. To better serve this diverse customer segment, SCE has implemented a voluntary AFN Self Identification Survey campaign to identify customers and

[105] *See* pp.15-16 of the Proposed AEO of Southern California Edison Company's Execution of 2020 Public Safety Power Shutoff Events, SCE's workpaper "SCE-Administrative Enforcement Order – 2020.pdf" submitted in this proceeding.

households with AFN to increase outreach and educate these customers regarding PSPS programs and resources designed to mitigate the impacts of PSPS. To date, SCE has collected over 170,000 responses to its AFN Self-Identification Survey from customers residing in High Fire Risk Areas (HFRA). Historically, the absence of a centralized repository for this data made it challenging to maintain accurate and consistent information across the lifecycle of customer accounts. In 2024, SCE performed solution analysis to develop system requirement specifications for capturing and centralizing AFN data within internal systems, in alignment with the California Public Utilities Commission (CPUC) mandate to store and manage customer AFN information.[106]

The 2024 capital and O&M costs covered SCE labor, contract labor, licenses and subscriptions. Contract labor included various vendors that provided development, infrastructure, operational, testing, and architecture support. It also included professional services such as project and program management and cybersecurity consulting. License and subscription fees for the CDP and associated cloud costs were incurred.

**b) Spending on IMT Customer Notifications Was Reasonable**

In response to the 2019 Commission Decision and the Commissioner Marybel Batjer's 2021 letter, SCE created the 2021 PSPS Corrective Action Plan, which captured the plan for the technology investments that are being addressed by this GRC activity.[107] Included in the letter was SCE's 2021 Corrective Action Plan outlining necessary technology investments and business optimization processes. The solution for CDP was chosen via an RFP, evaluating both in-house development and third-party software solutions. Following a thorough evaluation process, SCE chose a third-party solution that had previously demonstrated effectiveness in a comparable context. SCE's 2024 expenditures on IMT Customer Notifications were prudent and necessary, reflecting a strategic response

[106] *See* D.20-05-051, P87, Findings of Fact 48 - Each electric investor-owned utility shall identify, above and beyond those in the medical baseline population, households that self-identify to receive an in-person visit prior to disconnection for nonpayment or receive utility communication in a non-standard format or self-identify as having a person with a disability in the household, to help provide support for those with medical needs during a de-energization event.

[107] *See* SCE's workpaper "R1812005 SCE Company's Corrective Action Plan" submitted in this proceeding.

to evolving operational demands, regulatory guidance, and performance feedback, while enabling timely enhancements to critical systems that support more effective and responsive PSPS execution.

SCE's 2024 spending on IMT Customer Notifications was justified by the need to improve notification performance, maps and metrics, post-event reporting, optimize processes, enhance system integrations and improve health-checks in its PSPS related applications. Regulatory requirements and performance feedback, such as D.19-05-042 and a 2021 letter from Commissioner President Batjer, highlighted opportunities in SCE's PSPS execution[108]. These included data improvements such as the execution of the notification process, identification and notification of Medical Baseline (MBL) and AFN customers, and quality of PSPS post-event reports. While 2023 focused on the buildout of the CDP product, 2024 focused on enhancing the product through incorporation of lessons learned, especially given the growing frequency and duration of weather events. The spend on the CDP platform was reasonable as it allowed for a speed of delivery that enabled rapid deployment and integration of advanced capabilities around outage identification and customer notifications. This allowed CDP to address increasingly complex scenarios and take timely, informed actions during critical events.

**5. In Language Advertising & Translations**

**a) Overview**

Pursuant to D.20-03-004 which requires SCE to provide wildfire communications before, during, and after a wildfire in 19 languages (plus 3 indigenous dialects) in addition to English, SCE's External Communications contracts and manages translation and proofreading services for external wildfire communications, including mass media advertising, fact sheets, website information, letters, and social media. In 2024, SCE used translation services to provide advertisements, outreach materials, and other wildfire and PSPS communications in 19 language and three indigenous dialects, in

[108] Batjer, M. (January 19, 2021). 2020 Southern California Edison Company Public Safety Power Shutoff Performance [Letter to Kevin Payne].*See* workpaper "BATJER Letter SCE PSPS Execution Jan 19 2021" submitted in this proceeding.

addition to English.[109] In-language ads were carefully developed to make sure cultural nuances are considered and these ads resonate with in-language customers.

**b) Spending on In-Language Advertising & Translations Was Reasonable**

The 2024 spend in In-Language Advertising and Translations was reasonable because it was consistent with typical advertising campaigns in multiple languages and channels. The expenses were closely monitored and reconciled at the end of the campaign. In 2024, SCE recorded $2.711 million in O&M expenses for this sub-activity.

**6. AFN Customer Enhancements**

**a) Overview**

SCE continues to implement enhancements to better support customers with Access and Functional Needs (AFN) and reduce the impacts of PSPS events. These enhancements include both ongoing and new initiatives informed by feedback from external stakeholders, as required by D.21-06-034 and other regulatory directives.

In 2023, SCE launched the AFN Self-Identification Survey to collect demographic and functional needs data from customers. While the initial data collection was successful, the absence of a centralized repository limited its long-term utility. To address this, SCE initiated a data integration effort in 2024 to systematically capture, store, and manage AFN-related attributes within its customer data systems

As part of this initiative, SCE completed the solution analysis and developed the Systems Requirements Specifications. The team also supported the creation of key technical documentation, including the System Architecture Document (SAD), Test Strategy, and Implementation Plan. By the end of 2024, 50% of the design, build, and testing work had been completed.

To ensure continued progress, SCE launched a targeted campaign in November 2024 to collect survey responses from newly added customers on frequently impacted HFRA circuits.

[109] *See* D.21-06-034 at p. 101.

This campaign played a critical role in identifying customer needs and maintaining momentum toward full integration.

Integrating AFN characteristics across internal systems will significantly enhance SCE's ability to identify and support vulnerable customers during PSPS events. This integration enables updates to PSPS emergency notification preferences, particularly for premises lacking contact information. The updates include:

- Cross-referencing of survey responses with MBL enrollment to identify potentially eligible customers for targeted outreach.
- Launch of AFN-specific nurture campaigns—automated, data-driven communications that deliver timely and relevant resources to AFN customers.
- In 2024, SCE also expanded its AFN focused engagement with Community-Based Organizations (CBOs), provided direct support services such as food assistance and resiliency items tailored to AFN customers, and launched the All-Hazards Alert System to improve communication accessibility, including American Sign Language support.

These activities reflect SCE's continued commitment to supporting customers with AFN before, during, and after PSPS de-energizations through surveys, stakeholder engagement, and dedicated labor resources.

**b) Spending on AFN Customer Enhancements is Reasonable**

AFN enhancements expenses are reasonable as they are focused on increasing accessibility of communications for customers with disabilities as well as supporting individuals with AFN before, during and after PSPS events as required by CPUC decisions. D.19.05.042 requires SCE to identify customers above and beyond MBL. D.20-05-051 requires SCE to continue identification efforts, develop partnership and collaboration with community stakeholders to outreach and increase education and awareness of resources, and develop a comprehensive plan to address the needs of customers with AFN. Finally D.21.06.034 requires SCE to enhance our communications plans and implement programs

and services to support resiliency for customers that rely on electricity, including those who use durable medical equipment and/or assistive technologies. To accomplish all this, in 2024, SCE recorded $2.142 million in O&M expenses for this sub-activity.

### 7. Customer Research and Education

#### a) Overview

##### (1) Customer Research

SCE continued to conduct customer research to better understand customer attitudes towards and opinions of their PSPS-related experiences, and how SCE can improve the customer experience with PSPS events to ensure customer resilience and safety. The customer research projects include: (1) an annual tracking study which measures awareness of wildfire mitigation efforts, notifications before, during and after PSPS events and resources available to customers to support them during PSPS events. This research also includes feedback from customers with Access and Functional Needs (AFN) to gauge their awareness and usage of programs/services that are available to them when they experience PSPS events to ensure their safety and resilience; (2) post-PSPS event specific Voice of the Customer surveys to capture feedback immediately following a PSPS event; and (3) post-event surveys with customers who interacted with Community Resource Centers/Community Crew Vehicles (CRCs/CCVs) during a PSPS event. SCE also continued to utilize Axciom demographic data to enhance its analysis of customers impacted by PSPS events. Additionally, SCE leveraged automated tools to streamline the reporting of customer survey feedback, incorporating visualization dashboards and verbatim analysis to better understand customer experiences and measure the impact of PSPS on the customer experience and perception of SCE. SCE will also conduct customer research to enhance specific aspects of its PSPS program as emergent needs arise.

##### (2) Marketing Automation and Personalized Education

SCE continued to enhance its marketing systems to deliver personalized, timely, and relevant communications that support customer understanding of wildfire and PSPS events, preparedness actions, and available resources. By monitoring and enhancing the automated residential onboarding journey, SCE ensured new customers in HFRA received critical preparedness information

and program awareness. In 2024, SCE initiated the expansion of this journey to include transfer/returning customers and single-account non-residential customers, thereby extending the reach of vital PSPS communications. To support future scalability and improve targeting capabilities for large multi-account non-residential customers SCE procured an additional software module and maintained the necessary platforms and integrations for real-time data ingestion and orchestration. These targeted investments enable SCE to continue delivering and further enhance communications tailored to each customer's specific circumstances. The investments in 2024 enable the future build out of targeted, automated suppression of non-essential messaging during PSPS events—ensuring customers receive only the most relevant and actionable information.

**b) Spending on Customer Research and Education Was Reasonable**

SCE's spending on Customer Research and Education was reasonable and necessary to determine if PSPS-impacted customers (including those with Access and Functional Needs customers) are aware of available programs and resources that help to reduce PSPS impacts. The cost for this research is consistent with typical market research projects that capture customer feedback about their experiences and sentiment.

SCE's spending on work scope that enabled expansion of its marketing systems ability to deliver more tailored and personalized customer education and outreach is also reasonable and included: (1) continued licensing and maintenance of Adobe and Azure platforms to support real-time, personalized customer communications; (2) expansion of the automated onboarding journey to include small business and transfer/returning customers, thereby increasing the reach and equity of PSPS-related messaging; and (3) ongoing maintenance of system integrations that enable the orchestration of these customer journeys. These activities build upon the demonstrated success of SCE's personalization pilot,[110] which showed measurable improvements in customer satisfaction and engagement. The associated costs are directly proportional to the expansion of PSPS-related communications and

[110] SCE's Personalization Pilot is a targeted customer engagement initiative designed to test and validate the impact of delivering tailored communications and experiences to new residential customers. It leverages customer data to curate onboarding journeys, personalize content across email and web channels, and optimize enrollment in key services such as paperless billing, outage alerts, and autopay.

represent prudent, incremental investments necessary to enhance public safety outreach and ensure timely, relevant information reaches all impacted customer segments. In 2024, SCE recorded $2.016 million in O&M expenses for this sub-activity.

### 8. Disability Disaster & Access Resources (DDAR)

#### a) Overview

In accordance with D.21-06-034,[111] SCE established the DDAR pilot in 2023, which offers tailored solutions to customers with AFN, including backup battery options, accessible transportation and lodging, fuel vouchers, and other pertinent support.

#### b) Spending on DDAR Was Reasonable

In 2024, the California Foundation for Independent Living Centers (CFILC) achieved significant operational milestones through the Disability Disaster Access and Resources (DDAR) Program. A total of 488 DDAR applications were processed, directly supporting 351 customers enrolled in the Medical Baseline (MBL) program. Additionally, 197 backup batteries were successfully deployed to eligible customers, enhancing their resilience during power disruptions.

CFILC demonstrated strong community engagement by executing 403 outreach and education events, reaching an audience of over 35,000 participants. These events emphasized inclusive emergency preparedness and PSPS readiness.

The DDAR Program provided support during 20 PSPS activations in 2024. The DDAR Program delivered targeted support through:

1) 5 customer escalations
2) 2,816 wellness checks
3) 25 battery deliveries
4) 7 hotel accommodations
5) 13 $50 food gift cards distributed
6) 7 accessible transportations

[111] *See* D.21-06-034 at p. A-10.

The program also delivered comprehensive preparedness training, covering:

1) Development of personalized emergency plans
2) Evacuation and accessible transportation planning
3) Distribution of localized community resource lists
4) Assembly of disability-specific go-bags
5) Enrollment in backup battery programs
6) Medical Baseline Program registration
7) In-event support services (e.g., hotel stays, transportation, food and fuel assistance)

These outcomes reflect CFILC's continued leadership in advancing equitable disaster readiness and response for individuals with access and functional needs. In 2024, SCE recorded $1.609 million in O&M expenses for this sub-activity.

**9. PSPS 211 Service**

**a) Overview**

In accordance with D.21-06-034, the Commission requires electric IOUs to administer a program to support resiliency for customers with AFN in preparation for and during PSPS de-energizations. As a result, the electric IOUs developed the PSPS 211 Service Program as a statewide solution that provides 24/7 live support during PSPS de-energizations including information and resource referrals for customers with AFN. In 2024, SCE continued to contract with 211 to provide resources and services to individuals with AFN before, during, and after PSPS events.

**b) Spending on PSPS 211 Service Was Reasonable**

SCE's 2024 spending on PSPS 211 service was reasonable because these activities were necessary to mitigate the impacts of PSPS in preparation for and during PSPS de-energizations on SCE's most vulnerable customers. 211 Services are the sole provider of a statewide solution provided by the three major electric IOUs in the state, including SCE, San Diego Gas & Electric Company and Pacific Gas & Electric Company, with five call centers across our territory that address unique needs for the most vulnerable customers during extended PSPS outages offering

temporary accommodations, transportation, and food assistance. The scope of work included: (1) Needs Screening: assesses customer's AFN needs; (2) Care Coordination: provides individualized emergency planning and connects customers to local resources; (3) Education and Outreach; and (4) Support during PSPS de-energizations, including temporary accommodations, transportation, and food support. In 2024, SCE recorded $1.589 million in O&M expenses for this sub-activity.

**10. Emergency Outage Notification System**

**a) Overview**

Emergency Outage Notification System (EONS) serves as the primary communication tool for keeping customers informed before, during, and after emergency outages, including PSPS events. Customer notifications are delivered in their preferred language, with PSPS communications currently available in twenty-three of the most prevalent languages in SCE's service territory.

**b) Spending on Emergency Outage Notification System Was Reasonable**

EONS spending supports licensing, messaging, and enhancements that improve emergency outage communications, including PSPS events. Key updates include new and revised notification templates, faster file polling for campaign automation, translation improvements, and expanded messaging capacity to support multilingual outreach. In 2024, SCE recorded $1.499 million in O&M expenses for this sub-activity.

**11. PSPS Newsletter**

**a) Overview**

In 2024, SCE spent $1.2 million to implement a customer-centric, integrated marketing campaign that delivered consistent messaging across traditional and digital channels, driving Wildfire/PSPS customer education and proactive preparedness behavior. Customers were placed into specific segments and journeys[112] were designed relevant to each segment before, during, and after a

[112] Marketing journey is the step-by-step path a customer takes from first learning about a product or service to becoming a loyal user, guided by targeted communications that inform, engage, and support them along the way.

PSPS event. PSPS preparedness messaging was amplified through inclusions and cross promotions on the SCE bill and in the Residential Welcome Journey[113] that new customers receive 60 days after their electric service is activated. SCE's integrated marketing campaign included its PSPS Newsletter, which is emailed annually to all customers in both HFRA and non-HFRA regions with tailored content and mailed to customers who do not have an email address on file, or whose deployed email was undeliverable. The HFRA version highlighted wildfire mitigation efforts and strategies to reduce PSPS impacts, along with customer care resources, while the non-HFRA version focused on outage safety tips and emergency preparedness guidance. Electronic copies of both newsletter versions were made available in 19 prevalent languages (including English) on SCE's Wildfire Communications Center webpage on SCE.com.

**b) Spending on PSPS Newsletter Was Reasonable**

Spending on SCE's 2024 integrated marketing campaign and PSPS newsletter efforts was reasonable and demonstrates compliance with D.20-03-004, Ordering Paragraph 1 which requires that SCE conduct community awareness and public outreach before, during, and after wildfire season in the languages that are prevalent in SCE's service area. In 2024, SCE recorded $1.210 million in O&M expenses for this sub-activity.

**12. RSE**

SCE developed RSEs for the following sub-activities: In-Event Battery Loan Pilot (3,012), DDAR (43), PSPS 211 Service (28), CCBB (21), Portable Power Stations and Generator Rebates (4), and Resiliency Zones (1). The RSEs for some these sub-activities are relatively low because the PSPS risk score is less than SCE's wildfire risk score. However, there is still significant PSPS risk that SCE is required to mitigate, and these are activities that effectively address those risks, were recommended by stakeholders, and/or required by the Commission or the Legislature. SCE did not develop RSEs for the remaining sub-activities because they do not directly reduce the consequence or

[113] The Residential Welcome Journey is an automated onboarding campaign for new SCE residential customers. It delivers a series of personalized emails over the first 60 days of service to help customers set up their accounts, understand their bills, and learn about programs like CARE, FERA, and emergency preparedness.

likelihood of PSPS events (e.g., the PSPS Newsletter provides information in support of customer awareness and preparedness for such events but does not directly reduce PSPS consequence in itself). SCE executes them to enable current or future PSPS capabilities and/or to meet PSPS-related compliance requirements.

## F. Alternative Technologies (Emerging Technologies)

### 1. Overview

Alternative Technologies (currently known as Emerging Technologies) are technologies that, if successful, may be adopted to mitigate wildfire risk and advance SCE towards achieving its long-term wildfire mitigation objectives.

Table VI-34 and Table VI-35 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total recorded O&M expenses for Alternative Technologies in 2024.[114]

***Table VI-34***
***Alternative Technologies***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[115]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers | Cost Recovery Account |
|---|---|---|---|---|
| Alternative Technologies | $ 133 | $ 1,047 | pp. 253; 266-270; 274-276; 278; 469-471; 473 | WMPMA |
| Alternative Technologies | $ - | $ 10 | | FRMMA |
| **TOTAL** | **$ 133** | **$ 1,057** | | |

[114] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[115] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p. 11, FN 30.

***Table VI-35***
***Alternative Technologies***
***2024 Total O&M Expenses by Sub Work Activity[116]***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M | Cost Recovery Account |
|---|---|---|
| Transmission Open Phase Detection | $ 830 | WMPMA |
| Remote Grid Feasibility Study | $ 142 | WMPMA |
| Early Fault Detection | $ 56 | WMPMA |
| High Impedance Relay Evaluation | $ 13 | WMPMA |
| Ground Level Distribution System (GLDS) | $ 10 | FRMMA |
| Distribution Open Phase Detection | $ 6 | WMPMA |
| Rapid Earth Fault Current Limiter | $ 1 | WMPMA |
| **TOTAL** | **$ 1,057** | |

Table VI-36 and Table VI-37 below show the capital expenditures authorized in Track 4 of the 2021 GRC for 2024, as well as the total recorded capital expenditures for Alternative Technologies in 2024.

***Table VI-36***
***Alternative Technologies & Distribution Fault Anticipation***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditure[117]***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Alternative Technologies | $ 24,750 | $ 27,883 | pp. 253; 266-270; 274-276; 278; 469-471; 473; 750 |

[116] SCE recorded costs of $60.89 in Alternative Technologies for the Remote Grid Feasibility Study; however, since the table is in thousands, it rounds to ($0). The costs were applied to a fee to negotiate with a landowner regarding installation of remote grid.

[117] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

***Table VI-37***
***Alternative Technologies & Distribution Fault Anticipation***
***2024 Total Capital Expenditures by Sub Work Activity[118]***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital | |
|---|---|---|
| Ground Fault Neutralizer and Grounding Conversions | $ | 25,385 |
| Transmission & Distribution Early Fault Detector | $ | 2,436 |
| Transmission Open Phase Detection | $ | 52 |
| Distribution Fault Anticipation Rollout | $ | 10 |
| High Impedance Relay Evaluation | $ | 0 |
| **TOTAL** | **$** | **27,883** |

Alternative Technologies are exploratory in nature, and the potential benefits of the technologies continue to be evaluated. SCE evaluated these technologies to better understand the technology, determine whether they work as intended, and/or can be effectively deployed. Alternative Technology projects generally follow a four-step framework: evaluation (step 1); pilot (step 2); small-scale deployment (step 3); and programmatic application as mitigations or for use in the normal course of business (step 4).

The Alternative Technologies, below, span a large range of wildfire mitigation applications, including improvements to grid hardening initiatives and system protective features. Some of these technologies represent unique and independent mitigations, while others supplement or improve deployment of existing mitigations. Particularly with technologies offering system protection and system monitoring, multiple technologies may be considered or adopted to achieve optimal results. The layering of systems to lower or prevent ignitions is common across many of the wildfire mitigation emerging technology activities. Alternative Technologies consists of the following sub-activities:

- Rapid Earth Fault Current Limiter, Ground Fault Neutralizer and Grounding Conversions – See Section VI.F.3, below.

[118] The High Impedance Relay Evaluation costs (rounded to $0) relate to $38.50 that was inadvertently recorded to the High Impedance Relay Evaluation sub-activity. This does not impact SCE's overall cost recovery request.

- Distribution Early Fault Detection (D-EFD) and Transmission EFD (T-EFD) – See Section VI.F.4, below.
- Transmission and Distribution Open Phase Detection (TOPD and DOPD) – Open Phase Detection is a technology that focuses on reducing ignition risk associated with wire-down incidents by detecting and isolating an energized line separating before it contacts the ground. For TOPD, SCE monitored the performance of the TOPD detection logic for previously installed units and deployed trip functionality on five lines where alarming mode was previously applied. For DOPD, SCE analyzed information from its existing installations of DOPD with O&M costs recorded to support alarm investigations. In 2024, SCE recorded O&M expenses of $0.836 million for this sub-activity.
- Remote Grid Feasibility Study – SCE conducted feasibility assessments for deploying remote grids at select locations for wildfire risk reduction. Remote grid systems are permanently islanded power systems that are co-located with the customer loads. Being permanently islanded eliminates the wildfire risk from overhead facilities that must traverse HFRA to service the customer load. In 2023, SCE implemented four feasibility studies—one completed and three initiated—to determine whether a remote grid is a viable option. In 2024, SCE conducted eight feasibility studies for sites on Academy, Carmelita, Rhoda, Fano, Horntoad circuits, and three sites on Catalina Island, and recorded O&M expenses of $0.142 million for this sub-activity.
- High Impedance Relay Evaluation – The High Impedance (Hi-Z) scheme is a protective algorithm within the relay that can sense low current magnitude fault conditions that are often associated with downed wire or arcing events (i.e., vegetation contact or contact with a bird's nest that causes a prolonged electric discharge). In 2024, SCE monitored the performance of its existing Hi-Z relay installations. Monitoring the installed Hi-Z relay units includes the deployment of

field crews for event investigations with relay data retrieval, and data evaluation. SCE recorded O&M expenses of $0.013 million for this sub-activity in 2024.

- Ground Level Distribution System (GLDS) – is an above ground cable in conduit system encased in fire retardant geopolymer concrete, which could provide a potential alternative underground construction methodology that overcome civil challenges. The system is anchored into the ground using special screws designed for anchoring into the soil. The geopolymer concrete is a mixture of sand, geopolymer cement powder precursor and liquid reagent. In 2024, SCE participated in a joint utility testing to evaluate performance of the technology for traffic and impact loading, heat dissipation, temperature, electromagnetic fields, and ampacity. In 2024, SCE recorded O&M expenses of 0.010 million for this sub-activity.
- Distribution Fault Anticipation (DFA) – DFA uses intelligent electronic devices that monitor electrical system measurements to recognize current and voltage signatures indicative of potential incipient failures. This capability supports timely completion of remedial actions to avoid faults and potentially reduce ignition incidents. Due to its ability to remotely access and retain data for grid events. DFA also provides SCE with access to substantial amounts of fault data for focused analysis to support potential repairs and/or mitigations. In 2024, SCE recorded capital expenditure of $0.010 million on closing out activities carried over from 2021 DFA unit installation. In 2021, SCE purchased 155 DFA units and installed and commissioned 130 units in HFRA to increase circuit coverage and expand the sample size for evaluation of DFA technology. The remaining 25 DFA units were commissioned in 2022, which, in addition to the 130 units commissioned in 2021, expanded the sample size of data collected to validate the technology on SCE's network. SCE commissioned the remaining 25 DFA units in 2022 because it had already purchased the equipment, performed the engineering

analysis, and identified the deployment location for all 155 DFA units in 2021. SCE found that DFA units can detect certain electrical-driven issues (e.g., fault-induced conductor slap) and has additional benefits for public and employee safety such as detecting precursors to underground component failures. The capability provided by DFA, and DFA-like devices, for near real time monitoring to detect and locate degraded equipment along with improvements for fault locating remains part of SCE's broader wildfire mitigation strategy. SCE continues to explore technology options and the potential for combining technologies to accomplish the desired functionality to identify precursors to ignition drivers to inform targeted maintenance to reduce ignition risks.

**2. Spending on Alternative Technologies Was Reasonable**

In 2024, SCE recorded O&M expenses of $1.057 million and capital expenditure of $27.873 million for Alternative Technologies activity. Piloting wildfire mitigation technologies which are new to SCE is reasonable given that such technologies can potentially improve SCE's mitigation portfolio but are not yet proven enough to deploy at a wide scale. For example, SCE conducts visual inspection of its assets to identify the need for maintenance actions. EFD may provide the ability to detect defects invisible to the naked eye that, if not remediated, could pose an ignition risk. Another example is the Rapid Earth Fault Current Limiter (REFCL), which, when deployed with covered conductor and other mitigations, in certain circumstances may potentially provide almost as much wildfire risk reduction as targeted undergrounding (SCE discusses the reasonableness of its REFCL/Ground Fault Neutralizer work in more detail, below). SCE evaluates a variety of different technologies and selects only those that appear promising and have the potential to improve the wildfire mitigation effectiveness of its initiative portfolio. An example of this is with the GLDS technology, where SCE's 2024 spend focused on evaluation. The evaluation at this phase suggests the technology may help minimize undergrounding construction costs in some applications though maturity of the technology may impact next steps for SCE to conduct a field pilot of the technology. Because these technologies were new (or unknown) to SCE in 2021 (2021 recorded costs were the basis for SCE's

Track 4 forecast for 2024), it is reasonable for SCE to spend more on promising technologies as it becomes aware of them.

### 3. Rapid Earth Fault Current Limiter (REFCL), Ground Fault Neutralizer (GFN), and Grounding Conversions (GC)

#### a) Overview

Rapid Earth Fault Current Limiter (REFCL) is a family of technologies that detects ground faults and rapidly reduces the fault current to a level much lower than traditional powerline designs, thereby reducing the possibility of ignitions from faults. REFCL devices can typically detect ground faults as small as a half ampere on one phase in a three-phase powerline. These devices almost instantly reduce the voltage on the faulted line while boosting the voltage on the two remaining phases to maintain service for customers while extinguishing arcs. SCE explored two approaches to implement REFCL technology: Ground Fault Neutralizer (GFN) and Grounding Conversions (GC). GFNs are the preferred REFCL design for large substations because larger systems produce larger fault currents, which benefit more from the additional equipment used in a GFN. Grounding Conversion projects are utilized on smaller substations or applied at the distribution circuit level.

In 2024, SCE spent $22.842 million in capital expenditures on design, construction, commissioning, and material purchases for GFN projects. Some of these costs were also in support of design, construction, and material purchases to support GFN projects planned for commissioning beyond 2024. SCE's Acton and Phelan substations were both commissioned and placed in service in 2024 with approximate spends of $1.54 million and $3.67 million respectively for 2024. Approximately $4.86 million in capital costs were associated with the Banducci GFN project, which was in construction at 2024 year end. Since GFN projects typically have a completion time of 3-4 years, most of the remaining capital costs, approximately $12.77 million, were in support of future year GFN projects. SCE incurred $2.543 million in capital expenditures including design and construction of three Grounding Conversion projects for SCE's Dysart, Pheasant and Stoneman circuits.

**b) Spending on REFCL, GFN and GC Was Reasonable**

A substantial number of public safety hazards from high-voltage electrical equipment, including downed-wire incidents, energized-conductor contacts, events involving underground equipment failures, arc flashes, and fire ignitions, come from ground faults. Ignitions caused by single phase to ground faults can be mitigated with the use of REFCL, which reduces fault energy by a factor of 100,000 or more compared to typical utility designs. Australian utilities have demonstrated that REFCL can detect and act upon ground faults as small as a half ampere, making it substantially more sensitive than traditional protection. Testing from the Australian state of Victoria showed that REFCL has a 90% chance of preventing an ignition from a ground fault, even if there is direct contact of energized conductor with dry grass or vegetation.[119]

SCE did not include this activity in its Track 4 forecast for 2024 (based on 2021 recorded costs), because SCE was still exploring and understanding the technology in 2021. In 2021, SCE completed a GFN at Neenach substation, with encouraging results, leading to further exploration of the technology. Regulatory guidance has also encouraged SCE and other California IOUs to accelerate REFCL pilot programs,[120] and SCE has included targets related to installing REFCL in its approved WMPs. In its approved 2023-2025 WMP, SCE had a target to construct one GFN installation and four GC projects in 2024. Specifically, SCE had intended to complete one GFN at its Banducci substation and four GC projects on Stoneman, Dysart, Pheasant, and Brydon circuits. In 2024, SCE initiated construction of the GFN at its Banducci substation and Stoneman circuit GC installation. Construction was completed in 2024 for Dysart and Pheasant GC projects, with design being initiated for the Brydon GC. However, construction prerequisites, such as permitting approval, were not obtained to finalize design and initiate construction. Deployment, at this point, is somewhat limited as SCE analyzes the implementation and performance of this technology on its system. While SCE anticipates that REFCL

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[119] *See* the Workpaper REFCL Cost Benefit Analysis Report and REFCL Functional Performance Review submitted in this proceeding.

[120] *See* the Workpaper Office of Energy Infrastructure Safety's "Final Evaluation of 2021 WMP Update SCE" dated August 18, 2021, pp. 22-30, submitted in this proceeding.

will be extremely effective in further mitigating the risk of wildfires in certain circumstances, SCE is still learning how to best construct REFCL units and still assessing their actual in-service performance.

**4. Distribution Early Fault Detection (D-EFD) and Transmission Early Fault Detection (T-EFD)**

**a) Overview**

EFD technology continuously monitors lines and aids SCE in proactively detecting undesirable, degraded, or pre-failure system conditions, such as severed strands on a conductor, vegetation contact, or deterioration of insulating material (known as tracking). The EFD sensors can detect issues that may not be identifiable from traditional visual inspections, such as insulation breakdown inside a transformer or tracking/arcing of equipment underneath wildlife covers. EFD monitoring offers the ability to perform targeted inspections based on electrical activity alerts in addition to typical time-based visual inspections.

**b) Spending on Early Fault Detection Was Reasonable**

In 2024, SCE recorded capital expenditures of $2.436 million for the Transmission and Distribution Early Fault Detection activities. The capital expenditures include design, construction, and commissioning of the EFD units. In 2024, SCE deployed 53 EFD units (50 for D-EFD) and 3 for T-EFD), paid its operational service fee and other related fees (e.g., cellular communication service, cloud service) for existing installations, conducted event investigations, and performed EFD data analysis and evaluation and program support. Approximately 85% of the T-EFD spend for 2024 was for design and material in support of 18 installations forecast for future construction.

**5. RSE**

SCE developed RSEs for the following sub-activities: Ground Fault Neutralizer (41,403),[121] EFD (17,422), and Transmission Open Phase Detection (224). SCE did not develop RSEs

[121] SCE notes that the RSE for Ground Fault Neutralizer is based on the completion of the forecasted installations, some of which are still in progress.

for the remaining sub-activities because they are too new and/or limited in scope to develop a meaningful RSE.

## G. Enhanced Situational Awareness

### 1. Overview

Comprehensive situational awareness is fundamental to SCE's ability to make informed operational decisions, particularly during periods of elevated fire risk that may lead to wildfire ignitions and/or PSPS activity. To increase situational awareness, SCE created the Situational Awareness Center (SA Center) where weather forecasts, analytics, and hazard advisories to support the execution of core business functions are developed. Additionally, the Fire Sciences team includes a fire scientist and fire meteorologists who assess fire potential daily and provide fire spread modeling analytics during PSPS events and otherwise upon request, along with meteorologists on the weather services team. Enhanced situational awareness provides a better understanding of the nuances associated with critical system operations, including granular weather conditions across the system and other external factors that affect the daily operation of the grid and increase SCE's ability to effectively respond to emergencies. Additional tools such as weather stations, high definition (HD) cameras, and access to high resolution weather and fire modeling products, made possible through high-performance computing cluster (HPCC) technology, are utilized by SCE's Fire Science team and meteorologists to enhance situational awareness. These tools increase SCE's capacity to better forecast elevated weather conditions and potential wildfire activity, which in turn lead to better decision-making information during regular operations and emergencies and are used by our fire management officers.

Table VI-38 and Table VI-39 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for Enhanced Situational Awareness.[122]

[122] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

***Table VI-38***
***Enhanced Situational Awareness***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[123]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Enhanced Situational Awareness | $ 3,412 | $ 9,827 | pp. 445-517 |
| **TOTAL** | **$ 3,412** | **$ 9,827** | |

***Table VI-39***
***Enhanced Situational Awareness***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Weather Stations | 5,518 |
| HD Cameras | 3,432 |
| Wildfire Response, Modeling, Analysis, & Weather Forecasting | 878 |
| **TOTAL** | **$ 9,827** |

Table VI-40 and Table VI-41 below show the capital expenditures authorized in Track 4 of the 2021 GRC for 2024, as well as the total capital expenditures for Enhanced Situational Awareness.

[123] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p. 11, FN 30.

***Table VI-40***
***Enhanced Situational Awareness***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditures[124]***
***($ in thuosands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Enhanced Situational Awareness | $ 2,023 | $ 2,171 | pp. 445-517 |

***Table VI-41***
***Enhanced Situational Awareness***
***2024 Total Capital Expenditures by Sub Work Activity[125]***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| Weather Stations | $ 2,411 |
| HD Cameras | $ (240) |
| **TOTAL** | **$ 2,171** |

To maintain situational awareness, SCE staffs its Situational Awareness Center with meteorologists and fire scientists that regularly forecast weather and fuels conditions. In addition to staffing, enhanced situational awareness is made further possible through SCE's weather station network and HD camera installations. These tools and expertise increase SCE's ability to forecast, prepare for, and respond to wildfire-related risks by improving decision-making around the impacts of extreme weather conditions on grid operations, such as PSPS. Enhanced Situational Awareness is comprised of the following sub-activities:

- Weather Stations – See Section VI.G.3, below.

[124] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

[125] HD Cameras sub-activity shows a credit ($240K) due to an automatic accrual reversal for an accrual made in December 2023 for $165,195. Additionally, in September 2024, SCE inadvertently recorded a journal entry crediting the HD Camera sub-activity and debiting the Weather Station sub-activity, for $165,195, which does not impact the overall recorded capital expenditure amount for GRC Enhanced Situational Awareness activity. The above-mentioned two credits resulted in a total credit of ($330,390), which is offset by the actual recorded expense of $90,046 in the HD Cameras sub-activity.

- HD Cameras – See Section VI.G.4, below.
- Wildfire Response, Modeling, Analysis (Analytics & Weather Forecasting) – SCE meteorologists, fire scientists, and data scientists advance fire science and weather modeling capabilities to support situational awareness, PSPS execution, and various wildfire mitigation efforts. The above identified personnel help implement technology advancements, such as machine learning, probabilistic forecasting, and remote sensing, which support SCE's goal of reducing the threat of wildfires associated with utility equipment. Furthermore, staff are needed to operationalize new modelling techniques and for around-the-clock operational support when there is an active PSPS event. In 2024, SCE maintained staff to provide continuous situational awareness of incoming fire weather threats, as well as building new technology capabilities to reduce the risk of wildfires associated with utility equipment. In 2024, SCE recorded $0.878 million in O&M expenses for this activity.

**2. Spending on Enhanced Situational Awareness Was Reasonable**

In 2024, SCE's recorded O&M expenses of $9.827 million and $2.171 million in capital expenditures were reasonable to provide vital support to wildfire mitigations, situational awareness, weather forecasting, and PSPS execution. With these measures, SCE can more accurately monitor weather and fuel to inform when SCE should take certain measures to mitigate against fire weather conditions (e.g., enable Fast Curve settings, block automatic reclosing, AOC inspections) and to more precisely deploy PSPS de-energizations and re-energizations. They also allow SCE and stakeholders to track real time weather as well as the progression of wildfires.

SCE incurred incremental spend in 2024 because of the need for increased weather stations, HD camera deployment, and necessary staffing. Also, as noted in its Track 4 testimony: "SCE anticipates actual O&M expenses in 2024 to be above 2021 recorded costs but for purposes of this Track 4 is requesting the 2021 last year recorded amount. SCE's 2024 forecast is expected to exceed 2021 recorded amounts because SCE plans to expand this work, including Wildfire response, Modeling,

Analysis, and Weather Forecasting staffing needs."[126] These incremental costs emerged because of lessons learned and experience gained with these sub-activities after the 2021. For example, Enhanced Situational Awareness activities for wildfire mitigation substantially increased in and after 2021, as SCE realized that it needed a greater concentration of weather stations in its service area for more granular weather data, to provide better circuit segmentation and real-time weather reads. Relying on publicly available weather stations is insufficient due to sparse locations and the increments in which the data is relayed (slower than 10 minutes). SCE also observed there were blind spots in its existing HD camera network viewshed that could hamper monitoring SCE infrastructure, communities and wildfires. Increased staffing was also deemed necessary to support the increasing portfolio of wildfire mitigation and PSPS activities. While SCE considered alternatives to HD cameras, such as reliance on satellite detection, web cameras, and other agencies' cameras (e.g., USFS or CAL FIRE data), these alternatives would provide less timely information and sometimes less granular information about the wildfire locations than the data that could be gathered from HD cameras deployed by SCE. With the increase in weather stations and requirement to keep improving weather modelling, there is no other alternative other than to increase staffing to help with monitoring weather conditions, making accurate weather forecasts, and improving weather modeling. See Section IV.G.3.bVI.G.3.b), below, for considered alternatives for weather stations.

Finally, SCE's 2023 costs related to Enhanced Situational Awareness were recovered in full, pursuant to a settlement agreement that the Commission approved in D.25-06-017, which did not include any reductions to WMPMA costs, which is where SCE's Enhanced Situational Awareness costs were and are recorded..

**3. Weather Stations**

**a) Overview**

SCE's weather stations provide data including sustained wind speed, wind gust speed, direction of wind, humidity, and temperature. Adding these weather stations within SCE's service

[126] *See* A.19-08-013 at Exhibit No. SCE Tr. 4-02, pp. 197-198; SCE's workpaper submitted in this proceeding.

area has increased its situational awareness for severe weather and high wind events, to include PSPS events, and provides more granular data to existing weather forecast models. This increases SCE's ability to safely and efficiently monitor adverse weather conditions.

Observations from SCE's weather stations are the foundational data used to determine if a circuit or segment should be de-energized during a PSPS event. After de-energization, the weather station data is then invaluable to know when it is safe to perform necessary operations to be able to re-energize a circuit. Weather station observations are also key inputs into machine learning (ML) models. The ML models help reduce forecast bias (the average difference between forecast and observed values) by using SCE's network to gain an understanding of the typical forecast error in past events and applying that knowledge to predictions from its in-house models. SCE's weather stations are also being used in an academic partnership to improve situational awareness during PSPS and non-PSPS events. The weather data is being used to develop an ML-based model that fills gaps in the observations, allowing for improved monitoring of storm conditions. This effort will allow SCE to make better informed decisions to keep its customers and employees safe during elevated fire weather conditions.

In 2024, SCE installed 55 weather stations. The weather station placement allows for granular information across different topography (i.e., a peak or valley), provides real-time data for high-impact areas, and provides data for decision-making to support circuit segmentation. Circuits can traverse multiple topographies, so sectionalizing circuits allows for the de-energization of a portion of the circuit, limiting the number of customers impacted. In addition, if winds have subsided in a particular location, but not the complete circuit area, then SCE can re-energize a portion of a circuit, again minimizing customer impacts.

**b) Spending on Weather Stations Was Reasonable**

In 2024, SCE recorded $5.518 million in O&M expenses related to maintaining SCE's weather station network that included costs for material, services and labor related to routine maintenance, repairs, part replacements, ongoing vendor support, and communication data plans. In 2024, SCE recorded $2.411 million in capital expenditure. The bulk of the capital expenditures included station material, installation labor, and a satellite network enhancement pilot. SCE's expansive network

of approximately 1,780 weather stations provide heightened situational awareness of risks to SCE's service territory and systems. SCE will continue to maintain and enhance the extensive network of weather stations and associated meteorological functions to provide situational awareness to SCE as well as to external parties.

SCE's 2024 spend on weather stations was reasonable because monitoring and analyzing weather data at a granular level across circuits in HFRA is crucial to inform critical operational decisions such as deploying PSPS protocols during elevated weather conditions.

Weather conditions can differ significantly at any given time, within the HFRA, in SCE's service area, due to the large size and diverse topography involved. For example, Southern California's mountains have rapid elevation changes and differing canyon orientations, which create localized weather zones. Through continued practice, SCE has learned the value in IMT personnel relying on real-time weather data from weather stations to inform initiation of PSPS events, customer notifications, and de-energization decisions for SCE circuits and circuit segments. Lessons learned (more granular forecasting, real-time reads, segmentation, machine learning) in and after 2021 (the year used as the basis for SCE's forecast in Track 4 for 2024 costs) dictated the needed expansion of the weather station network.

To improve the resolution of existing weather models and access valuable granular real-time information during wildfire risk conditions, SCE needed a denser population of weather stations. A higher density of weather stations allows SCE to validate real-time conditions in the field during elevated fire conditions. A more granular understanding of weather allows for better segmentation of circuits. SCE can sectionalize circuits and reduce the scope of PSPS events, thereby reducing the impact on customers and communities. This, in turn, improves the accuracy and precision of PSPS activations, and de-energization and reenergization decisions. Adding weather stations to transmission circuits also helps improve the visibility of the service area for better forecasting and PSPS decision-making. It provides more granular weather data to inform SCE's situational awareness and forecasting of potentially dangerous winds and elevated fire potential. Accordingly, SCE now has over 1,850 weather stations installed to increase situational awareness and improve the accuracy of weather

forecasting to help optimize the scope of PSPS events. This unanticipated increase led to higher than forecast capital expenditures in 2024.

Prior to 2024, SCE experienced satellite network communication failures that drastically impacted SCE during PSPS events. Due to the importance of the weather station data, SCE piloted new satellite communication modems to identify better communication technology and vendor. Additionally, there was an increase in O&M expenses due to routine maintenance, vendor support, and data plans, all charged on a per-station basis. Due to the enhanced forecasting and decision-making capabilities, SCE learned, through continued PSPS operations, that more weather stations were necessary to operate more optimally and, thus, the increased expenditure over the imputed authorized amount was reasonable.

An alternative to installing weather stations is to deploy more LFOs into the windy areas with handheld kestrel weather stations. However, this option is relatively less safe, cost prohibitive and often less accurate than our weather stations due to the difference in height of measurements. Another alternative to installing SCE's own weather stations is relying on publicly available weather stations. However, there are insufficient publicly owned weather stations, and these public weather stations are often not in the necessary locations, to provide the information SCE requires to operate as impactfully as possible during severe weather and high wind events. Installing and maintaining weather stations ensures SCE is prepared and operating with sufficient situational awareness. Finally, in SCE's 2025 GRC, the Commission approved SCE's forecast for additional weather stations in 2025-2028.[127]

**4. HD Cameras**

**a) Overview:**

SCE's HD camera live feeds aid SCE in more timely information gathering, which has proven critical for asset protection, and provides fire confirmation capabilities to IMTs, both internal and external. To support situational awareness with respect to fuel conditions, help inform PSPS

[127] *See* Decision 25-09-030 pp.440-442.

decision-making, and provide the ability to confirm smoke and/or fire in a location via Artificial Intelligence, SCE maintains a network of 200 HD cameras installed through the University of California, San Diego's (UCSD's) AlertCalifornia (formerly AlertWildfire) system. The live data feeds aid in faster information gathering for fire location, nearby infrastructure, and possible direction of growth. This information is imperative for SCE asset protection as well as for fire departments to assess resource deployment. As noted in SCE's Track 4, "SCE anticipates actual O&M expenses in 2024 to be above 2021 recorded costs but for purposes of this Track 4 is requesting the 2021 last year recorded amount."[128] In 2024, SCE installed 10 HD cameras to better address observed blind spots within its service area, where infrastructure and some wildland urban interface (WUI) areas were unable to be seen in the existing camera viewsheds. Ongoing O&M expenses include data platform subscription fees (website access), network communication fees, routine maintenance, tower lease fees, and Artificial Intelligence for fire confirmations. This helps enhance the HD cameras' ability to send timely and more accurate information on fire activity than can be provided by satellite technology and provide increased visibility of identified blind spots to help SCE fire management staff. It also helps assist fire agency personnel to quickly assess and respond to reported fires more accurately. SCE will continue to evaluate additional HD camera needs as environments evolve. SCE plans to maintain the HD camera network in partnership with UCSD, to provide situational awareness to SCE and to external parties such as fire suppression agencies.

**b) Spending on HD Cameras Was Reasonable**

SCE partners with UCSD to install HD cameras in locations where its Fire Science Team, Fire Management Team, IMT and/or fire agencies provide insight for rural areas needing viewshed to assist in confirming the start of a fire. UCSD installs on towers of opportunity in these remote locations, such as shared communication towers or county owned communication towers. Cameras are not installed on SCE-owned infrastructure. Although SCE has access to fire progression information through other public means (e.g., monitoring news channels and 911 calls) and can dispatch

[128] *See* A.19-08-013 at Exhibit No. SCE Tr. 4-02, p. 197, workpaper submitted in this proceeding.

personnel to determine fire severity, SCE selected to deploy HD cameras to expedite information gathering regarding fire progression. Fire agencies find the HD cameras extremely beneficial for their fire containment and public protection efforts. Furthermore, for fires and other emergencies, SCE's Public Safety Partners are already integrated with the same HD camera networks and notification alerts as SCE for fires in their areas. SCE works with responding fire agencies to coordinate emergency response, damage assessment, and electrical service restoration. In 2024, SCE recorded $3.432 million in O&M expenses. The recorded capital expenditure for HD cameras was ($0.240) million credit due to an inadvertent accrual entry, as described in the Overview section. Also, in SCE's 2025 GRC, the Commission approved SCE's uncontested $0.388 million capital expenditure request for the HD Camera activity.[129]

#### 5. RSE

SCE developed RSEs for the following sub-activities: HD Cameras (658) and Weather Stations (46). Although the RSEs for these sub-activities are relatively low, they provide essential and foundational situational awareness capabilities that are, otherwise, unavailable. SCE did not develop RSEs for Analytics and Weather Forecasting because, while this activity is essential to informing SCE's mitigation strategy and actions, it does not directly reduce the consequences or likelihood of wildfire or PSPS risk events.

### H. Fire Science and Advanced Modeling

#### 1. Overview

SCE's Fire Science program was developed for the purpose of gathering all the latest relevant scientific and technological advancements to help mitigate risks from wildfires associated with utility infrastructure. This involves the integration of multiple scientific disciplines to synthesize and analyze data to help model atmospheric conditions and assess fire potential. Weather and Fuels modeling spans multiple areas, including modeling weather and vegetation conditions, as well as modeling the spread and behavior of wildfires. Modeling atmospheric conditions that can result in

[129] *See* Decision 25-09-030, pp.444.

catastrophic wildfires is a critical component of situational awareness and effective wildfire mitigation planning and execution. It is the foundation of the PSPS program as customer notifications for such events are based on weather and fire potential forecasts. In many ways, Fire Science serves as the basis and foundation for all wildfire mitigation activities within SCE. Many of Fire Science's activities, such as Fire Spread Modeling and Fuel Sampling, are critical to SCE's situational awareness, for PSPS support and day-to-day operations. SCE has used data derived from our weather stations and other sources in combination with fire science and weather and fuels modeling techniques to develop new predictive models that help us focus our wildfire mitigation efforts and strategies more effectively.

Table VI-42 and Table VI-43 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for Fire Science and Advanced Modeling.[130]

***Table VI-42***
***Fire Science and Advanced Modeling***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[131]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Fire Science and Advanced Modeling | $ 3,465 | $ 4,588 | pp. 445-517 |
| **TOTAL** | **$ 3,465** | **$ 4,588** | |

[130] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[131] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

*Table VI-43*
*Fire Science and Advanced Modeling*
*2024 Total O&M Expenses by Sub Work Activity*
*($ in thousands)*

| Sub-Activity | Total Recorded O&M |
|---|---|
| Weather and Fuels Modeling | 2,105 |
| Fire Spread Modeling | 1,480 |
| Remote Sensing | 412 |
| Fuel Sampling Program | 247 |
| Research Projects | 237 |
| Fire Science Enhancements | 108 |
| **TOTAL** | **$ 4,588** |

Table VI-44 and Table VI-45 below show the capital expenditure authorized in Track 4 of the 2021 GRC for 2024, as well as the total capital expenditure for Fire Science and Advanced Modeling.

*Table VI-44*
*Fire Science and Advanced Modeling*
*2024 Track GRC Authorized vs. Total Capital Expenditures*[132]
*($ in thousands)*

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Fire Science and Advanced Modeling | $ 2,046 | $ 189 | pp. 445-517 |

[132] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

***Table VI-45***
***Fire Science and Advanced Modeling***
***2024 Total Capital Expenditures by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| Operational Analytics | $ 189 |
| **TOTAL** | **$ 189** |

SCE's Fire Science and Advanced Modeling activity impacts situational awareness, PSPS, and various grid hardening efforts, all of which support the goal of reducing the threat of wildfires associated with utility equipment. SCE's Fire Science program was developed in 2019 for the purpose of supporting the Fire Science and Advanced Modeling activity. This involves the integration of multiple scientific disciplines to synthesize and analyze data to help model atmospheric conditions and assess fire potential. Weather and fuels modeling spans multiple areas, including modeling weather and vegetation conditions, as well as modeling the spread and behavior of wildfires. Fire Science and Advanced Modeling's activities are critical to SCE's situational awareness, PSPS execution, day-to-day operations, and effective wildfire mitigation planning and execution. It includes the following sub-activities:

- Weather and Fuels Modeling – See Section VI.H.3, below.
- Fire Spread Modeling – See Section VI.H.4, below.
- Remote Sensing – SCE leverages and is implementing remote sensing technology using satellite imagery to collect additional information on weather, fuels, and fire activity to enhance SCE's overall risk modeling, wildfire modeling capabilities, and situational awareness capabilities. In 2024, SCE continued its work with Earth Labs in association with the University of Colorado, Boulder to develop a Vegetation Buildup Index, which is a product that contains a heat map showing

the approximate areas where the dynamic combustibility of fuels is greatest. In 2024, SCE recorded $0.412 million in O&M expenses for this sub-activity.

- Fuel Sampling Program –SCE takes bi-weekly measurements of vegetation moisture at 16 sites across its service area, and in 2024, sampled quarterly at 3 sites on Catalina Island. Fuel sampling consists of physically collecting small portions of the native vegetation, which is then brought to a lab to be weighed, dried, and then weighed again to determine the vegetation's moisture content. To assure the fuels sampling program is properly managed and there is little interruption of data, SCE checks that all samples are collected and analyzed properly and resolves issues that may arise at any of the sites with the vendor as quickly as possible. This helps to ensure that the fuel sampling data is high-quality and will result in better model solutions and outputs. Live fuel moisture sampling provides ground truth observations biweekly that: 1) help assess how receptive the fuels are to fire; 2) help align Fire Potential Index (FPI) values when forecasts of live fuel moisture are misaligned with observations; and 3) help train ML models that provide estimates of live fuel moisture on a grid. These 19 sites were strategically selected to address known gaps in fuel sampling over Southern and Central California. The costs associated with this activity include time to collect the vegetation and to ship and process the samples to a laboratory. In 2024, SCE recorded $0.247 million in O&M expenses for this sub-activity.
- Research Projects (Academic Research Partnerships) – SCE pursues new innovative technologies through strategic academic partnerships to support projects that address California IOUs' efforts to reduce utility caused ignitions and improve situational awareness capabilities as part of its WMP. Continuing in 2024, SCE partnered with the academic community to devise a new method to derive more complete weather risk profiles along infrastructure during PSPS events and to develop machine learning forecast techniques with the University of

California, Santa Barbara. SCE also partnered with the University of California, San Diego/Scripps to evaluate a new medium-range weather forecast data source that leverages a large ensemble prediction system. SCE has partnered with the California Polytechnic State University, San Luis Obispo (Cal Poly-SLO) and SJSU on academic research initiatives through the Wildland Urban Interface Fire Institute and the Wildfire Interdisciplinary Research Center (WIRC), respectively to support projects that address California's IOUs' efforts to reduce utility caused ignitions. In 2024, SCE recorded $0.237 million in O&M expenses for this sub-activity.

- Fire Science Enhancements – SCE continues to enhance its foundational fire science program to support the higher prioritized objectives associated with SCE's wildfire mitigation efforts for more risk-informed decision-making. In 2024, SCE continued to work on a new FPI (to account for the diversity of fuel conditions across the service territory), which is one of the pillars for determining when or if to initiate PSPS. Updates to the Live Fuel Moisture models were made by training the models with two years of fuel sampling data provided by the SCE Fuel Moisture Sampling program and by utilizing publicly available sampling data from fire agencies. In 2024, SCE recorded $0.108 million in O&M expenses for this sub-activity.
- Operational Analytics – Advanced computing hardware is required to expand, maintain, and improve SCE's in-house weather modeling and observing capabilities for PSPS and general storm conditions. Such efforts support SCE's initiatives to evaluate and implement emerging technologies in fire weather forecasting and monitoring space. In 2024, SCE purchased new computing hardware to support new weather visualization capabilities. In 2024, SCE recorded $0.189 million in capital expenditure for this sub-activity.

### 2. Spending on Fire Science and Advanced Modeling Was Reasonable

SCE's Fire Science and Advanced Modeling activity includes multiple projects and sub activities that affect situational awareness, PSPS, and various grid hardening efforts, all of which either indirectly or directly support the goal of reducing the threat of wildfires associated with utility equipment. As discussed above, SCE's Track 4 forecast for 2024 was based on 2021 recorded costs. Since then, SCE learned, through its experience implementing its wildfire mitigation portfolio, it needed more granular and more accurate weather, fuels, fire spread modeling, and fire potential forecasts to more effectively deploy mitigations, such as detailed asset inspections and PSPS. Accordingly, SCE developed new products, such as the fuels index and fire behavior matrix, and engaged in partnerships with academic institutions. Additionally, some O&M expenses were transferred from another OU for subscription costs with a third-party vendor. These new endeavors and the transfer explain much of the difference between the $4.588 million recorded the imputed authorized amount for this GRC activity. SCE considered not advancing such capabilities but ultimately concluded that the advances in fire science and modeling were too important to wildfire mitigation and PSPS execution to forgo. Since SCE's needs related to atmospheric modeling are very specific and customized data solutions are not available from public entities and are scarce amongst private sources, other alternatives were not considered.

### 3. Weather and Fuels Modeling

#### a) Overview

SCE's Weather and Fuels modeling activity spans multiple areas, including modeling weather and vegetation conditions, as well as modeling the spread and behavior of wildfires. Modeling atmospheric conditions that can result in catastrophic wildfires is a critical component of situational awareness and effective wildfire mitigation planning and execution. It is the foundation of the PSPS program as customer notifications for such events are based on weather and fire potential forecasts as well as grid operations. Knowledge of when and where severe weather conditions will impact SCE's infrastructure is important for an appropriate proactive response. In 2024, SCE maintained its in-house weather forecast system, including procurement of the European Centre for Medium-Range Weather

Forecasts data. SCE expanded its machine learning forecast capabilities to additional locations for improved PSPS planning. A total of 441 new machine learning forecast locations were added in 2024, and all existing machine learning forecast locations were retrained based on recent observations. SCE also worked with its modeling vendor to evaluate new machine learning forecast techniques using its ensemble forecasts as input to improve machine learning forecast accuracy. These new techniques were implemented in 2024. During 2024, SCE's approximately 40-year historical weather dataset was also extended.

**b) Spending on Weather and Fuel Modeling was Reasonable**

SCE's in-house weather and fuels modeling is foundational to PSPS and grid operations. Because knowing when and where severe weather conditions will impact SCE's infrastructure is important for an appropriate proactive response, it is vital that improvements to all in-house modeling capabilities continue. Many of these improvements will be driven by AI technology, statistical methods, and new dynamic models. In 2024, SCE continued to focus on improvements to fire weather variable forecasts at site specific locations using machine learning modeling, expanding these machine learning models to additional locations, and is evaluating new machine learning techniques to develop new forecast systems. As a result, SCE's recorded O&M expense was $2.105 million for weather and fuels modeling sub-activity.

**4. Fire Spread Modeling**

**a) Overview**

SCE's fire spread modeling capabilities provide risk and consequence information, projecting how much wildfire will impact a community. Fire Spread Modeling has become an integral component of PSPS operations. In 2024, SCE coordinated with Technosylva to create a strategic plan to work on fire spread modeling improvements and determine the feasibility of integrating consequence metrics into the PSPS decision-making process. Technosylva analyzed PSPS events from 2022 and 2023 to understand consequence patterns. It also made improvements to its underlying fuels data layer and updated its software to improve the reliability and stability of its product. These

improvements provide better fire spread predictions when using both historical and downscaled climate model data for the prioritization of long-term grid hardening projects.

**b) Spending on Fire Spread Modeling Was Reasonable**

Fire Spread Modeling was an integral component of PSPS operations during 2024. SCE used advanced fire spread modeling tools—Technosylva's FireRisk and FireSim applications—to predict fire spread and consequence outputs such as fire size potential, structures impacted, populations affected, and potential fatalities. The domain was expanded to cover all SCE service territory to ensure that all wildfire risk was properly assessed. While this activity resulted in increased costs, the identification of risks beyond traditional HFRAs has justified the additional spend as prudent and necessary. The expansion of the domain, and the previously mentioned advancements, allow team members to better estimate wildfire consequences not only during real-time events, but also for past events to inform grid hardening decisions. The expansion of the domain allows for SCE to understand potential consequences of large wildfires outside of HFRA similar to the 2023 York Fire which burned over 93,000 acres primarily within the Mojave National Preserve, the 2020 Dome Fire which burned over 43,000 acres, and the 2005 Hackberry Complex Fire that burned over 70,000 acres. SCE continues to make important investments in fire spread modeling technology to help identify areas that are at high risk for large wildfires, which can have devastating consequences. In 2024, SCE's recorded O&M expenses were $1.480 million for Fire Spread Modeling activity.

**5. RSE**

SCE developed RSEs for the following sub-activity: Weather and Fuel Modeling (82). Although the RSE for this sub-activity is relatively low, this work provides essential support to wildfire and PSPS mitigation activities. SCE did not develop RSEs for the other sub-activities because they do not directly reduce the consequences or likelihood of wildfire or PSPS risk events. SCE executes them to enable current or future wildfire mitigation capabilities.

## I. Organizational Support

### 1. Overview

Table VI-46 and Table VI-47 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for Organizational Support.[133]

***Table VI-46***
***Organizational Support***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[134]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Organizational Support | $ 6,647 | $ 1,695 | N/A |
| **TOTAL** | **$ 6,647** | **$ 1,695** | |

[133] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[134] *See* September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

***Table VI-47***
***Organizational Support[135]***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Grid Resiliency Project Management Support | $ 585 |
| Operational and Environmental, Health and Safety Audits | $ 445 |
| Organizational Change Management | $ 306 |
| Compliance Intake and Program Management | $ 286 |
| Talent Acquisition and Employee Training Programs | $ 74 |
| AOC Project Support | $ (0) |
| **TOTAL** | **$ 1,695** |

The costs discussed in this section were incurred in 2024 for program management work directly related to supporting SCE's WMP and to assist efforts aimed at the reduction of the risk and severity of catastrophic wildfires. This support includes the following sub-activities:

- Grid Resiliency Project Management Support – This is primarily for wildfire mitigation cost analysis, accounting and project management, and regulatory filing support. In 2024, activities included analyzing wildfire mitigation costs for performance tracking and accuracy, responding to data requests, and participating in an international wildfire risk consortium to help benchmark and share best practices.
- Operational and Environmental, Health and Safety Audits (Risk Modeling Services) - In 2024, SCE engaged two specialized vendors to perform distinct wildfire risk modeling analyses:
    - Technosylva was engaged to conduct advanced climate change analysis to quantify wildfire risk across SCE's service area. Their work included scenario modeling to assess the impact of climate change on wildfire

[135] The AOC Project Support costs (rounded to $0) relate to credit ($41.7) that was inadvertently recorded to the AOC Project Support sub-activity. This does not impact SCE's overall cost recovery request.

frequency and severity, supporting SCE's operational planning and mitigation strategies.

  - Risk Management Solutions (RMS) delivered stochastic datasets which were used to benchmark existing risk models, inform required retention for wildfire self-insurance, as well as to support various regulatory filings.

- Organizational Change Management (OCM) – SCE's change management teams led efforts to prepare and support SCE employees and contractors implementing new technologies and operational processes for wildfire mitigation. Specific programs that benefitted from OCM in 2024 to increase community safety included vegetation management assessment and maintenance programs implementing advanced software solutions and new PSPS processes, technology, and programs.
- Compliance Intake and Program Management – This statutorily-required[136] activity verifies WMP activity compliance via desktop review and field verification, WMP activity funding verification, and validation of QA/QC programs. In 2024, SCE incurred costs for an independent evaluator to review and assess SCE's compliance with its WMP.
- Talent Acquisition (Training Oversight and Development) and Employee Training Program – In 2024, SCE incurred costs for managing and overseeing the development and facilitation of training for wildfire mitigation projects. This oversight included onboarding instructional designers when needed; managing wildfire training workload; ensuring quality and adherence to SCE learning and development standards and guidelines; managing schedule, scope and project risk; and managing stakeholder relationships and communication. Also included in this support was ensuring measurement and evaluation was developed to evaluate

[136] *See* Cal. Pub. Util. Code § 8386.3.

training for effectiveness, delivering successful train-the-trainer content as appropriate, and confirming instructional courses and materials were delivered to SCE employees and contractors. SCE is committed to ensuring that employees and contractors are fully prepared to execute their roles during PSPS events through a comprehensive and targeted training program. This program equips personnel including field workers and IMT members with the knowledge, skills, and confidence to perform PSPS-related duties safely and effectively. Training emphasizes hazard recognition, communication protocols, and operational coordination, ensuring readiness before, during, and after PSPS events. Delivered through both online and instructor-led formats, the training includes scenario-based exercises and simulations that reinforce decision-making and situational awareness. These sessions also serve as a platform for sharing lessons learned and best practices, fostering a culture of continuous improvement and operational excellence across all teams involved in PSPS execution. SCE spent $0.074 million on O&M expenses for this activity in 2024.

**2. Spending on Organizational Support Was Reasonable**

The amount spent on SCE's PSPS training program is reasonable and aligned with the company's commitment to safety, preparedness, and operational reliability. The investment supports annual, targeted training for a wide range of roles from field personnel to IMT members, ensuring consistent understanding of protocols and reducing the risk of delays, ignitions, or miscommunications during critical events. Structured seat time, scenario-based exercises, and contractor briefings all contribute to a well-prepared workforce capable of responding to evolving field conditions and technological advancements. By proactively investing in employee proficiency and coordination, SCE minimizes customer impacts and enhances public safety, making the training program not only necessary but cost-effective. Importantly, the costs incurred did not exceed imputed authorized amounts in 2024, demonstrating fiscal responsibility while maintaining high standards of operational readiness.

### 3. RSE

SCE did not develop RSEs for these sub-activities because they do not directly reduce the consequence or likelihood of wildfire or PSPS risk events. Rather, these are support functions that help ensure current or future wildfire mitigation capabilities.

## J. High Fire Risk Area (HFRA) Sectionalizing Devices

### 1. Overview

Table VI-48 and Table VI-49 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for HFRA Sectionalizing Devices.[137]

***Table VI-48***
***HFRA Sectionalizing Devices***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[138]***
***($ in thousands)***

| . | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| HFRA Sectionalizing Devices | $ - | $ 1,954 | pp. 271-274 |
| **TOTAL** | **$ -** | **$ 1,954** | |

[137] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[138] *See* September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

***Table VI-49***
***HFRA Sectionalizing Devices***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| RAR and CB Relay Fast Curve Settings | $ 1,954 |
| **TOTAL** | **$ 1,954** |

Table VI-50 and Table VI-51 below show the capital expenditure amounts authorized in the Track 4 of the 2021 GRC for 2024, as well as the total capital expenditures for HFRA Sectionalizing Devices incurred in 2024.

***Table VI-50***
***HFRA Sectionalizing Devices***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditures[139]***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| HFRA Sectionalizing Devices | $ - | $ 2,660 | pp. 271-274 |

[139] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

***Table VI-51***
***High Fire Risk Area (HFRA) Sectionalizing Devices***
***2024 Total Capital Expenditures by Sub-Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| New RARs | $ 1,848 |
| CB Relay Hardware for Fast Curve | $ 812 |
| **TOTAL** | **$ 2,660** |

Sectionalizing devices are a class of devices that include circuit breakers (CBs) and remote automatic reclosers (RARs). A circuit breaker opens and interrupts the flow of power when its relay detects a fault, thus mitigating the risk that the fault will cause a wildfire. RARs operate in a similar fashion to a substation circuit breaker but are located on select locations on distribution lines to facilitate the isolation of specific portions of the feeder, as opposed to the entire circuit. During certain fire weather conditions, many of SCE's CBs and RARs can be configured to operate with fast curve settings, which allows them to isolate faults faster, limiting total energy delivered to these faults and reducing ignition risks. When CBs and RARs open in response to faults, these devices are typically set up to automatically reenergize the circuit or circuit section (reclosing) one or more times in an attempt to quickly restore service to customers. SCE can block reclosing of CBs and RARs in SCE's HFRA during Red Flag Warnings and other elevated fire danger conditions, while permitting reclosing in non-HFRA, providing less outage and public impact in the event of a fault. This combination has proven to be a cost-effective means of preventing fire ignitions. For example, based on 2023 operational data SCE has seen an ignition reduction  per fault event of approximately 55% on circuits with fast curve and recloser relay blocking were enabled during Fire Climate Zone Operating Restrictions compared to circuits without these features, when analyzed over the same time. Sectionalizing devices also assist SCE with PSPS by limiting the number of customers impacted. This GRC activity consists of the following sub-activities:

- CB Relay Hardware for Fast Curve – Circuit breakers are specialized switches designed to protect the entire system by detecting and isolating electrical faults.

Their primary role is to "break" the circuit, interrupting current flow when an abnormal or dangerous situation, such as a short circuit, is detected. Some remaining HFRA circuits have older electromechanical circuit breaker relays that are incapable of enabling fast curve settings. As a result, SCE is replacing these outdated electromechanical relays, as well as other relays that often experience failures, with new microprocessor relays to enable fast curve settings for the utility's remaining HFRA feeder circuits. SCE is also adding new hardware to existing circuit breaker relays, as needed, to enable fast curve settings. In 2024, SCE upgraded 11 circuit breakers to replace outdated relays and/or install additional required hardware. These included most of the few remaining HFRA circuits that did not have the required hardware to support fast curve settings.

- RAR and CB Relay Fast Curve Settings – In 2022, SCE initiated a fast curve settings refinement plan for CBs and RARs in HFRA. This plan consisted of relay setting revisions on all HFRA circuits over time. In 2024, SCE evaluated approximately 270 circuits for potential application of refined (i.e., more sensitive) fast curve settings on circuit breaker relays and RAR devices on these circuits. The refined settings lower the threshold at which the fast curve enabled devices operate to detect smaller magnitude faults. To minimize the potential electric service impacts that increasing the sensitivity of settings can have on protection device coordination, SCE also increased the time delay slightly to allow for additional branch line fuse sizes to operate before the fast curve devices operate to limit some of the customer electric service impacts associated with fast curve settings. Overall, SCE refined or added fast curve operational settings on approximately 280 CB relays and RARs during 2024, based on its evaluation results and risk prioritization framework.
- New RARs – RARs can be operated to segment a circuit into small portions so that fewer customers are impacted from wildfire mitigation events, such as PSPS

de-energizations and planned outages. In 2024, SCE installed five RARs across its circuits in HFRA to mitigate the impacts of PSPS events on its customers and communities in HFRA.

**2. Spending on Sectionalizing Devices Was Reasonable**

SCE's 2024 spend on Sectionalizing Devices was reasonable because this activity mitigates wildfire risk and the impact of PSPS to customers. The spending on this activity was all incremental to GRC-authorized amounts, as there were no costs recorded to this activity in 2021 – the year SCE's Track 4 forecast is based on. At the time, SCE reasonably did not yet know the need to further refine its fast curve settings as it was just beginning to use this technology to mitigate wildfire risk on its HFRA circuits.[140] And, as it gained experience with fast curve settings, SCE learned they could be refined to improve their performance. Further, SCE's initial plans for HFRA sectionalizing devices involved installing new devices and relocating existing ones only at the boundary of HFRA. However, SCE began to consider installing additional RARs to further sectionalize its circuits within and/or near HFRA boundaries and help mitigate the considerable impacts of PSPS events on customers and communities affected by PSPS events. In the past, SCE de-energized entire circuits to prevent potential wildfire ignitions when there were no available means of isolating the higher and lower risk segments. This often meant de-energizing substantial numbers of customers, sometimes for extended periods of time during high-fire weather conditions. In 2020, SCE began evaluating frequently impacted PSPS circuits to determine what operational protocols and/or system hardening could be undertaken to lessen the likelihood of de-energization, should weather conditions require the use of PSPS. This included many more areas than those simply dividing HFRA and non-HFRA. The addition of sectionalizing devices on a distribution circuit can reduce the quantity of customers impacted by PSPS

[140] A circuit breaker relay is a device designed to trip a circuit breaker when it detects a fault, thereby interrupting the current flow and cutting off the power supply to minimize damage to the electric system. RARs are reclosers capable of interrupting fault current and can be remotely monitored and operated, typically with a radio.

de-energization events by providing the added remote switching.[141] Additionally, the RARs which help limit customer electric service impacts of PSPS, also provide customer electric service improvements and ignition mitigation benefits though their standard features (e.g. fault interruption, automatic reclosing, fast curve operating settings).

Given its relative effectiveness and inexpensive nature, this activity does not have readily available alternatives.

**3. RSE**

SCE developed RSEs for the following sub-activities: CB Relay Hardware for Fast Curve (27,206) and New RARs (5,335).

## K. Environmental Programs

### 1. Overview

Table VI-52 and Table VI-53 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for Environmental Programs.[142]

***Table VI-52***
***Environmental Programs***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[143]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Environmental Programs | $ 722 | $ 397 | N/A |
| **TOTAL** | **$ 722** | **$ 397** | |

[141] For instance, SCE has some circuits that are fed from more urbanized, developed cities, but continue to traverse into the foothills where increased vegetation presents an ignition risk in extreme wind conditions.

[142] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[143] *See* September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

***Table VI-53***
***Environmental Programs***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Environmental Remediation Liability Management | $ 397 |
| **TOTAL** | **$ 397** |

For 2024, the costs recorded under the Environmental Remediation Liability Management sub-activity consist of a required fee from the State Water Resources Control Board (SWRCB). In September 2019, the SWRCB added a new annual fee for electric utilities with prepared WMPs as a requirement of SB 901.[144] The SWRCB fee is for increased agency staffing that facilitates the agency's ability to do timely reviews and to authorize the work as applicable (e.g., impacts associated with maintenance and modification within waters in California). SCE began to incur this fee in 2020, which was calculated based on number of overhead conductor miles (distribution and transmission) identified as high risk or high threat in the utility's WMP.

In 2024, SCE recorded O&M expenses of $0.397 million. This amount reflects a fee payment of approximately $0.678 million in O&M expenses, calculated based on 16,960 miles included in SCE's Wildfire Mitigation Plan (WMP) at a rate of $40 per mile. This was partially offset by an agency credit of approximately ($0.28) million. The State Water Resources Control Board (SWRCB) issued a refund for filing fees previously paid for projects conducted under SCE's WMP. The reimbursement included fees from Category H (Wildfire Mitigation by Electrical Corporations, Electric Utilities, and Electrical Cooperatives), resulting in a credit of approximately ($0.28). This is a one-time agency credit, and SCE does not anticipate receiving this credit in future years.

[144] SB 901 requires utility companies to prepare wildfire mitigation plans if the utilities' overhead electrical lines are located in an area that has significant risk of wildfire. *See* https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB901 (accessed on December 4, 2025).

### 2. Spending on Environmental Programs Was Reasonable

Spending on this activity was reasonable because the SWCRB annual fee is a requirement for utilities set forth in SB 901.

### 3. RSE

SCE did not develop an RSE for this activity because it does not directly reduce the consequence or likelihood of wildfire or PSPS risk events. SCE executes it for compliance purposes.

## L. Develop and Manage Policy and Initiatives

### 1. Overview

Table VI-54 and Table VI-55 below show the O&M expenses authorized in Track 4 of the 2021 GRC for 2024, as well as the total O&M expenses for the Develop and Manage Policy and Initiatives GRC activity.[145]

***Table VI-54***
***Develop and Manage Policy and Initiatives***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[146]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Develop and Manage Policy and Initiatives | $ - | $ 67 | N/A |
| **TOTAL** | **$ -** | **$ 67** | |

[145] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[146] *See* September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

***Table VI-55***
***Develop and Manage Policy and Initiatives***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Case Management | $ 67 |
| **TOTAL** | **$ 67** |

SCE incurred costs for remediation of its e-filed documents in compliance with OEIS' Final Statement of Reasons issued on July 25, 2022, which necessitates that all such documents be compliant with the accessibility requirements found in Government Code Section 7405. Starting in 2023 and continuing into 2024, to implement the compliance effort, SCE worked with a contractor to define the appropriate standard for compliance, Web Content Accessibility Guidelines (WCAG) 2.0, and implement training for key team members. SCE also hired a supplemental worker to support the wildfire case team and its increasing workload, due in part to this requirement, as well as other OEIS requirements. Lastly, SCE contracted with a vendor to provide document remediation services as the team becomes more familiar with WCAG 2.0 and for larger and more complex submissions.

**2. Spending on Case Management Was Reasonable**

As previously explained, the primary driver for the incurred expenses was the issuance of the OEIS Final Statement of Reasons on July 25, 2022. Since SCE's Track 4 forecast for 2024 was based on 2021 recorded spend, the costs for this activity were not captured. Given this was a compliance requirement, there were no alternatives. SCE discussed the compliance requirement and submission deadlines with three vendors. Two of the vendors were unable to meet the deadlines, without significant lead time, which resulted in SCE selecting the third vendor. This vendor has a longstanding relationship with SCE and manages document processing for larger SCE submissions, including its General Rate Case proceedings.

### 3. RSE

SCE did not develop an RSE for this activity because it does not directly reduce the consequence or likelihood of wildfire or PSPS risk events. SCE executes it because it is a compliance requirement.

## M. Targeted Undergrounding

### 1. Overview

Table VI-56 and Table VI-57 show the capital expenditures authorized in Track 4 of the 2021 GRC for 2024, as well as the total capital expenditures for Targeted Undergrounding that SCE incurred in 2024.

***Table VI-56***
***Targeted Undergrounding***
***2024 Track 4 GRC Authorized vs. Total Capital Expenditures[147]***
***($ in thousands)***

| GRC Activity | GRC Authorized | Total Recorded Capital | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Undergrounding | $ 45,996 | $ 56,676 | pp. 256-258 |

***Table VI-57***
***Targeted Undergrounding***
***2024 Total Capital Expenditures by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded Capital |
|---|---|
| Targeted Undergrounding | $ 56,676 |
| **TOTAL** | **$ 56,676** |

[147] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement Appendix A (Track 4 Settlement Agreement), Attachment 1.

Undergrounding refers to the conversion of an existing overhead electric system, which consists of poles, wires, and related equipment, to underground facilities that consist of trenches containing conduit banks that house the wires, vaults, and/or pad mounts for transformers and other equipment. SCE refers to its wildfire-related underground program as Targeted Undergrounding (TUG) because it focuses undergrounding in targeted areas to further reduce wildfire risk and increase reliability within its highest fire risk areas.

In 2024, SCE incurred total capital expenditures of $56.676 million for TUG. SCE undergrounded 12.18 miles of overhead lines in 2024, but some costs for these miles were recorded in prior years, given the long cycle time necessary to fully complete TUG projects.

**2. Spending on TUG Was Reasonable**

SCE's 2024 TUG-related capital expenditures were $10.680 million higher than the imputed GRC Track 4 authorized for 2024. This spending above the imputed authorized amount is driven by several factors including forecasting challenges and increased construction complexity. The original cost estimates were based on Rule 20A averages, which did not fully reflect TUG program complexity. Further, SCE undergrounded more miles in 2024 than it had in 2021 (which, as discussed above, was the basis for SCE's Track 4 forecast for 2024). To meet the WMP 20-mile target for 2024 (19 planned plus four rollover miles from 2023) SCE accelerated higher-difficultly projects from 2025. While 2024 was expected to include 60% low and 40% medium-difficulty work, over 5 miles of high-difficulty terrain had restricted work hours and construction challenges which drove up costs. Additional delays from permitting, easement issues and red flag warnings led to crew demobilizations and pushed completing some miles to 2025. Fewer miles were completed than forecasted, partly due to limited work hours.

**3. RSE**

The RSE for Undergrounding is 1,517.

## N. Training Delivery and Development – Transmission and Distribution

### 1. Overview

Table VI-58 and Table VI-59 below show the O&M expenses authorized in Track 4 of SCE's 2021 GRC, as well as the total O&M expenses for Training Delivery and Deployment incurred in 2024.[148]

***Table VI-58***
***Training Delivery and Development – Transmission and Distribution***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[149]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Training Delivery and Development - Transmission and Distribution | $ - | $ 93 | N/A |
| **TOTAL** | **$ -** | **$ 93** | |

***Table VI-59***
***Training Delivery and Development – Transmission and Distribution***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Employee Training Programs | 93 |
| **TOTAL** | **$ 93** |

[148] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[149] *See* September 8, 2023 Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement p.11, FN 30.

SCE is dedicated to delivering training programs that equip employees with the knowledge, skills, and confidence to carry out their PSPS-related duties safely, effectively, and in alignment with operational expectations. These programs are designed to promote safety awareness, strengthen operational preparedness, and ensure readiness for a wide range of field activities that may be required before, during, and after a PSPS event. Annual targeted training for employees, including those in Incident Management Team (IMT) roles, reinforces the ability to plan and execute de-energization and restoration procedures while adapting to evolving conditions in the field. This training also promotes a consistent understanding of hazard recognition, communication protocols, and coordination across teams, ensuring that personnel can respond quickly and effectively when called upon. Training is delivered through both online and instructor-led formats, providing flexibility while maintaining depth of instruction. These sessions ensure all personnel with PSPS responsibilities are up to date on the latest plans, processes, and operational practices. They also provide a forum for participants to discuss field challenges, share lessons learned, and review best practices, further enhancing preparedness and operational performance.

For 2024, SCE recorded O&M expenses for wildfire mitigation-related training for PSPS, including the development of material and for employees in both transmission and distribution.

**2. Spending on Employee Training Programs Was Reasonable**

SCE is committed to employee proficiency and safety and conducts targeted annual training for key roles involved in emergency response and system restoration. The training spans from field workers to IMT members, with specific focus on PSPS and wildfire mitigation. By fostering a deep understanding of company protocols and procedures, the training promotes sound decision making, reducing the risk of delays or incidents that may impact public safety. This proactive approach, underpinned by continuous training initiatives, ensures that the workforce remains well prepared for evolving challenges and technological advancements.

### 3. RSE

SCE did not develop an RSE for this activity because it does not directly reduce the consequence or likelihood of wildfire or PSPS risk events. SCE executes it to enable current or future wildfire mitigation capabilities.

## O. Training Seat-Time – Transmission and Distribution

Table VI-60 and Table VI-61 below show the O&M expenses authorized in Track 4 of SCE's 2021 GRC, as well as the total O&M expenses for Training Seat Time that SCE incurred in 2024.[150]

***Table VI-60***
***Training Seat Time***
***2024 Track 4 GRC Authorized vs. Total O&M Expenses by GRC Activity[151]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Training Seat-Time - Transmission and Distribution | $ - | $ 113 | N/A |
| **TOTAL** | **$ -** | **$ 113** | |

[150] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[151] *See* September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

***Table VI-61***
***Training Seat Time***
***2024 Total O&M Expenses by Sub Work Activity***
***($ in thousands)***

| Sub-Activity | Total Recorded O&M |
|---|---|
| Skilled Path Training | 113 |
| **TOTAL** | **$ 113** |

**1. Overview**

To ensure operational readiness and maintain high performance during PSPS events, SCE delivers targeted annual training for employees engaged in PSPS-related field activities and briefs contractors on requirements and expectations. This training ensures personnel are prepared to perform duties aligned with established protocols, enabling safe, efficient, and coordinated operations during PSPS events.

A core component is PSPS-specific training seat time, which equips field personnel and Incident Management Team (IMT) members with the knowledge and skills to execute de-energization and re-energization procedures, apply hazard recognition protocols, and respond effectively to changing field conditions. Training includes scenario-based exercises and operational simulations to strengthen decision-making, enhance situational awareness, and ensure coordinated execution across functional roles.

By dedicating structured seat time to these activities, SCE enhances its ability to deploy resources effectively, reduce operational delays, and minimize customer impacts during PSPS events. This investment in readiness supports safe and efficient operations, fosters consistent performance, and strengthens teamwork across all involved groups.

**2. Spending on Skilled Path Training Was Reasonable**

In 2024, SCE recorded O&M expenses of $0.113 million for this activity. This training ensures experienced personnel and new resources tasked with coordinating restoration are well versed in company processes and procedures. Training activities promote sound decision-making and reduce the

chance of ignitions or restoration delays, potentially impacting the health and safety of the population SCE serves. Continuous training for employees and briefing for contractors are necessary to work within the same framework and structures.

**3. RSE**

SCE did not develop an RSE for this activity because it does not directly reduce the consequence or likelihood of wildfire or PSPS risk events. SCE executes it to enable current or future wildfire mitigation capabilities.

## P. Asset Reliability Risk Analytics

### 1. Overview

Table VI-62 and Table VI-63 below show the O&M expenditures authorized in Track 4 of SCE's 2021 GRC, as well as the total O&M expenditures for Asset Reliability Risk Analytics.[152]

***Table VI-62***
***Asset Reliability Risk Analytics***
***2024 Track 4 Imputed GRC Authorized vs. Total O&M Expenses by GRC Activity[153]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Asset Reliability Risk Analytics | $ - | $ 4,388 | pp.91-92; 117-129; 697-700 |
| **TOTAL** | **$ -** | **$ 4,388** | |

[152] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[153] *See* September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

*Table VI-63*
*Asset Reliability Risk Analytics*
*2024 Total O&M Expenses by Sub Work Activity*
*($ in thousands)*

| Sub-Activity | Total Recorded O&M |
|---|---|
| Asset Risk Modeling | $ 4,388 |
| **TOTAL** | **$ 4,388** |

For SCE's Asset Reliability Risk Analytics program, SCE seeks to: (1) develop capabilities in predicting an asset's overall wildfire-related risk; and (2) given an asset's risk, prioritize work, repairs, and/or replacement(s) to minimize potential wildfire ignitions. SCE's Asset Risk Modeling activity is designed to support the set-up of SCE's data center, the final deployment and testing of the first set of HPCCs, and vendor charges to develop and test the weather research forecast software on the two HPCCs.

**2. Spending on Asset Reliability Risk Analytics was reasonable**

Spending on asset reliability risk analytics allowed for better allocation of resources and better prioritization of work, repairs, and/or replacements. Spending related to this was reasonable. In 2024, SCE recorded $4.388 million in O&M Expenses for this sub-activity.

**Q. Community Resiliency Equipment Incentives**

**1. Overview**

SCE's Community Resiliency Equipment Incentive Program facilitates increased resiliency within the communities in its service area. Through the Community Resiliency Equipment Incentive Program, customers with behind-the-meter distributed generation and energy storage may obtain an incentive for a portion of the qualifying cost to enable the supply of power during an outage from their on-site distributed generation and energy storage device. The Program targets customers capable of providing resiliency services to the communities they serve, and rebates will be

commensurate with the extent of the service provided and the vulnerability of the community served. This program supports a customer's ability to ride through an outage using energy storage during a PSPS event and complements the work SCE is performing to increase the resilience of its grid infrastructure. SCE uses its PSPS protocol to de-energize portions of its system to ensure public safety during extreme weather conditions. The increased frequency of such conditions drives the need for greater resilience of the communities that SCE serves.

Table VI-64 and Table VI-65, below, show the O&M expenses authorized in Track 4 of SCE's 2021 GRC and recorded expenses. SCE recorded $0.27 million O&M expenses for Community Resiliency Equipment Incentives activity in 2024.[154]

***Table VI-64***
***Community Resiliency Incentives***
***2024 Track 4 Imputed GRC Authorized vs. O&M Expenses by GRC Activity[155]***
***($ in thousands)***

| GRC Activity | Imputed GRC Authorized | Total Recorded O&M | 2023-2025 WMP Page Numbers |
|---|---|---|---|
| Community Resiliency Incentives | $ - | $ 270 | pp.572-573 |
| **TOTAL** | **$ -** | **$ 270** | |

[154] *See* Sections II.A., II.B., and Appendix A for the imputation calculation of authorized amounts.

[155] See September 8, 2023, Joint Motion for Approval of 2021 General Rate Case Track 4 Settlement Agreement, p.11, FN 30.

*Table VI-65*
*Community Resiliency Incentives*
*2024 Total O&M Expense by Sub Work Activity*
*($ in thousands)*

| Sub-Activity | Total Recorded O&M |
|---|---|
| Community Resiliency Equipment Incentives | 270 |
| **TOTAL** | **$ 270** |

**2. Spending on Community Resiliency Equipment Incentives was reasonable**

SCE funded the installation of microgrid controller equipment at an elementary school within the Rialto Unified School District. The school, which already had a distributed generation system, expanded its energy capabilities with additional generation partially supported by the Self-Generation Incentive Program (SGIP). The microgrid controller was installed concurrently with the energy storage system, and both components were completed in September 2024.

SCE allocated $0.27 million for this project, based on cost benchmarks from a similar initiative at another school. This amount was accrued in December 2024. However, the supplier was unable to provide documentation to substantiate the full $0.27 million expense. Instead, audit-ready invoices totaling approximately $0.54 million were submitted. If the contractor cannot submit the required documentation to substantiate any additional costs, the unused fund will be returned to the customers in a subsequent cost recovery proceeding.

# Appendix A

# Imputation of 2021 GRC Track 4 Authorized O&M Funding for 2024

| | | | Total Company (Constant $2018) | | | Track 4 Settlement (Nominal $2024) | | | |
|---|---|---|---|---|---|---|---|---|---|
| **BA_NonBA** | **BPE** | **GRC Activity Name** | **Track 4 Request** | **Pro-Rata Adjustments** | **Track 4 Authorized Settlement [1]** | **Total Company** | **FERC** | **A&G Capitalization (CPUC)** | **CPUC** |
| | | | a | b | c=a+b | d | e | f | g=d-e-f |
| **Non-VMBA** | **Wildfire Management** | Enhanced Overhead Inspections and Remediations | 115,259 | (18,498) | 96,761 | 115,991 | 11,290 | – | 104,702 |
| | | PSPS Execution | 17,904 | (2,873) | 15,031 | 18,106 | 407 | 1,088 | 16,610 |
| | | Aerial Suppression | 17,492 | (2,807) | 14,685 | 17,689 | 398 | 1,063 | 16,228 |
| | | PSPS Customer Support | 23,832 | (3,825) | 20,008 | 23,786 | 534 | 1,958 | 21,294 |
| | | Organizational Support | 6,690 | (1,074) | 5,617 | 6,681 | 35 | – | 6,647 |
| | | Fire Science and Advanced Modeling | 5,257 | (844) | 4,413 | 5,156 | 343 | 1,348 | 3,465 |
| | | Enhanced Situational Awareness | 5,149 | (826) | 4,323 | 5,078 | 338 | 1,327 | 3,412 |
| | | Distribution Fault Anticipation/Alternative Technologies | 134 | (21) | 112 | 134 | 1 | – | 133 |
| | | Training Delivery and Development - Transmission and Distribution | – | – | – | – | – | – | – |
| | | Training Seat-Time - Transmission and Distribution | – | – | – | – | – | – | – |
| | | Community Resiliency Incentives | – | – | – | – | – | – | – |
| | | HFRA Sectionalizing Devices | – | – | – | – | – | – | – |
| | | Asset Reliability Risk Analytics | – | – | – | – | – | – | – |
| | **Environmental Services** | Environmental Programs | 727 | (117) | 610 | 726 | 4 | – | 722 |
| | **Policy & External Engagement** | Develop and Manage Policy and Initiatives | – | – | – | – | – | – | – |
| **Non-VMBA Total** | | | **192,445** | **(30,886)** | **161,559** | **193,347** | **13,349** | **6,784** | **173,214** |

**Footnoe 1: D.23-11-096, Ordering Paragraph (OP) 1, approved the September 8, 2023 Joint Motion for Approval of 2021 Gerneral Rate Case Track 4 Settlement Agreemetn (Joint Motion). Footnote 30 on p. 11 of the Joint Motion sets forth "Total 2024 authorized amount for non-VMBA Wildfire Mitigation O&M shall be $161.559 million (in constant 2018$)".**