BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Application of Southern California Edison Company (U 338-E) Regarding 2022 Risk Assessment Mitigation Phase.	Application 22-05-013
NOT CONSOLIDATED	
Application of Southern California Edison Company (U 338-E) for Authority to Increase its Authorized Revenues for Electric Service in 2025, among other things, and to Reflect that Increase in Rates.	Application 23-05-010
NOT CONSOLIDATED	
Application of Southern California Edison Company (U 338-E) for Authority to Increase its Authorized Revenues for Electric Service in 2021, among other things, and to Reflect that Increase in Rates.	Application 19-08-013

SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) RISK SPENDING ACCOUNTABILITY REPORT FOR 2023

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Dated: **May 31, 2024**

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SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) RISK SPENDING ACCOUNTABILITY REPORT FOR 2023

Southern California Edison Company (SCE) submits its 2023 Risk Spending Accountability Report (RSAR) in compliance with the Phase Two Decision Adopting Risk Spending Accountability Report Requirements and Safety Performance Metrics For Investor-Owned Utilities And Adopting A Safety Model Approach For Small And Multi-Jurisdictional Utilities, Decision (D.) 19-04-020 and D. 22-10-002, respectively (collectively, the Decisions). This 2023 RSAR covers spend authorized in SCE's Test Year 2022 General Rate Case (GRC) cycle for activities that address safety, reliability, and/or maintenance, consistent with Public Utilities Code Section 591.

In compliance with the Decisions, SCE is incorporating new requirements in this annual RSAR. Consistent with Ordering Paragraph 8 of D.19-04-020, SCE is filing and serving the RSAR on the service lists for proceedings Application (A.)22-05-013 (SCE's 2022 RAMP), A.19-08-013

(SCE's 2021 GRC), and A.23-05-010 (SCE's 2025 GRC), as well as on the California Public Utilities Commission's Safety Policy Division, Safety Enforcement Division, and Public Advocates Office. SCE is also providing the 2023 RSAR to the Energy Division Tariff Unit by emailing the report to edtariffunit@cpuc.ca.gov. SCE's 2023 RSAR is provided as Attachment A.

Respectfully submitted,

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Dated: May 31, 2024

Attachment A

Southern California Edison Company's Risk Spending Accountability Report for 2023

Southern California Edison Company's
Risk Spending Accountability Report for 2023

May 31, 2024

Southern California Edison Company's
Risk Spending Accountability Report for 2023

Table of Contents

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I.

INTRODUCTION

Southern California Edison (SCE) appreciates the opportunity to present its Risk Spending Accountability Report (RSAR) for calendar year 2023 and looks forward to further dialogue with the Energy Division (Energy Division or ED) of the California Public Utilities Commission (Commission or CPUC) and other interested parties regarding the data provided in this report.

SCE's RSAR is organized into twelve chapters and one appendix:[1]

- The Background chapter (Chapter II) summarizes the regulatory background giving rise to the RSAR, including decisions and guidance from the Energy Division regarding the contents and format of this report.
- Chapter III presents recorded aggregate operations and maintenance (O&M) expenses and capital expenditures for 2023 relative to what was authorized in SCE's Test Year 2021 General Rate Case (2021 GRC)[2] for the applicable safety, reliability and maintenance activities along with a discussion of variance drivers. In Chapter IV, SCE provides important context for its variance analyses for 2023 authorized funding compared to recorded funding. Authorized funding is based on forecast ratemaking over a multi-year GRC cycle, including the Commission's adoption of non-budget-based Post-Test Year Ratemaking funding mechanisms for some categories of spend.
- Chapter V discusses SCE's compliance with new requirements from Decision (D.)22-10-002 and walks through the presentation of the 2023 RSAR data.
- Chapter VI describes the process by which activities impacting safety, reliability and maintenance were chosen for this report.

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1 Decision (D.)22-10-002 requires that SCE annually file and serve its RSAR on April 30. On February 20, 2024 the CPUC granted SCE's extension request to file the 2022 RSAR by May 31, 2024.

2 Application (A.)19-08-013.

- Consistent with direction from the Energy Division,Chapter VII explains the process used to derive authorized dollars for GRC activities and Risk Assessment Mitigation Phase (RAMP) controls and mitigations.
- Chapters VIII through XI describe operation and maintenance (O&M) expenses and capital expenditures for Spending Accountability Report (SAR)-eligible activities, and variance calculations and explanations for the Distribution, Transmission, Generation and Other categories.[3] The variance explanations are provided for: (a) expense activities with a difference of at least $10 million, or a percentage difference of at least 20% subject to a minimum difference of $5 million; and (b) capital expenditures with a difference of at least $20 million, or a percentage difference of at least 20% subject to a minimum difference of $10 million. In addition, SCE included explanations of variances in recorded versus authorized units, where appropriate, in accordance with D.19-04-020.[4]
- Finally, Chapter XII summarizes SCE spending in 2023 on safety, reliability, and maintenance activities specific to balancing and memorandum accounts.
- The Appendix includes a map of Risk Assessment Mitigation Phase control and mitigation activities to GRC activities.

During 2023, SCE continued to focus on delivering safe, reliable and increasingly clean electricity to our customers and their communities. As explained in this report, SCE prioritized

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[3] For those activities meeting the materiality thresholds, the Energy Division also directed that SCE provide: (a) a description of the programs; (b) location in GRC testimony where the program is described; (c) a list of projects that were canceled or deferred within each program; and (d) projects not presented in the rate case but that were taken up anyway. *See* Energy Division letter dated February 14, 2020, Attachment at p. 2.

[4] *See* D.19-04-020, Attachment 2, p. 7 ("We direct the IOUs to provide narrative explanations of activities for those risk mitigation programs for which work unit data is available and where the deviation between authorized work units and performed work units is equal to or greater than 20 percent. The IOUs shall describe deviations of 20 percent or more both in the quantity of work units performed and in the type of work units performed.").

overall authorized spending and prudently varied from what was authorized when circumstances changed, needs emerged, or new and better solutions later appeared.

II.

BACKGROUND

In D.14-12-025, the Commission revised the Rate Case Plan to incorporate a risk-based decision-making framework encompassing two new procedures – the RAMP and Safety Model Assessment Proceeding (S-MAP) – to support the development and presentation risk-based methodologies in rate case filings. In addition, the Commission required the filing of risk spending accountability reports to "assist in the goal of improving utility accountability for the ratepayer money spent on risk mitigation efforts."[5] The Commission's Energy Division was assigned responsibility for developing the requirements for reporting and reviewing the filed reports.

Throughout 2018, the Energy Division conducted a series of workshops to refine the scope and nature of the reports. Among other things, the Energy Division expanded the scope of the reports beyond spending on items associated with risk mitigation. The reports would also include all maintenance items, consistent with the statutory requirements specified in Public Utilities Code Section 591. On January 3, 2019, Energy Division Director Edward Randolph sent a letter to SCE requesting an interim Spending Accountability Report for specified activities[6]

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[5] D.14-12-025, p. 43.

[6] Specifically, the Energy Division required SCE to include "programs authorized or in effect during each record year that were identified as impacting safety or reliability within SCE's Risk Informed Planning Process and Risk Evaluation Methodology filed as part of the 2018 GRC [see Exhibit SCE-01 and associated workpapers, served in A.16-09-001], as well as programs associated with a maintenance activity."

covering years 2018 to 2020 ("January 3, 2019 Letter").[7, 8] In addition to showing authorized versus actual spending for the record year (expressed in terms of dollars and percentages), the Energy Division asked SCE to include a derivation of authorized amounts,[9] and to discuss (where applicable) related balancing or memorandum accounts.[10]

In 2019, through D.19-04-020, Ordering Paragraph 10, the Commission adopted a new RSAR reporting framework. This new framework applied to SCE's RSARs regarding our Test Year 2021 GRC, which was filed on August 30, 2019. The most notable modifications to the RSAR framework in D.19-04-020 compared to the guidance originally provided by the Energy Division in the January 3, 2019 Letter are: 1) the separation of risk mitigation programs identified in RAMP and other programs related to safety, reliability and maintenance in the GRC; and 2) the reporting on authorized activities and actual activities performed, for each program, using "work units" as the unit of reporting where applicable. Attachment 2 to D.19-04-020 provides example tables for reporting authorized and recorded spending and work units. In October 2022, the S-MAP Track 3 Decision, D.22-10-022, adopted additional RSAR requirements that take effect for either this current 2023 RSAR or SCE's first RSAR following the approval of our next GRC Application, for Test Year 2025.[11] Additional detail on SCE's compliance with these new requirements is included in Section V.

Unit costs in various programs can span multiple years (e.g., planning costs incurred in 2022 for work completed in 2023) such that taking the annual expenditures and dividing by the

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7 On February 14, 2020, the Energy Division notified SCE of its recommendation that SCE submit the RSAR covering calendar year 2019 no later than March 31, 2020. On February 27, 2020, SCE submitted a request to file on the original due date of May 31, 2020. On April 10, 2020, Energy Division issued a schedule for its review of Risk Spending Accountability Reports in 2020. In that document, Energy Division confirmed that SCE could file its 2019 RSAR by May 31, 2021. See Energy Division Annual Risk Spending Accountability Report 2020 Review Schedule (issued April 10, 2020), fn. 3.

8 In 2020, SCE received three letters from the Energy Division concerning its review of SCE's 2016-2017, 2018 and 2019 RSARs. In all, the Energy Division found that SCE had met the applicable requirements for RSARs.

9 *See* Section VII below.

10 *See* Section XII below.

11 D.22-10-022, Ordering Paragraph 1, p. 55.

total units does not provide an accurate unit cost. SCE was unable to incorporate the first item above – the separation of risk mitigation programs – until we received a decision on our 2021 GRC application that included the integration of our 2018 RAMP. In compliance with D.19-04-020 and D.20-10-002, the tables in Sections VIII to XI below provide the link from GRC activities to RAMP risk mitigation programs, as well as the comparison of authorized to actual units where applicable.[12]

With respect to unit variances, SCE followed the most recent guidance provided by Energy Division, which was provided in response to the Sempra utilities' 2020 RSAR. In response to San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company's (SoCalGas) request for clarification on applying the variance selection criteria, Energy Division provided the following guidance in an email dated February 14, 2020: "We have reviewed pages 41-43 of D.19-04-020 and believe that you should apply the selection criteria and explanations for all GRC programs as well as the risk mitigation programs, where work unit data is available. That is to say that you will only need to provide greater details for the unitized risk mitigation programs."[13] SCE followed this guidance and applied the variance criteria thresholds at the GRC activity level, except for GRC activities that comprised a RAMP activity with work units. For example, SCE's Underground Structure Replacement Distribution capital GRC activity is comprised of a RAMP component (Covered Pressure Relief Restraint or CPRR), and a non-RAMP component (vault replacements and shoring). Since both of these components are forecasted using work units, SCE applied the variance threshold criteria to the RAMP and non-RAMP components.

SCE diligently sought to incorporate work units into this RSAR and continues to refine this approach for future reports. Authorized and recorded work units are provided for activities where there were clearly defined work units in the 2021 GRC. Work units were not created for

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[12] Please refer to Appendix A for the RAMP control and mitigation activity mapping to GRC activities.

[13] *See* Risk Spending Accountability Report of San Diego Gas & Electric Company and Southern California Gas Company for 2020, p. 9.

activities which were not clearly presented in that format in our 2021 GRC.[14] There are a number of specific projects that are not unit-based. For example, for several GRC activities in Load Growth, where SCE's forecast is based on multiple independent projects of varying scopes and forecasts, these activities are not translatable into units. Unit costs in various infrastructure replacement programs can span multiple years (e.g., planning costs incurred in 2022 for work completed in 2023) such that taking the annual expenditures and dividing by the total units does not provide an accurate unit cost. Further, SCE uses historical averages and last year recorded (LYR) in many of our GRC activity forecasts. Both of these methodologies have been accepted and approved by the CPUC[15] for activities that are not unit-based and for which work units cannot be directly imputed from the forecasts.

III.

OVERVIEW OF AGGREGATE SPENDING VERSUS AUTHORIZED IN SELECT SAFETY, RELIABILITY AND MAINTENANCE PROGRAMS

A. O&M

Figure III-1 below depicts the total GRC authorized and recorded expenses for SAR-eligible O&M activities in 2023.

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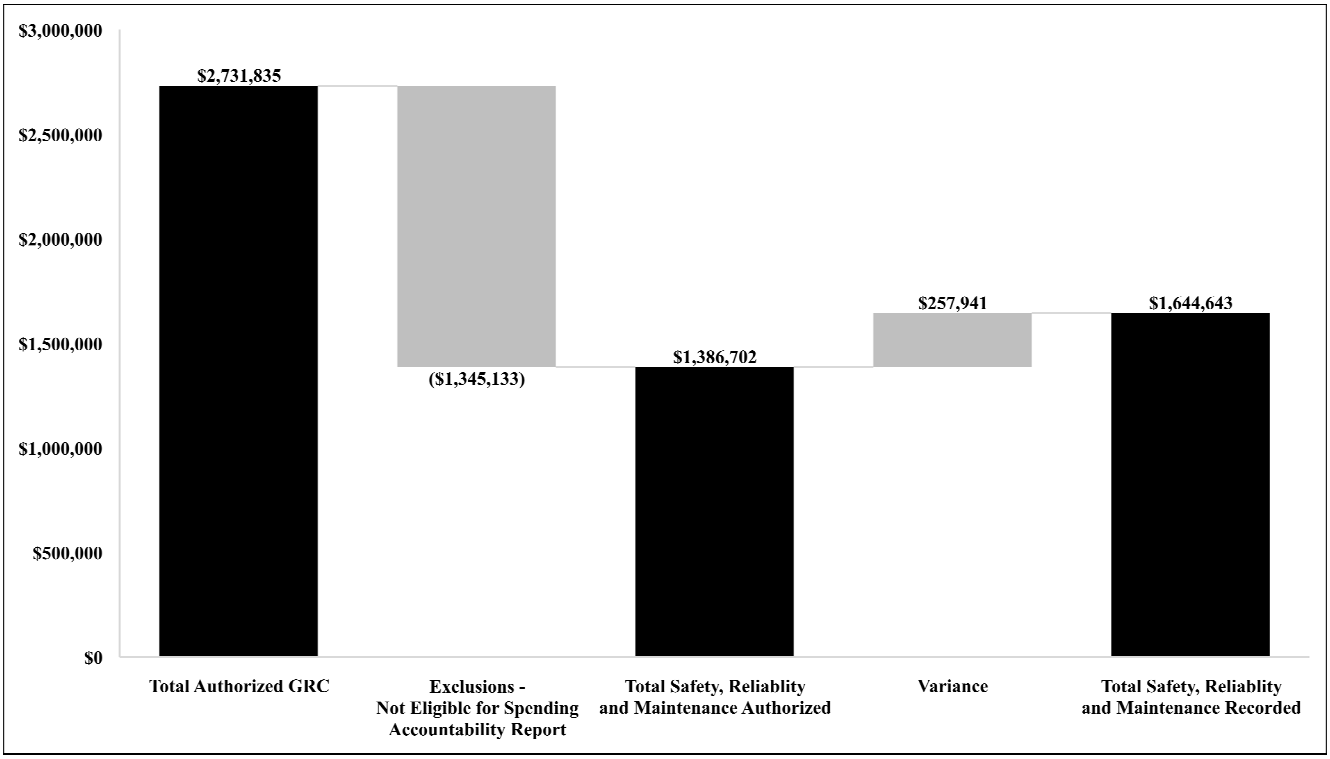
[14] If the total activity forecast was not entirely comprised of number of units * unit cost we did not consider that activity to be unit-based (for instance if 75% of an activity's authorized spending is units * unit cost and 25% is based on historical spend or some other forecast methodology, then units were not included).

[15] For instance, in D.89-12-057, and subsequently in D.04-07-022, the CPUC stated that if recorded expenses have significant fluctuations from year to year, or expenses are influenced by external forces beyond the utility's control, an average of recorded-expenses is appropriate. Also in D.89-12-057, and subsequently in D.04-07-022, the CPUC stated that if recorded expenses have been relatively stable for three or more years, the last recorded year is an appropriate base estimate.

Figure III-1
2023 O&M GRC Authorized vs. Recorded - ($000s)



For 2023, recorded O&M expenses were approximately $258 million more than the 2023 GRC authorized funding for the SAR-eligible activities, as shown in Table III-1 below. This represents a variance of 19%. While SCE experienced a greater spending variance in Distribution wildfire risk mitigation-related activities, SCE spent within five percent of authorized for Transmission, Generation and Other activities. Further explanations for these categories are provided below.

Table III-1
O&M RSAR Authorized v. Recorded Variances by Function- ($000s)

RSAR Category	2023 Recorded	2023 Authorized	Variance (Rec. – Auth.)	% Variance ((Rec. - Auth.)/Auth.)
Distribution	$776,241	$534,028	$242,214	31%
Generation	$175,193	$182,547	($7,354)	-4%
Other	$567,091	$543,257	$23,835	4%
Transmission	$126,117	$126,870	($753)	-1%
Grand Total	**$1,644,643**	**$1,386,702**	**$257,941**	**19%**

Within the Distribution category, SCE prudently spent more than authorized by approximately $342 million, or 31%. The majority of the overspend is attributable to Distribution Routine Vegetation Management. Similar to SCE's experience in 2021 and 2022, SCE's recorded costs for this GRC activity were significantly impacted by the California Legislature's implementation of SB 247, which specifies the qualifications for electrical line clearance tree trimmers performing work to comply with the vegetation management requirements in an electrical corporation's wildfire mitigation plan. The law also requires that all qualified line clearance tree trimmers be paid no less than a specified prevailing wage rate. Because the 2021 GRC was filed in 2019, prior to SB 247's enactment, SCE submitted its 2021 forecast based on its best understanding at the time and could not have foreseen or factored into its vegetation management forecasts the full monetary impact of SB 247 – the extent of which was not yet known. SCE's request to increase its forecast based on Update Testimony, which would have increased the 2021 forecast to be more in line with actual forecast costs in light of the new legislation, was denied on procedural grounds. Thus, the authorized amount for 2021 and the post-test years did not include the substantial impact of SB 247 on the cost of tree trimming across SCE's system. Costs for services supporting compliance mitigation such as customer coordination and traffic control, as well as environmental support work, inspections, and quality control, continue to contribute to recorded costs for both Distribution and Transmission Routine Vegetation Management GRC activities. Finally, emergent mitigation and structure brushing costs also contributed to Distribution Routine Vegetation Management.

SCE also experienced an overall increase in Enhanced Overhead Inspections (EOI). Three main drivers led to recorded O&M expenses that were higher than authorized: (1) increased costs and volume of distribution inspections and remediations, (2) increased costs for transmission inspections and remediations, and (3) introduction of technology capabilities to support data processing, storage, and compliance with Office of Energy Infrastructure Safety (OEIS) data guidelines. SCE also experienced an increase in contractor rates to perform inspections.

Within the Transmission category, SCE spent less than authorized by 1%. While several programs incurred spend under authorized this was mostly offset by the overspend in vegetation management. Similar to Distribution, the main driver of the additional spend was transmission routine vegetation management. The same cost drivers that are discussed above for distribution routine vegetation management apply to transmission and are not repeated here.

Within the Generation category, SCE spent less than authorized by approximately $7 million, or 3%. The underrun was partly due to the cancelling of the General Electric ("GE") contractual service agreement ("GE CSA") in 2021. After evaluating the terms and conditions of the GE CSA in light of current operating conditions, and following several rounds of discussions with GE, SCE found it prudent to discontinue the contract from both an operational and overall cost standpoint. This will not impact SCE's ability to safely and reliably operate Mountainview Generating Station. Mountainview O&M is subject to significant year-to-year variances, as the plant approaches the midpoint of its expected lifecycle and components that may have remained relatively trouble-free in the early years of plant existence begin to require higher levels of maintenance, and in some cases may experience in-service failures. While SCE completed inspections and maintenance activities in 2023, SCE also deferred some activities to 2024 and 2025 based on risk prioritization.

Within the Other category, SCE spent more than authorized by approximately $24 million, or 4%. SCE overspent authorized in Public Safety Power Shutoff (PSPS) Customer Support and PSPS Execution GRC activities. The 2023 recorded amount for PSPS Customer Support exceeded the 2023 GRC authorized amount primarily due to the Critical Care Backup Battery (CCBB) Program, which was not included in the 2021 GRC request. The CCBB Program addresses the needs of SCE's income-qualified Medical Baseline (MBL) customers residing in the High Fire Risk Areas (HFRA) by fully funding the cost of a battery-powered portable backup solution to operate medical equipment during PSPS events. Similar to 2021 and 2022, SCE spent more than authorized for PSPS Execution due to approximately $35 million in aerial suppression costs. These costs were not forecasted or included in SCE's 2021 GRC but are

crucial to our wildfire mitigation efforts (and were approved for 2021 in D.24-03-008). Additional detail on these activities can be found below in Table XI-38. Other various activities underspent authorized, offsetting some of the impacts of the overspend on PSPS-related work activities.

Table III-2 below shows the recorded and authorized O&M expenses by SCE's 2018 RAMP risks.

Table III-2
O&M Spending Variances by SCE 2018 RAMP Risk- ($000s)

SCE 2018 RAMP Risk	2023 Recorded	2023 Authorized	Variance (Rec. – Auth.)	% Variance ((Rec. - Auth.)/Auth.)
Wildfire	$120,075	$66,416	$53,659	81%
Cyber Attack	$24,902	$31,911	($7,009)	-22%
Physical Security	$22,449	$27,328	($4,879)	-18%
Employee, Contractor and Public Safety	$5,811	$9,755	($3,944)	-40%
Building Safety	$4,670	$7,505	($2,835)	-38%
Contact with Energized Equipment	$5,583	$7,394	($1,810)	-24%
Climate Change	$3,973	$3,887	$86	2%
Total	**$187,463**	**$154,196**	**$33,268**	**22%**

B. Capital

Figure III-2 below depicts the total GRC authorized and recorded expenditures for SAR-eligible Capital activities.

Figure III-2
2023 Capital GRC Authorized vs. Recorded - ($000s)

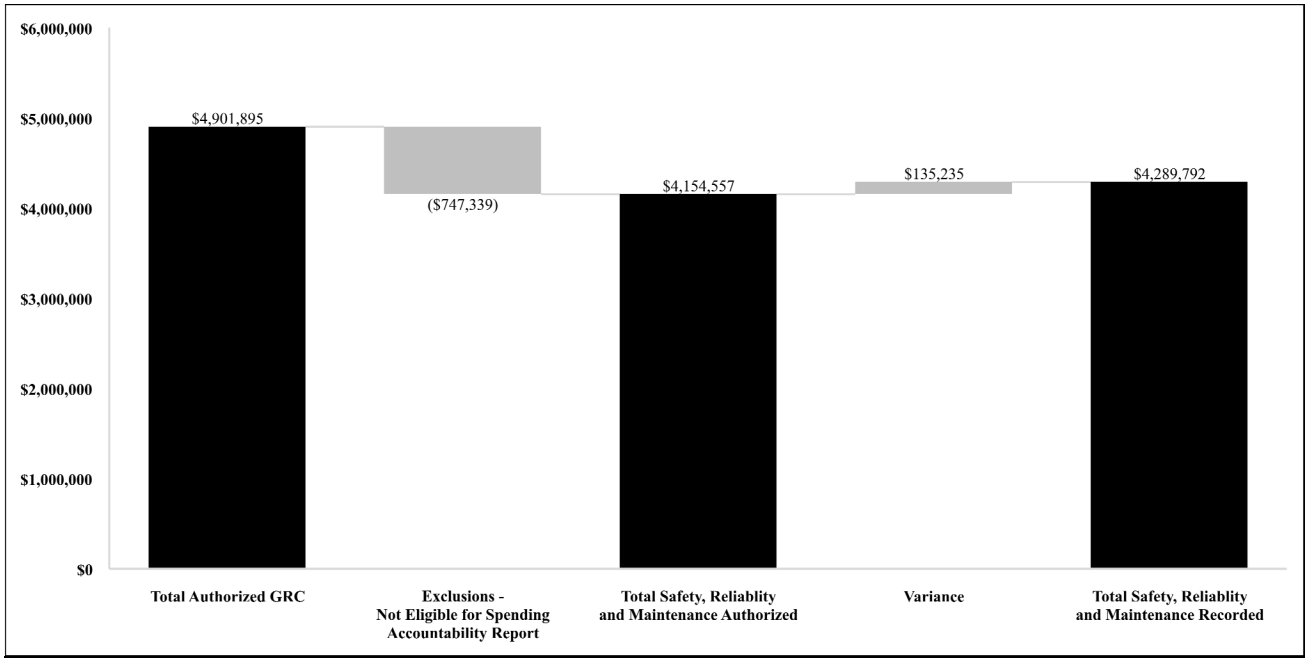


Table III-3 below compares authorized to recorded 2021 GRC capital activities supporting safety, reliability and maintenance, and shows an aggregate additional spend of approximately $135 million, or 3%. The additional spend in Distribution, Generation and Other was offset by lower spending than authorized in Transmission. Further explanations for these categories are provided below.

Table III-3
Capital Spending Accountability Report Variances by Function- ($000s)

RSAR Category	2023 Recorded	2023 Authorized	Variance (Rec. - Auth.)	% Variance ((Rec. - Auth.)/Auth.)
Distribution	$2,758,699	$2,244,106	$514,592	23%
Generation	$108,899	$94,298	$14,600	15%
Other	$781,097	$736,262	$44,835	6%
Transmission	$641,097	$1,079,890	($438,793)	-41%
Grand Total	**$4,289,792**	**$4,154,557**	**$135,235**	**3%**

Within the Distribution category, SCE spent more than the amounts adopted in the Track 1 GRC decision by $515 million or 23%. The majority of this spend was driven by SCE's necessary efforts to mitigate wildfire risk. For the purposes of this RSAR, and in order to ensure

transparency, SCE did not remove the amounts over authorized for wildfire activities, even though they are captured in memorandum and balancing accounts subject to future reasonableness review. For example, in 2023 SCE spent more than the imputed amount initially adopted in the Track 1 GRC decision for Wildfire Covered Conductor Program (WCCP) by $201 million.[16] SCE spent above the 2021 GRC Track 1 authorized amounts for WCCP in 2021 – 2023 primarily due to the installation of more miles than authorized and a higher unit cost for those miles. Given the present risk and long lead times for constructing covered conductor, it would not have been prudent to simply stop covered conductor installation and wait for further Commission authorization. That would have resulted in leaving significant wildfire risk unmitigated for longer than necessary. Further, due to long lead times and operational issues, such as permitting, weather, and crew availability, SCE scopes more miles than it actually constructs each year. As such, it would not be reasonable to expect SCE to stop on a dime, with so many other miles in flight.

SCE's latest risk methodology and mitigation strategy support the installation of these miles. Indeed, they support installing more miles of covered conductor, which the Commission recognized with the adoption of the 2021 GRC Track 4 Settlement Agreement that authorized the installation of an additional 1,050 miles of covered conductor in 2024.

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[16] In the Track 1 Final Decision, the Commission authorized a scope of 4,500 miles of covered conductor and its associated capital-related revenue requirement for the WCCP for the period 2019-2023 (with the ability to seek cost recovery after a reasonableness review for costs above 110 percent of the authorized revenue requirement threshold). *See, e.g.*, D.21-08-036 at Conclusion of Law (CoL) 74. SCE completed approximately 2,500 miles of covered conductor through the end of 2021 and forecasted the completion of an additional 1,250 miles of WCCP installation in both 2022 and 2023 (i.e., approximately 5,000 miles total through YE 2023). To the extent the total recorded costs of the estimated 5,000 miles through YE 2023 exceed 110 percent of the Track 1 Final Decision's authorized amount, SCE will seek reasonableness review and cost recovery for those costs via a separate Application after 2023 recorded costs are finalized, consistent with D.21-08-036. For WCCP specifically, there is not a set authorized number of covered conductor miles or associated dollars for any particular year in the 2019-2023 cycle *per se*; instead, the Track 1 authorization is cumulative for the entire cycle. For purposes of this RSAR, SCE imputed the 2023 authorized units by summing the recorded 2019-2022 WCCP miles and then subtracting from 4,500.

On the topic of unit costs, estimates were developed at a point when SCE had very little experience installing covered conductor. SCE's estimates were appropriately informed by the approximately 25 completed covered conductor work from its Overhead Conductor Program (OCP). This data point was appropriate at the time because it was the best proxy available to SCE to inform unit cost forecasts for its nascent WCCP even though it did not fully account for all the differences and complexities associated with a much more expansive WCCP across a much larger portion of SCE's service area.

SCE also began installing covered conductor in more rural areas in 2021 – 2023, which typically resulted in higher labor costs due to the cost of labor in rural regions and more difficult terrain, which can require more hours of labor to complete an installation. SCE also found that ancillary equipment, such as vibration dampers, is sometimes needed as part of the covered conductor installation. Finally, SCE faced significant rising costs due to unforeseen circumstances. First in 2019 and later in 2022, SCE had to undertake negotiations for new contractor rates, which resulted in higher labor costs than those used in the unit cost forecast. All these factors had the impact of increasing SCE's actual unit costs. The Commission recognized this uncertainty in forecasting costs for covered conductor when it authorized the WRMBA.[17]

Additionally, SCE spent above authorized for EOIs and Remediations by $66 million. For Enhanced Overhead Inspections and Remediations, three main drivers led to recorded capital expenditures that were higher than authorized: (1) increased costs and volume of distribution inspections and remediations, (2) increased costs for transmission remediations, and (3) introduction of technology capabilities to support data processing storage and compliance with OEIS data guidelines.

Lastly, SCE spend above authorized in Distribution Preventive and Breakdown Capital Maintenance by $138 million as SCE performed two significant activities that were not included

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[17] D.21-08-036 at p. 249 ("Given the significant scope of the WCCP approved in this decision, the potential for SCE's covered conductor unit costs to be higher or lower than forecast…we agree that balancing account treatment is appropriate in this instance").

in the 2021 GRC forecast for 2023 (Pole Related Maintenance Splice (PRMS) and Live Front Equipment Replacement). SCE also spent above authorized for Distribution Transformers by $86 million. Both of these activities experienced cost pressures that are further described in Section VIII.B.3.

Within the Transmission category, SCE spent less than authorized by approximately $439 million or 41%. SCE notes that a portion of this lower spend was associated with Federal Energy Regulatory Commission (FERC)-jurisdictional projects and programs. SCE underspent authorized in Grid Reliability Projects in 2023 due to continued delays with the Riverside Transmission Reliability Project (RTRP). Based on an underground feasibility report, the Riverside City Council decided to pursue an alternative proposal for the entire project to be underground as opposed to partial undergrounding, which was reflected in the spend initially approved by the CPUC. SCE also spent under authorized for the Transmission Line Rating Remediation (TLRR) program**.** In order to meet the 2025 deadline commitment made to the North American Electric Reliability Corporation (NERC), Western Electric Coordinating Council (WECC), and the CPUC in October 2014, the TLRR portfolio focused on planned construction activities in years 2021-2024. While SCE experienced several project delays and deferrals for TLRR projects in 2022, SCE remains a committed partner to making progress on all projects within the TLRR Portfolio. Lastly, SCE underspent authorized in the GRC activity Transmission Substation Plan (TSP). The key driver and majority of underspend in 2023 is related to the Alberhill A Bank project. In February 2021, SCE provided an updated filing for this project, which included a revised cost-to-benefit analysis. Subsequently, the CPUC issued a Staff Report in December 2021, which requested a revised application from SCE with ASP Open Air as the preferred alternative. As a result, SCE engaged the CPUC regarding this in August 2022 and SCE submitted a revised application on June 2, 2023. Based on this, the operating date for this project has been deferred.

Within the Generation category, SCE spent more than authorized by $15 million or 15% due to the decommissioning of the San Gorgonio small hydro and Solar Photovoltaic Program

(SPVP) sites. In the 2021 GRC Final Decision, the CPUC approved $0.408 million annually for SCE to address ongoing safety, regulatory, and other requirements for the San Gorgonio project. The CPUC authorized amount was consistent with recorded 2019 capital expenditures but did not cover physical decommissioning activities at San Gorgonio because the timeline for decommissioning activities was unclear at the time. Additionally, SCE started decommissioning SPVP sites that were not included in our TY 2021 GRC forecast. While SCE has reasonably operated and maintained its SPVP assets, as demonstrated in the Commission's annual ERRA review of operations, the assets have undergone significant wear and tear since the first solar plant entered service in 2008 and recent wiring and component failures have caused hotspots and localized roof fires on occupied buildings.

Within the Other category, SCE spent over authorized by approximately $45 million or 6%. One of the main contributors to spending over authorized was in Technology Solutions. In the 2021 GRC, SCE requested, and received approval for, a hybrid forecasting approach for the 2021-2023 period. SCE provided a forecasted spending allocation by Business Planning Group (BPG), but did not provide an itemized listing of individual projects. SCE's focus was on defining high-level business capabilities we planned to support. As a whole, SCE overspent its authorized amount in 2023 due to the need to support high-priority business capabilities that could not be delayed or deferred. These projects provided customer benefits, either directly or indirectly, in support of safety, reliability, customer satisfaction, and affordability. Additional details are provided in the variance explanation in Section XI.B.3.

Table III-4 below shows the recorded and authorized capital expenditures by SCE's 2018 RAMP risks.

Table III-4
Capital Spending Report Variances by SCE 2018 RAMP Risk- ($000s)

SCE 2018 RAMP Risk	2023 Recorded	2023 Authorized	Variance (Rec. – Auth.)	% Variance ((Rec. - Auth.)/Auth.)
Wildfire	$826,204	$604,826	$221,379	37%
Cyber Attack	$106,246	$110,110	($3,865)	-4%
Physical Security	$52,180	$48,980	$3,200	7%
Employee, Contractor and Public Safety	$2,936	$2,512	$424	17%
Building Safety	$17,196	$7,369	$9,827	133%
Contact with Energized Equipment	$70,796	$72,641	($1,845)	-3%
Hydro Asset Failure	$3,644	$12,587	($8,943)	-71%
Underground Equipment Failure	$31,805	$24,587	$7,218	29%
Grand Total	**$1,111,006**	**$883,611**	**$227,395**	26%

IV.

SCE'S REPORT PLACED IN CONTEXT

As this RSAR compares SCE's recorded spending for selected activities with Commission-authorized amounts, it is essential that the report be analyzed in the proper context. The Commission continues to recognize that a utility's actual spending can differ from Commission-authorized spending, and that utilities have the flexibility to apply their judgment in managing the business.[18] The Commission has stated that "[u]nder GRC ratemaking, the utilities are given an authorized revenue requirement to manage various parts of their utility business."[19] In a consistent line of decisions, the Commission has confirmed that GRC forecasts represent reasonable estimates of what the utility expects to spend in a given area.[20]

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[18] See, e.g., Re California-American Water Co., D.02-07-011, (mimeo), pp. 6-7, 2002 Cal. PUC LEXIS 423, 220 P.U.R. 4th 556.

[19] CPUC Resolution E-4464 (May 10, 2012), at p. 3.

[20] *See, e.g.*, D.08-09-026, Section 6.2 ("A GRC is used to set rates based on reasonable estimates of the costs the utility will incur in providing service. It is not generally intended to set a specific budget. Actual costs for the test year, including plant additions, may vary.")

This discretion has traditionally been afforded to utilities by the Commission, and has been re-confirmed, including when the Commission issued its decision making the change from a three-year GRC cycle to a four-year one. The Commission observed that:

> [A] longer GRC cycle will facilitate the Commission's adjustment to an emerging reality of modern utility regulation, one that implies a fundamental change in the role of GRC proceedings. In earlier days, the theoretical and real-world purposes of a GRC were essentially the same: the Commission authorized the revenue requirement necessary to allow the utility to recover the reasonable costs of providing safe and reliable service, and to have an opportunity to earn a fair return on its investments. This focus on basic utility service was a workable approach during a time of less rapid technological change, relatively stable costs, and growing populations and demand for utility service. The core activities of the GRC process needed only to be repeated on a periodic basis to maintain fairness for all stakeholders. Over time, GRC proceedings at the Commission have become much less simple and straightforward. For example, in our review of the "regulatory compact" earlier in this decision**, we noted that a utility's response to rapidly unfolding events that affect utility service … may require a utility to fund its response by quickly re-directing Commission-authorized GRC funding from its originally-intended purpose to a wholly different purpose. …. The Commission has always acknowledged that utilities may need to reprioritize spending between GRCs. Now, given the evolving reality we described above, that necessity may even be growing**.[21]

In other words, recognizing that utilities may need to re-prioritize funds and spend more or less in a particular area of their business, the Commission affords them substantial flexibility to decide how much to spend in any particular area.[22] Moreover, the Commission has specifically recognized that "new programs or projects may come up, others may be cancelled, and there may be reprioritization. This process is expected and is necessary for the utility to manage its operations in a safe and reliable manner."[23] In providing guidance on spending accountability reports, the Energy Division has similarly confirmed that "a utility is allowed the flexibility to reprioritize the authorized funds in order to ensure safe and reliable operations."[24]

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[21] D.20-01-002 at pp. 35-38 (emphasis added).
[22] CPUC Resolution E-4464 (May 10, 2012), at p. 7.
[23] D.11-05-018, at p. 27.
[24] Energy Division, Safety-Related Spending Accountability Report for Southern California Edison (May 2017), available at http:www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/SCESafety-RelatedSpending.pdf.

The starting point for this 2023 RSAR was the Commission's examination of SCE's forecasts in its 2021 GRC. SCE's 2021 GRC Application encompassed Test Year 2021, and attrition years 2022 and 2023. The April 17, 2020 Amended Scoping Memo and Ruling of Assigned Commissioner and Administrative Law Judges (Amended Scoping Memo) in the proceeding subsequently established Track 4 to consider funding for a third post-test year, 2024.[25] SCE followed the schedule established by the Commission and presented its forecasts for years 2021 through 2023 in 2019. The Commission issued its final decision authorizing funding for these years on August 20, 2021.[26] Thus, by the time SCE received the Commission's guidance on what SCE was authorized to spend in connection with its forecasts, those forecasts were nearly three years old. In the intervening years, conditions changed, new opportunities to improve operations and gain efficiencies were found, and additional needs emerged. In addition, SCE continued to prudently execute on wildfire mitigation work to address emergent risks consistent with its approved Wildfire Mitigation Plans, with the understanding that spending above authorized in wildfire mitigation-specific memorandum and balancing accounts will generally be subject to further reasonableness review.

Additionally, SCE's activities throughout 2023 were still impacted by the COVID-19 pandemic; however, SCE was generally better able to adapt to the realities of the pandemic in 2023 and is seeing some of the impact of COVID-19 pandemic on our recorded costs subsiding. These conditions and their impacts on SCE's operations and capital projects could not have been reasonably foreseen at the time SCE's 2021 GRC application was submitted.

In addition, this RSAR addresses an attrition year in SCE's 2021 GRC cycle. As explained in Section VII, below, the authorized spending for 2023 was established based on the post-test year ratemaking (PTYR) mechanism authorized by the Commission in D.21-08-036, and did not include a detailed examination and decision regarding the individual forecasts for all GRC activities. Hence, for certain GRC activities with capital projects with specific forecasts of

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[25] *See* Amended Scoping Memo, p. 1.
[26] D.21-08-036.

expenditures during that attrition year, variances could result from the escalation percentage even where the actual expenditures align with SCE's itemized forecast. To the extent that this caused the need for a variance explanation SCE noted this in our response.

V.

SCE'S 2023 RSAR PRESENTATION AND DEMONSTRATION OF COMPLIANCE WITH D.22-10-002

Decision D.22-10-002 provided additional reporting requirements and table formats that are applicable to SCE's 2023 RSAR. Table V-5 below lists the new requirements from D.22-10-002 and how SCE addressed those in this filing.

Table V-5
D.22-10-002 RSAR Requirements

Requirement	SCE Demonstration of Compliance
The IOUs shall use a single, standardized table structure for programs including canceled, deferred, or expanded programs.	SCE used the guidance in Appendix B of D.22-10-002, however due to the large amount of information required, SCE split the table up into logical sections in the written report. SCE has included letter column headings (A, B, C, etc.) in each table below that correspond to the headings in the Excel spreadsheet provided with this filing. SCE hopes that will provide parties with an easy way to track the data in each table to the full data set for each GRC activity.
The IOUs shall use hyperlinks to provide excerpted attachments, exhibits, and chapters with every RSAR, and shall identify the page numbers of references cited. The IOUs shall include a column to the standardized table structure for the purpose of providing this information.	SCE has included hyperlinks to our Test Year 2021 GRC workpapers in the accompanying excel file. SCE did not include the direct hyperlinks in the written report but did include the workpaper title and page references.
The IOUs shall provide RSAR spreadsheets to the same distribution list as the RSAR when they file the PDF.	SCE provided RSAR spreadsheets when we filed this RSAR.
The IOUs shall provide an overview of how they defined program completion status.	Additional detail on this is discussed below.
When the program lacks authorized units: (i) the IOUs shall cite workpaper activity descriptions to explain how much work was	For programs that did not have authorized work units SCE included a brief description of why the program lacked work unit information. For activities that did

Requirement	SCE Demonstration of Compliance
accomplished and the degree to which the goals described in GRC testimony were met. If the authorized amount deviates from the GRC workpaper, IOUs shall provide a description of the change from the workpaper; and (ii) IOUs shall explain why programs lack work unit information for each program in the RSAR when units are not provided.	not have authorized work units and triggered a variance explanation SCE endeavored to reference sub-activities or work streams from our workpapers in the variance explanations.
When an IOU indicates a variance is the result of a forecast error, the IOU shall list the assumptions used to make forecasts and identify the assumption(s) that resulted in the forecast error.	To the extent this occurred, SCE included this in our variance explanations.
When a spending variance explanation for a program cites to another program or activity as a reason for the variance, the IOU shall disclose: (a) the name of the other program or activity (as it would be cited in the RSAR); (b) the actual costs associated with the other program or activity ("associated costs") or why actual costs associated with the other program or activity may not be provided; and (c) the authorized spending, actual spending (including or excluding associated costs), the difference in dollars (actual less authorized), and work units, regardless of RSAR thresholds for the other program or activity.	To the extent this occurred, SCE included this in our variance explanations.
IOUs shall mark programs with less than five percent of authorized expenditures as either canceled or deferred. Alternatively, the IOU shall explain why the program was not marked as canceled or deferred as a separate column.	To the extent this occurred, SCE included this in our variance explanations or Status Completion Statements.
Where a positive variance is due to new activities that are in-scope to the program description (also known as emergent activities), the IOU shall explain what caused the new activity.	To the extent this occurred, SCE included this in our variance explanations.
Where an IOU incurs a positive variance because the program's scope was expanded to include new mandates, the IOU shall	To the extent this occurred, SCE included this in our variance explanations

Requirement	SCE Demonstration of Compliance
explain the new mandate and cite any new regulations or orders.	
Since authorized GRC spending does not always align with RSAR program activities, variances are often explained as inaccurate forecasts or recorded elsewhere. In such cases, the IOUs shall provide enough information to explain the cause of the variance.	To the extent this occurred, SCE included this in our variance explanations
IOUs shall track programs over a full GRC cycle in the RSAR. Each program shall include the cumulative GRC imputed costs, imputed costs to date, actual costs by year, cost to date, and variance to date. IOUs shall provide a statement regarding the anticipated completion status for each line item as to whether the program is anticipated to be completed during the GRC cycle. For the last year of the GRC cycle, the completion status will summarize the entire GRC cycle and discuss any deferred or cancelled scope. If a program's variance threshold is exceeded, the IOU shall include a statement regarding the anticipated completion status. For programs that include multiple projects, the IOU's statement on the anticipated completion status in the standardized table may reflect an aggregate of the projects that constitute the program. In that case, the IOU shall disclose the completion statuses of the individual projects creating the variance in the variance explanation or add the individual projects that comprise the program as separate rows.	This RSAR covers SCE's Test Year 2021 and Post Test Years 2022 and 2023 authorized and recorded costs and work units. SCE followed the guideline in Appendix B of D.22-10-002 for the presentation of the requested information. For activities that triggered a variance explanation, SCE included a status completion statement that included any cancelled, deferred and/or emergent work that contributed to the variance. Since this was not the last year of our GRC cycle, SCE did not summarize the entire GRC cycle and discuss any deferred or cancelled scope for each GRC activity.

This is the second RSAR that included the new requirements listed above. For GRC activities that have a known, finite life, SCE provided that information in the Project Life and Project year columns. If the activities did not have a defined life, or the end date is unknown, SCE marked these as "On-Going" and "Annual". SCE had to use its best judgement when

completing the Forecast Scope, Schedule and Cost. For instance, even though SCE may have underspent or under-executed on a GRC activity in 2023 or to date, we may have elected to indicate the activity is still On-Target if the variance is a result of the PTYR mechanism (not budget-based) or if we are executing the work in our queue but we just have less work than we initially forecasted.

For the "Status" column, D.22-10-002, Appendix A defines the options as "Proceeding as Planned", "Deferred", "Canceled", "Expanded", and "Emergent". SCE is opting to use "Partially Delayed" in place of Deferred.[27] Since many GRC activities are comprised of many individual projects or sub-activities where only a fraction of the work may be delayed, deferred or cancelled, SCE feels Partially Delayed better captures the status of the GRC activity. If there are no changes to the program or no variance explanation is required, SCE selected Proceeding as Planned. However, there may be instances where an activity triggered a variance explanation, but SCE still selected Proceeding as Planned. One reason for selecting that designation could be because the activity uses a historical average to forecast and therefore there would be years where we over/under spend compared to a forecast. If SCE is still executing the work in that activity, we consider it proceeding as planned. SCE also included a Cancelled and Completed status designation for activities that have been cancelled or completed, respectively. If an activity has an expanded scope of work compared to what was requested in the 2021 GRC, SCE noted that as "Expanded". If an activity has a new sub-activity or work stream that was not forecasted as part of the 2021 GRC, SCE noted that as "Emergent". SCE tried to provide detail in the status completion statement or variance explanation to aid parties in our selection of status.

SCE notes that this is still a relatively new exercise (this is the second year with the new columns Forecast Scope, Forecast Schedule, Forecast Cost, Status and Completion Status) and while SCE strived to follow the guidance above, there is some subjectivity to the selection of the

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[27] Per D.22-10-002, an Investor-Owned Utility (IOU) may use other terms as long as they define the additional terms clearly.

information in these new columns. For this reason, we exercised our best professional judgment in populating these new columns.

VI.

APPLICABLE SAFETY, RELIABILITY, AND MAINTENANCE RELATED PROGRAMS

In D.19-04-020, the Commission directed SCE to develop a list of programs that include activities relating to safety, reliability or maintenance authorized or in effect during the applicable year.

In SCE's 2018 GRC (A.16-09-001), a risk mapping of GRC activities to risk events, outcomes and impacts was developed. This mapping:

- Examined each GRC activity,
- Identified what type of risk event was targeted for mitigation, and
- Outlined potential outcomes and impact dimensions for that risk event, using a framework consistent with SCE's Safety Modeling Assessment filing (A.15-05-002) and the guidance the Commission provided in D.16-08-018.

This mapping served as the foundation for the Energy Division's report on Safety Related Spending for 2015 submitted in connection with SCE's 2018 GRC.

Consistent with our prior reports, SCE's 2023 report utilizes the same mapping.[28] First, the safety-related programs were identified by selecting any activity that scored in the Safety Impact dimension. Then, these criteria were expanded to include programs that scored in the Reliability Impact dimension. Because the mapping does not capture a Maintenance Impact dimension, SCE manually reviewed all programs that had not scored as related to Safety or Reliability and then added any program that met the criteria specified in the January 3, 2019 Letter and D.19-04-020.

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[28] SCE has made minor revisions to the of list of programs relating to safety, reliability or maintenance since this initial analysis.

VII.

DERIVATION OF AUTHORIZED DOLLARS

On August 30, 2019, SCE filed its 2021 GRC Application requesting, among other things, an increase in its base revenue requirements for the Test Year 2021 and Post-Test Years 2022 and 2023.[29]

On August 19, 2021, the Commission adopted the 2021 GRC Track 1 Decision, which, in pertinent part, authorized a PTYR mechanism for SCE for the years 2022 and 2023. The adopted PTYR mechanism adjusts SCE's Authorized Base Revenue Requirement (ABRR) on an annual basis, in between GRC Test Years, to provide SCE with additional revenues, which the Commission determined in the 2021 GRC Final Decision were necessary for SCE to continue to provide safe and reliable service.[30]

The adopted PTYR mechanism as approved via SCE's Advice Letter (AL) 4899-E includes the escalation of O&M expenses using various escalation factors for labor, non-labor, medical, and other benefit expenses in the attrition years. The 2022 authorized capital expenditures presented in this report use a PTYR mechanism (approved in D.21-08-036) that escalates non-wildfire related capital additions except Residential and Commercial New Service Connections (NSC) at 0% from the adopted 2021 CPUC-jurisdictional levels. For wildfire related expenditures and Residential and Commercial NSCs, SCE used budget-based forecasts, consistent with D.21-08-036. For the most part, this report does not include activities whose costs are recovered outside the GRC (e.g. Charge Ready, fuel and purchased power, and Energy Efficiency programs). However, this report does include FERC-jurisdictional capital and O&M which are reviewed in the GRC.

SCE included authorized dollars and work units for RAMP controls and mitigations associated with our 2018 RAMP report in the respective O&M and/or Capital GRC activity. In

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[29] SCE's base revenue requirements include the costs of operating, maintaining, and investing in SCE's generation, distribution, transmission, and general functions, and exclude costs of fuel purchasing and power procurement.

[30] 2021 GRC Track 1 Decision, p. 546.

some cases, a RAMP control and/or mitigation may be identical to the GRC activity, however in other instances there may be multiple RAMP controls and/or mitigations that make up a GRC activity. Further, there a GRC activity may be partially comprised of RAMP controls/mitigations and non-RAMP-related spending.[31]

[31] Refer to Appendix A for a mapping of Risk Assessment Mitigation Phase control and mitigation activities to GRC activities.

VIII.

DISTRIBUTION CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

For the Distribution expense activities that are SAR-eligible, Table VIII-6 below provides the 2021 GRC activity description, testimony and workpaper citation and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table VIII-6
Distribution Expense Category Activity Description and Background Information

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Circuit Breaker Inspections and Maintenance	Includes the cost of labor, materials used, and expenses incurred in performing the inspection and maintenance of circuit breakers at distribution and transmission substations.	SCE-02 Vol: 3	WPSCE02V3 pp. 51 - 57	N/A	N/A
Dead, Dying and Diseased Tree Removal	Costs incurred to proactively remove dead, dying, and diseased trees that could fall on or contact SCE's electrical facilities.	SCE-02 Vol: 6	WPSCE02V06A pp.161 - 167	N/A	N/A
Distribution Apparatus Inspection and Maintenance	This activity includes the costs associated with the inspection and testing of all overhead and underground distribution apparatus specialized equipment for things such as remote monitoring and control.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 51 - 57	N/A	N/A
Distribution Fault Anticipation	This activity includes the costs associated with rollout of Distribution Fault Anticipation devices as well as data services and analysis provided by Texas A&M.	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 337 - 345	N/A	N/A
Distribution Intrusive Pole Inspections	The costs incurred for intrusive pole inspections of distribution poles. Intrusive inspections require inspectors with proper training and experience to drill into the pole's exterior to identify and measure the extent of internal decay which is typically undetectable with external observation alone. Inspectors also does a visual inspection of the exterior of the pole to check for damage.	SCE-02 Vol: 5	WPSCE02V05 pp. 31 - 32	N/A	N/A
Distribution Overhead Detail Inspections	Overhead Detail Inspections include costs for inspecting SCE's overhead distribution electrical system under GO 165 and SCE's DIMP. Activity includes the cost of labor, materials used and expenses incurred in performing overhead detail inspections. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 10 - 18	N/A	N/A
Distribution Pole Loading Assessments	The costs incurred in performing pole loading assessments on distribution poles, including pole	SCE-02 Vol: 5	WPSCE02V5, pp. 4-9	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	loading calculations. Through assessments, poles that do not meet GO 95 loading, temperature and safety factor requirements or, in areas with known local conditions such as high winds and SCE's loading, will be identified for repair or replacement.				
Distribution Pole Loading Repairs	The costs incurred to make repairs to distribution poles as part of the Pole Loading Program. Repairs involve the design and installation or modification of guy wires.	SCE-02 Vol: 5	WPSCE02V5, pp. 220-225	N/A	N/A
Distribution Preventive and Breakdown O&M Maintenance	Distribution maintenance is performed on either a planned basis or an unplanned basis. Planned maintenance work is comprised of repairs to SCE's equipment and structures recorded as Priority 2 items, primarily driven from inspection activities. These repairs can be performed by inspectors or qualified electrical workers. Planned work is referred to as preventive maintenance.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp.28 - 37	N/A	N/A
Distribution Request for Attachment Inspections	Includes cost for Pre Inspections and Final Inspections of distribution renter attachments to poles.	SCE-02 Vol: 5	WPSCE02V5, pp. 266-271	N/A	N/A
Distribution Routine Vegetation Management	Costs incurred for pre-inspections, trimming and removal of trees, expanded clearance distances, back-end quality assurance/checks; pole-brushing work, supplemental patrols, and substation-associated vegetation management work.	SCE-02 Vol: 6	WPSCE02V06A pp. 121 - 140	N/A	N/A
Distribution Underground Detail Inspections	This activity includes costs for inspecting SCE's underground distribution electrical system under GO 165 and SCE's DIMP. Activity includes the cost of labor, materials used and expenses incurred in performing underground detail inspections. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp.19 - 27	N/A	N/A
Enhanced Overhead Inspections and Remediations	This activity includes the costs associated with performing Enhanced Overhead Inspections and remediation of findings across SCE's High Fire Risk Area. This includes Transmission EOI inspections,	SCE-04 Vol: 5	WPSCEO4VO5APt01 pp. 370 - 389	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	Distribution EOI Inspections, aerial inspections, Transmission and Distribution EOI repairs, the long span mitigation, vertical switches and EOI PMO costs.				
Fire Hazard Prevention	SCE expanded its efforts to mitigate vegetation-related wildfire risks by implementing a Hazard Tree Management Program (HTMP). HTMP assesses the site and structural condition of trees that could fall into or otherwise impact electrical facilities and potentially lead to ignitions and outages.	SCE-02 Vol: 6	WPSCE02V 06A p. 97	N/A	N/A
Fusing Mitigation	This activity includes the costs associated with the installation of branch line fusing as well as substation class fusing within SCE's High Fire Risk Area.	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 319 - 330	Wildfire	Fusing Mitigation
HFRA Sectionalizing Devices	This activity includes the costs associated with the installation of Remote Automatic Reclosers (RARs), Remote-Controlled Switches (RCSs), and replacement of relay hardware to sectionalize circuits that traverse High Fire Risk Area boundaries.	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 285 - 298	Wildfire	Remote-Controlled Automatic Reclosers and Fast Curve Settings
Infrared Inspection Program	This activity includes the costs associated with performing infrared inspections on High Fire Risk Area (HFRA) distribution circuits as well as infrared and corona inspections on transmission lines in HFRA.	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 406 - 416	Wildfire	Infrared Inspections
Load Side Support	Load Side Support is SCE's program to address power quality problems such as voltage sags, transients, voltage imbalance, and harmonics that can affect transmission and distribution systems, generators, and customer equipment. Power Quality Specialists in T&D perform investigations at all levels from generation and transmission to end-use equipment within customer facilities. Power Quality Specialists identify the cause of power quality problems and recommend solutions to customers and/or system owners.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4P2ChIII-IVBkC pp.296 - 302	N/A	N/A
Meter System Maintenance Design	Advanced Metering Operations analyzes meter and communication data to identify failed devices, issue repair orders, optimize communication performance, update firmware, and mitigate system problems. These monitoring activities help ensure customer usage data is	SCE-02 Vol: 1 Pt. 3	WPSCE02V1P3 pp. 31 - 27	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	accurate and processed for use by other SCE operational units.				
Monitoring and Operating Substations	Includes the cost of labor, materials, and expenses incurred in operating distribution and transmission substations and switching stations. Includes labor incurred for activities such as: supervising station operation; inspecting station equipment; keeping station logs and records and preparing reports on station operation; and operating switching and other station equipment. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-02 Vol: 3	WPSCE02V3 pp. 9 - 15	N/A	N/A
Other Substation Equipment Inspections and Maintenance	Includes cost of labor and materials used and expenses incurred in inspecting and maintaining substation equipment not specifically provided for in any other final cost center (FCC). Such items include cable trench covers; steel and wood pole racks; disconnect switches; auxiliary current transformers; potential transformers including bushings; lightning arrestors; potential devices and coupling capacitors; current transformers including bushings; supervisory and telemetering equipment; insulators; oil line tanks; cooling towers; direct current (DC) grounds; and mobile units.	SCE-02 Vol: 3	WPSCE02V3 pp. 79 - 85	N/A	N/A
Patrolling and Locating Trouble	Includes the costs incurred by troublemen when patrolling distribution lines to locate trouble at the request of SCE's system operators or as the result of a customer reported problem. Activities include patrolling, switching, locating the cause of the reported problem, and inspecting SCE equipment installed on customer's property, and repairs to the system to correct reported problem. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 45 - 50	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Relay Inspections and Maintenance	Includes the cost of labor, materials used, and expenses incurred in performing the inspection and maintenance of protection relay systems at distribution and transmission substations.	SCE-02 Vol: 3	WPSCE02V3 pp. 65 - 71	N/A	N/A
Streetlight Operations, Inspections, and Maintenance	Includes the cost of labor, materials used, and expenses incurred in the operation of street lighting and signal system equipment. Labor costs include activities for: supervising street lighting and signal systems operation; replacing lamps and incidental cleaning of glassware and fixtures; routine patrolling for lamp outages, extraneous nuisances or encroachments; testing lines and equipment; maintenance of street lighting and signal system assets; and streetlight mapping. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 63 - 68	N/A	N/A
Substation - Inspections and Maintenance	Includes the cost of labor, materials used, and expenses incurred in operating transmission substations and switching stations. Includes labor incurred for activities such as: supervising station operation; adjusting station equipment where such adjustment primarily affects performance; inspecting, testing and calibrating station equipment for the purpose of checking its performance; keeping station log and records and preparing reports on station operation; and operating switching and other station equipment. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-02 Vol: 3	WPSCE02V3 pp. 100 - 106	N/A	N/A
Substation O&M Breakdown Maintenance	Includes the costs to perform unplanned breakdown maintenance, including the repair and replacement of SCE equipment and structures that are damaged or fail in service. Breakdown maintenance is typically performed in response to damage caused by equipment failures, degradation, rodents, birds, or other means.	SCE-02 Vol: 3	WPSCE02V3 pp. 93 - 99	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	Unplanned maintenance does not include costs related to failures that occur during a storm or from a claim.				
Wildfire Covered Conductor Program	Activity includes the costs associated with installation of covered conductor, installation of fire-resistant poles, and mitigation of tree attachments in SCE's High Fire Risk Area.	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 263 - 269	Wildfire	Wildfire Covered Conductor Program
Wildfire Vegetation Management	Costs incurred for the Hazard Tree Removal program, which proactively assesses dead, dying, and diseased trees that could fall on or contact SCE’s electrical facilities and remediates trees as appropriate to mitigate fire risks.	SCE-02 Vol: 6	WPSCE02V06A pp. 170 - 188	Wildfire	Expanded Vegetation Management

2. GRC Activities Dollar and Unit Variance Calculations

Table VIII-7 and Table VIII-8 below provide the authorized and recorded costs, and variance and percentage change values for each distribution expense activity in terms of dollars and units. The table also indicates whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table VIII-7
Distribution Expense Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll -up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff, to Date**	**$ Variance Explanation Required**
Circuit Breaker Inspections and Maintenance	N/A	N/A	Yes	On-Going	Annual	$5,178	$5,338	$5,737	$16,253	$5,606	$7,071	$6,161	$18,839	$428	$1,733	$424	$2,585	8%	32%	7%	16%	No
Dead, Dying and Diseased Tree Removal	N/A	N/A	Yes	On-Going	Annual	$35,569	$36,829	$41,180	$113,578	$16,165	$29,003	$23,962	$69,130	($19,404)	($7,826)	($17,218)	($44,449)	-55%	-21%	-42%	-39%	**Yes**
Distribution Apparatus Inspection and Maintenance	N/A	N/A	Yes	On-Going	Annual	$6,177	$6,370	$6,830	$19,376	$5,259	$5,213	$6,200	$16,672	($918)	($1,157)	($630)	($2,704)	-15%	-18%	-9%	-14%	No
Distribution Fault Anticipation	N/A	N/A	Yes	Complete	Complete	$0	$0	$0	$0	$135	$513	$362	$1,010	$135	$513	$362	$1,010	N/A	N/A	N/A	N/A	No
Distribution Intrusive Pole Inspections	N/A	N/A	Yes	On-Going	Annual	$5,457	$5,649	$6,307	$17,413	$5,563	$5,806	$3,959	$15,328	$106	$157	($2,348)	($2,085)	2%	3%	-37%	-12%	No
Distribution Overhead Detail Inspections	N/A	N/A	Yes	On-Going	Annual	$5,198	$5,365	$5,812	$16,375	$13,279	$12,094	$14,302	$39,675	$8,081	$6,729	$8,490	$23,300	155%	125%	146%	142%	**Yes**
Distribution Pole Loading Assessments	N/A	N/A	Yes	Seven Years (2014 - 2021)	Complete d in 2022	$1,031	$1,067	$1,191	$3,289	$3,999	$594	$0	$4,592	$2,968	($473)	($1,191)	$1,303	288%	-44%	N/A	40%	No
Distribution Pole Loading Repairs	N/A	N/A	Yes	Eight Years (2014 - 2022)	Complete d in 2023	$804	$831	$913	$2,548	$5,343	$1,250	$95	$6,689	$4,539	$419	($818)	$4,140	565%	50%	-90%	162%	No
Distribution Preventive and Breakdown O&M Maintenance	N/A	N/A	Yes	On-Going	Annual	$111,930	$115,682	$126,966	$354,578	$108,181	$132,017	$113,802	$354,000	($3,749)	$16,334	($13,164)	($579)	-3%	14%	-10%	0%	**Yes**
Distribution Request for Attachment Inspections	N/A	N/A	Yes	On-Going	Annual	$3,111	$3,218	$3,570	$9,899	$1,195	$1,959	$185	$3,339	($1,916)	($1,260)	($3,385)	($6,560)	-62%	-39%	-95%	-66%	No
Distribution Routine Vegetation Management	N/A	N/A	Yes	On-Going	Annual	$108,070	$111,918	$125,325	$345,312	$357,724	$402,596	$356,455	$1,116,775	$249,654	$290,678	$231,130	$771,462	231%	260%	184%	223%	**Yes**
Distribution Underground Detail Inspections	N/A	N/A	Yes	On-Going	Annual	$6,669	$6,878	$7,380	$20,927	$7,549	$8,476	$10,703	$26,728	$880	$1,598	$3,323	$5,801	13%	23%	45%	28%	No
Enhanced Overhead Inspections and Remediations	N/A	N/A	Yes	On-Going	Annual	$61,592	$63,686	$70,656	$195,934	$117,237	$115,418	$115,261	$347,916	$55,645	$51,732	$44,604	$151,982	90%	81%	63%	78%	**Yes**
Fire Hazard Prevention	N/A	N/A	Yes	On-Going	Annual	$0	$0	$0	$0	$349	$79	$595	$1,022	$349	$79	$595	$1,022	N/A	N/A	N/A	N/A	No
Fusing Mitigation	Wildfire	Fusing Mitigation	Yes	Complete	Complete	$1,154	$1,192	$1,296	$3,642	$36	$2	$13	$51	($1,118)	($1,189)	($1,283)	($3,590)	-97%	-100%	-99%	-99%	No
HFRA Sectionalizing Devices	Wildfire	N/A	Yes	On-Going	Annual	$0	$0	$0	$0	$14	$1,027	$2,904	$3,945	$14	$1,027	$2,904	$3,945	N/A	N/A	N/A	N/A	No
Infrared Inspection Program	N/A	Non-RAMP	No	On-Going	Annual	$3,495	$3,593	$3,965	$11,053	$94	$76	$79	$249	($3,401)	($3,517)	($3,887)	($10,804)	-97%	-98%	-98%	-98%	No
Infrared Inspection Program	Wildfire	Infrared Inspections	No	On-Going	Annual	$344	$354	$390	$1,088	$464	$467	$575	$1,506	$120	$113	$185	$418	35%	32%	47%	38%	No
Infrared Inspection Program	N/A	Total	Yes	On-Going	Annual	$3,840	$3,947	$4,356	$12,144	$558	$543	$654	$1,755	($3,282)	($3,404)	($3,703)	($10,389)	-85%	-86%	-85%	-86%	No
Load Side Support	N/A	N/A	Yes	On-Going	Annual	$1,362	$1,406	$1,523	$4,291	$727	$1,060	$1,028	$2,815	($635)	($346)	($495)	($1,476)	-47%	-25%	-32%	-34%	No

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll -up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
Meter System Maintenance Design	N/A	N/A	Yes	On-Going	Annual	$3,489	$3,510	$3,557	$10,555	$3,336	$2,846	$2,840	$9,022	($153)	($664)	($717)	($1,534)	-4%	-19%	-20%	-15%	No
Monitoring and Operating Substations	N/A	N/A	Yes	On-Going	Annual	$44,863	$46,248	$49,694	$140,805	$43,237	$46,410	$48,947	$138,594	($1,626)	$162	($747)	($2,211)	-4%	0%	-2%	-2%	No
Other Substation Equipment Inspections and Maintenance	N/A	N/A	Yes	On-Going	Annual	$1,377	$1,419	$1,517	$4,314	$1,399	$1,478	$1,939	$4,816	$22	$58	$422	$502	2%	4%	28%	12%	No
Patrolling and Locating Trouble	N/A	N/A	Yes	On-Going	Annual	$23,644	$24,386	$26,201	$74,230	$27,315	$30,290	$35,201	$92,807	$3,671	$5,905	$9,001	$18,576	16%	24%	34%	25%	**Yes**
Relay Inspections and Maintenance	N/A	N/A	Yes	On-Going	Annual	$3,318	$3,420	$3,664	$10,402	$2,703	$2,184	$2,109	$6,997	($615)	($1,236)	($1,555)	($3,406)	-19%	-36%	-42%	-33%	No
Streetlight Operations, Inspections, and Maintenance	N/A	N/A	Yes	On-Going	Annual	$6,968	$7,195	$7,823	$21,986	$4,171	$5,665	$6,196	$16,032	($2,797)	($1,530)	($1,627)	($5,954)	-40%	-21%	-21%	-27%	No
Substation - Inspections and Maintenance	N/A	N/A	Yes	On-Going	Annual	$1,320	$1,360	$1,461	$4,141	$959	$962	$1,323	$3,245	($361)	($397)	($137)	($896)	-27%	-29%	-9%	-22%	No
Substation O&M Breakdown Maintenance	N/A	N/A	Yes	On-Going	Annual	$2,591	$2,670	$2,886	$8,147	$2,709	$2,844	$3,893	$9,446	$118	$173	$1,007	$1,299	5%	6%	35%	16%	No
Wildfire Covered Conductor Program	N/A	N/A	Yes	On-Going	Annual	$0	$0	$0	$0	$545	$1,411	$42	$1,998	$545	$1,411	$42	$1,998	N/A	N/A	N/A	N/A	No
Wildfire Vegetation Management	Wildfire	Expanded Vegetation Management	Yes	On-Going	Annual	$24,238	$25,107	$28,184	$77,529	$32,432	$29,170	$17,111	$78,712	$8,194	$4,063	($11,073)	$1,183	34%	16%	-39%	2%	**Yes**

Table VIII-8
Distribution Expense Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Circuit Breaker Inspections and Maintenance	N/A	N/A	SCE forecasted this work activity using Last Year Recorded and does not have a work unit that is applicable.																	No
Dead, Dying and Diseased Tree Removal	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Distribution Apparatus Inspection and Maintenance	N/A	N/A	SCE used LYR as the forecast basis since the number of inspection and the number and type of maintenance items can verify from year-to-year																	No
Distribution Fault Anticipation	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement. Additionally, the 2021 GRC Decision did not authorize any costs or units for DFA in 2021 – 2023.																	No
Distribution Intrusive Pole Inspections	N/A	N/A	# of Intrusive Pole Inspections	129,240	129,240	129,240	387,720	133,972	131,455	78,581	344,008	4,732	2,215	(50,659)	(43,712)	4%	2%	-39%	-11%	**Yes**
Distribution Overhead Detail Inspections	N/A	N/A	There are multiple work activities and non-labor costs that make up this activity making one unit infeasible.																	No
Distribution Pole Loading Assessments	N/A	N/A	# of Poles Assessments	23,000	0	0	23,000	17,961	317	0	18,278	(5,039)	317	0	(4,722)	-22%			-21%	No
Distribution Pole Loading Repairs	N/A	N/A	# of Repairs	1,620	136	0	1,756	1,966	351	25	2,342	346	215	25	586	21%	158%		33%	No
Distribution Preventive and Breakdown O&M Maintenance	N/A	N/A	Distribution Preventive and Breakdown O&M Maintenance costs vary year-to-year based on the required number of preventive and breakdown maintenance items that need to be repaired in each year. The complexity of each repair also contributes to the variance in year-to-year costs. Given this, SCE used recorded data with an adder for new requirements to forecast this activity.																	No
Distribution Request for Attachment Inspections	N/A	N/A	The forecast for this activity is based on a mix of work quantities and SCE labor to support this overall activity.																	No
Distribution Routine Vegetation Management	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Distribution Underground Detail Inspections	N/A	N/A	Inspection Count	167,451	167,451	167,451	502,353	173,822	172,265	187,362	533,449	6,371	4,814	19,911	31,096	4%	3%	12%	6%	No
Enhanced Overhead Inspections and Remediations	N/A	N/A	Unable to identify a single unit due to multiple activities in this workpaper that support capital projects.																	No
Fire Hazard Prevention	N/A	N/A	This is a sub-activity of routine vegetation management, and not forecasted on a unit basis.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Fusing Mitigation	Wildfire	Fusing Mitigation	# of Branch Line Fuses Installed																	No
HFRA Sectionalizing Devices	Wildfire	N/A	# of RARs, RCSs and CBs replaced (See Capital for details)																	No
Infrared Inspection Program	N/A	Non-RAMP	Distribution and Transmission Miles Inspected	3,240	3,240	3,240	9,720	1,050	1,075	1,026	3,151	(2,190)	(2,165)	(2,214)	(6,569)	-68%	-67%	-68%	-68%	**Yes**
Infrared Inspection Program	Wildfire	Infrared Inspections	Distribution and Transmission Miles Inspected	4,340	4,340	4,340	13,020	4,410	4,408	5,401	14,219	70	68	1,061	1,199	2%	2%	24%	9%	**Yes**
Infrared Inspection Program	N/A	Total	Distribution and Transmission Miles Inspected	7,580	7,580	7,580	22,740	5,460	5,483	6,427	17,370	(2,120)	(2,097)	(1,153)	(5,370)	-28%	-28%	-15%	-24%	No
Load Side Support	N/A	N/A	SCE forecasted using a historical average since it is appropriate when the recorded amounts "are influenced by weather or other external forces beyond control of the utility" D.89-12-057. Therefore, this is not unit based.																	No
Meter System Maintenance Design	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Monitoring & Operating Substations	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Other Substation Equipment Inspections and Maintenance	N/A	N/A	Each asset within this category has different inspection/maintenance requirements, which vary year to year. As a result SCE used LYR as a basis as it represents the most recent year from the combined inspection, maintenance, and repair costs for misc. equip, and is reflective of the costs SCE will incur for those activities going forward.																	No
Patrolling and Locating Trouble	N/A	N/A	The number, type, complexity, and duration of activities can vary from year-to-year and are not possible to be forecast. SCE used LYR as its forecast basis given the uncertainty of activities.																	No
Relay Inspections and Maintenance	N/A	N/A	Since the cost for maintenance can vary based on information gathered during field inspections and the type of repair required, we apply an averaging methodology for the activity forecast.																	No
Streetlight Operations, Inspections, and Maintenance	N/A	N/A	Streetlight Inspections are performed on an annual basis for urban areas and every two years in rural areas in compliance with GO 95, however other maintenance and repair work associated with this activity is not unit based and depends on the results of the inspections.																	No
Substation - Inspections and Maintenance	N/A	N/A	Cost can vary depending on the type of repair activity and equipment in scope therefore SCE uses a five-year average and not units to forecast.																	No
Substation O&M Breakdown Maintenance	N/A	N/A	Due to fluctuating recorded costs in this activity to varying inspection cycle of equipment and maintenance requirement of the composition of equip. from year to year, SCE uses a five-year avg. and not units to forecast.																	No
Wildfire Covered Conductor Program	N/A	N/A	There was no associated O&M forecast for this activity. For capital work units please refer to the capital section.																	No
Wildfire Vegetation Management	Wildfire	Expanded Vegetation Management	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No

3. Variance Explanations

Table VIII-9 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table VIII-9
Distribution Expense Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Unit**	**Variance Explanation**
Dead, Dying and Diseased Tree Removal	**Yes**	**Yes**	No	Overall SCE recorded total O&M expenses less than the authorized amount for GRC Activity Dead, Dying and Diseased Tree Removal in 2023. For Dead, Dying and Diseased Tree Removal, the forecast in the 2021 GRC Track 1 for sub-activity Drought Tree Removal (prepared in 2019) estimated a higher volume of removals than that performed in 2023, likely as a result of weather conditions and a lower-than-expected prescription rate for the Dead, Dying, and Diseased Tree Removal Program. The lower costs for Dying and Diseased Tree Removal were partially offset by environmental support costs in 2023, which were not part of this forecast in the 2021 GRC application. In 2023, for Dead, Dying, and Diseased Tree Removal, SCE performed environmental reviews for approximately 5,700 tree removals and provided field support for approximately 5,200 tree removals. Approximately 3,000 tree removals required preparation and submittal of environmental analysis reports to agencies (i.e., agency notifications).
Distribution Intrusive Pole Inspections	No	No	**Yes**	In 2023 SCE underspent and under executed distribution intrusive pole inspections. This variance was driven by the need to address emergent and higher priority work. SCE did not defer any compliance based inspections per G.O. 165 and G.O. 95.
Distribution Overhead Detail Inspections	No	**Yes**	No	In 2020 after SCE developed and filed Test Year 2021 GRC forecasts, SCE implemented the Inspect App software solution, which included additional survey questions for each inspection to obtain additional useful information regarding the asset and its condition, and a more consistent set of information from asset to asset. While inspections have necessarily increased in cost, InspectApp has provided significant safety and reliability benefits on behalf of SCE's customers. Additional benefits include use for asset strategy, risk management, design, and field operations to make better-informed decisions on overhead assets, including those not in High Fire Risk Areas. The use of Inspect App helps ensure that questions regarding asset status and conditions are answered consistently and clearly. Accurate asset data, such as geolocation, equipment type, make, model, material type, and age are foundational for operations, predictive and risk analysis, design, and asset management. Obtaining the data also improves assessment of structure conditions and inventory.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	$	% / $	Unit	Variance Explanation
Distribution Preventive and Breakdown O&M Maintenance	**Yes**	No	No	SCE utilized historical averages to forecast this activity in our TY 2021 GRC since costs can vary year-to-year based on the required number of preventive and breakdown maintenance items that need to be repaired in each year. Further, the complexity of each repair also contributes to the variance in year-to-year costs. This is demonstrated by the fact that SCE's overspend compared to authorized in 2022 is offset by the underspend in 2023. The cumulative 2021 – 2023 spend compared to authorized has less than a 0.2% cost variance.
Distribution Routine Vegetation Management	**Yes**	**Yes**	No	In 2023, SCE identifies the following factors that contributed to SCE's spend over authorized for GRC Activity Distribution Routine Vegetation Management work, which includes, but not limited to: • Traditional Ground Inspections (Pre-Inspection): wage inflation impacted contractor costs as well as an overall higher volume of work • Remote Sensing (LiDAR – D): new work activity relative to the 2021 GRC forecast • Routine Line Clearing (Routine Trims, Routine Removals, Customer Program Support, Traffic Control, and Other): continued impact of SB 247, market pressures, and wage inflation impacted contractor costs • Structure Brushing (Structure Brushing): wage inflation on contractor costs • Quality Control (Distribution Quality Assurance/Check): larger work volume than forecast and wage inflation impacted contractor costs • Other Vegetation Management (Seasonal Patrols, AOC Inspections – D, AOC Repairs / Replacements – D, Non-Routine Trim & Remove T&E, Weed Abatement): larger overall work volume and continued impact of SB 247, market pressures, and wage inflation impacted contractor costs.
Enhanced Overhead Inspections and Remediations	**Yes**	**Yes**	No	For Enhanced Overhead Inspections and Remediations, three main drivers led to recorded O&M expenses that were higher than authorized: (1) increased costs and volume of distribution inspections and remediations (2) increased costs for transmission inspections and remediations and (3) introduction of technology capabilities to support data processing, storage, and compliance with Office of Energy Infrastructure Safety (OEIS) data guidelines. 1) Distribution Inspections and Remediations: In 2023, SCE performed approximately 16,306 O&M distribution remediations at a total cost of $39.765 million, significantly exceeding the remediation volume forecasted in the 2021 GRC of 5,223 O&M remediations. SCE's 2023 spending on distribution inspections in HFRA was reasonable because the scope was selected on a risk-informed basis that was part of SCE's approved 2023-2025 Wildfire Mitigation Plan (WMP). SCE's cost also

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	$	% / $	Unit	Variance Explanation
				exceeded amounts forecasted in the 2021 GRC due to an increase in the volume and cost of aerial inspections. At the time of the 2021 GRC forecast, SCE had limited experience in aerial inspections, and subsequent increases in labor rates services increased SCE's costs beyond the 2021 GRC forecast. 2) Transmission Inspections and Remediations: In 2023, SCE inspected 28,824 transmission structures through aerial inspections at a total cost of $16.781 million. SCE spending more on transmission aerial inspections than forecasted in its 2021 GRC was reasonable because the 2021 GRC forecast was developed without the benefit of significant experience in the operation of an aerial transmission inspection program. Aerial inspections are labor intensive, and require specialized and licensed expertise to operate drones, helicopters, and planes. In 2023, SCE performed 651 transmission O&M remediations at a total cost of $3.199 million. SCE's unit costs for transmission repairs were higher than forecast. This is primarily due to higher labor costs (both normal time and overtime rates), higher material costs, and higher allocations for B materials. Furthermore, the economic conditions when SCE made its forecast in 2019 were markedly different than the economic conditions in 2023, which have been influenced by the COVID-19 pandemic, supply chain issues, and significant inflation. **3)** Technology Capabilities: SCE expanded its technology capabilities for HFRI Inspections and Remediations and recorded O&M expenses for the following efforts: $4.3 million for Technology Support Tools (for the development of InspectForce application to support ground and aerial inspections capabilities and for the Field Management Platform 360 application), $1.9 million for Technology Solutions (for continued implementation of Arbora vegetation management application) and $1.2 million for Data Platform Governance (for licensing and subscription fees to store and process wildfire related data for operational and regulatory reporting purposes).
Infrared Inspection Program	No	No	**Yes**	The variance for this activity is driven by the Transmission IR and Corona inspections. SCE executed at the authorized scope and dollars for the distribution IR inspections that were associated with our 2018 RAMP report (RAMP line in the RSAR report). When SCE filed its 2021 GRC in September 2019, SCE believed at the time that it would be possible (and most cost effective) to conduct Transmission Aerial Inspections in conjunction with Corona and Infrared Scanning, and thus the forecast for both activities was combined in

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	$	% / $	Unit	Variance Explanation
				the Transmission IR & Corona Scans GRC activity (non-RAMP line in the RSAR report). However, as SCE's wildfire mitigation strategies evolved between 2019 and 2020, it became clear that coordinating these two activities together would be impractical given the operational realities of both, and not cost effective. Thus, the activities were separated, and both analyzed using a risk/cost basis and each program developed independently, as detailed in SCE's subsequent Wildfire Mitigation Plan filings. After conducting Corona & IR Scans on the entirety of its HFRA Transmission system in 2019, SCE settled on a 1,000 mile/year basis for this program.
Patrolling and Locating Trouble	No	**Yes**	No	In 2023 SCE experienced higher premium time costs due to converting all overtime to double time per SCE's negotiated contract with IBEW Local #47 Union employees. Patrolling costs are driven by the number of trouble calls received and by the magnitude and complexity of each call that is received. Due to the unpredictability that is necessarily associated with this activity, costs can overrun or underrun when compared to authorized totals.
Wildfire Vegetation Management	**Yes**	**Yes**	No	In 2023, SCE's costs were under the authorized amount for GRC Activity Wildfire Vegetation Management. For the Hazard Tree Management Program (HTMP), the forecast in the 2021 GRC Track 1 for the sub-activity Hazard Tree Removal estimated a higher volume of HTMP removals than were performed in 2023. The lower removal volume was a result of a lower-than-forecast prescription rate for HTMP in 2023. This was likely due to a higher find rate and mitigation volume in prior years for HTMP. In addition, 2023 mitigations would have been influenced by 2022 assessment volume which was considerably lower than prior years. The lower costs for HTMP were partially offset by environmental support costs for HTMP and Structure Brushing, which were not separately forecast in the 2021 GRC Track 1 application. For the Environmental Support program, in 2019, when the 2021 GRC application was filed, HTMP was a relatively new program and Structure Brushing (formerly Pole Brushing) was in a less mature state; consequently, SCE did not separately forecast environmental support costs for those programs. SCE implemented environmental support work for HTMP and Structure Brushing to better ensure compliance with environmental laws and regulations.

4. Activity Status

Table VIII-10 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table VIII-10
Distribution Expense Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Circuit Breaker Inspections and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Dead, Dying and Diseased Tree Removal	On-Going	Annual	Under-	On-Target	Under	Proceeding as Planned	SCE is generally proceeding as planned. Please refer to the variance explanation for rationale in overall lower spending as a result of lower tree removals.
Distribution Apparatus Inspection and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Fault Anticipation	Complete	Complete	N/A	N/A	N/A	Completed	SCE does not currently have any additional scope for this program planned. The 2021 GRC Decision did not authorize any costs for DFA, however when the 2021 GRC Track 1 Final Decision was issued in August 2021, SCE had already scoped 25 units for completion in 2022. Given the costs already spent on those units, it was prudent for SCE to complete those installations. Further, as the 2021 GRC Track 1 Final Decision contemplated a final pilot study, it was reasonable for SCE to conduct a study analyzing the results of the pilot. It was also reasonable for SCE to incur these costs to preserve the function of existing DFA installations and determine the future direction of SCE's use of the technology.
Distribution Intrusive Pole Inspections	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	While SCE is generally proceeding as planned, however as noted in our variance explanation SCE did have to defer some work.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Distribution Overhead Detail Inspections	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	The Scope and Schedule are generally proceeding as planned; however, costs are over target. Refer to the variance explanation for additional detail.
Distribution Pole Loading Assessments	Seven Years (2014 - 2021)	Completed in 2022	On-Target	On-Target	On-Target	Completed	SCE completed this program in 2022.
Distribution Pole Loading Repairs	Eight Years (2014 - 2022)	Completed in 2023	On-Target	Over	Over	Completed	SCE completed this program in 2023, slightly behind schedule. However, there may be some carryover costs that will be recorded in 2024.
Distribution Preventive and Breakdown O&M Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	Overall SCE is generally proceeding as planned. SCE may experience higher or lower costs in any given year since some of this work is reactive from equipment breakdowns. Additional details can be found in the variance explanation.
Distribution Request for Attachment Inspections	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Routine Vegetation Management	On-Going	Annual	Over	On-Target	Over	Expanded / Emergent	SCE is generally proceeding as planned; however, costs and scope are above the TY 2021 GRC forecast. Refer to variance explanation for the rationale for increased costs.
Distribution Underground Detail Inspections	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	SCE is generally proceeding as planned.
Enhanced Overhead Inspections and Remediations	On-Going	Annual	Over	On-Target	Over	Expanded / Emergent	While SCE is generally proceeding as planned and executing the work in this activity, there is emergent work that is contributing to the overspend. Please refer to the variance explanation for details on the emergent scope and costs associated with Enhanced Overhead Inspections and Remediations.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Fire Hazard Prevention	On-Going	Annual	N/A	N/A	N/A	Expanded / Emergent	SCE did not request funding for this activity in our TY 2021 GRC. These inspections involve a detailed visual inspection of generation assets to identify any equipment issues or conditions that might cause an ignition risk. SCE is generally proceeding as planned to our currently forecasted work for this activity.
Fusing Mitigation	Complete	Complete	N/A	N/A	N/A	Completed	SCE does not currently have any additional scope for this program planned.
HFRA Sectionalizing Devices	On-Going	Annual	N/A	N/A	N/A	Expanded / Emergent	SCE did not have an O&M forecast for 2021 – 2023 in our TY 2021 GRC application. In 2018, SCE could not have foreseen 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. 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, in late 2019 and after it developed its 2021 GRC forecast, 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.
Infrared Inspection Program	On-Going	Annual	Under	Under	Under	Proceeding as Planned	As noted in our variance explanations, SCE has revisited our strategy on the transmission infrared and corona scans and is executing to that level**.**
Load Side Support	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Meter System Maintenance Design	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Monitoring and Operating Substations	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Other Substation Equipment Inspections and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	On-Target	SCE is generally proceeding as planned.
Patrolling and Locating Trouble	On-Going	Annual	On-Target	On-Target	On-Target	On-Target	SCE is generally proceeding as planned, however SCE is experiencing some cost pressures as noted in our variance explanation.
Relay Inspections and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Streetlight Operations, Inspections, and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Substation - Inspections and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Substation O&M Breakdown Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Wildfire Covered Conductor Program	On-Going	Annual	N/A	N/A	N/A	Expanded / Emergent	SCE did not request funding for this in our TY 2021 GRC application. This work includes covered conductor remediation work SCE performed on certain earlier-installed covered conductor projects to bring those installations up to SCE's current construction and design standards.
Wildfire Vegetation Management	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned. For additional details on this activity's year over year variances please refer to variance explanations.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

For the Distribution capital activities that are SAR-eligible, Table VIII-11 provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table VIII-11
Distribution Capital Expenditure Category Activity Description

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
4 kV Cutovers	The 4 kV Cutover Program is the conversion, or cutover, of all circuits fed from the selected substation from the lower voltage class to a higher voltage class. The 4 kV Cutover Program is a part of the larger 4 kV Substation Elimination Program, which has the purpose of addressing equipment obsolescence, safety, and reliability.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 89 - 90	N/A	N/A
4 kV Cutovers - Load Growth Driven	The 4 kV Cutovers – Load Growth Driven Program addresses overloads on 4 kV circuits and substations due to load growth in areas that these circuits and substations serve. To maintain safe and reliable service to the customers that are currently served from islanded 4 kV systems, SCE plans to cutover sections of circuit or full circuits that do not have adequate operational flexibility.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4P2ChII BkA pp. 332-336	N/A	N/A
4 kV Substation Eliminations	4 kV Substation Eliminations include substation equipment removal, soil remediation, and removal of associated buildings. 4 kV Substation Eliminations is a part of the larger 4 kV Substation Elimination Program which has the purpose of addressing equipment obsolescence, safety, and reliability.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 91 - 100	N/A	N/A
Automatic Reclosers Replacement Program	Automatic Reclosers Replacement Program includes costs associated with replacing automatic reclosers (ARs). ARs are used in distribution circuits to interrupt the supply of electricity to that portion of the circuit	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 85 - 88	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	downstream of its location. They act similar to circuit breakers but are installed in a distribution circuit rather than a substation.				
Automation	Automation includes costs for incorporating automation equipment, technologies, and operations into our electric system which allows SCE to (1) provide system operators the flexibility to safely isolate faults, (2) safely restore additional customers more quickly following a fault, (3) reduce the number of customer outages, (4) measure load and DER behavior, and (5) manage groups of DERs. The Distribution Automation Programs will help to enable system operators to overcome masked load and DER variability concerns to safely manage a system with many DERs.	SCE-02 Vol: 4 Pt. 1	WPSCE02V4Pt1ChII BkA pp. 169 – 175	N/A	N/A
Cable Life Extension (CLE) Program	The Cable Life Extension (CLE) Program, in concert with the Cable-in-Conduit (CIC) Replacement Program, addresses the risks of radial cable failures. The CLE program performs two types of life-extension activities for CIC conductor: (1) testing and (2) injection.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 45 - 55	Underground Equipment Failure	Cable Replacement Programs (CIC)
Cable-in-Conduit (CIC) Replacement Program	The Cable-in-Conduit (CIC) Replacement Program proactively replaces segments of SCE's Cable-in-Conduit population that are approaching the end of their service life. The objective of the program is to reduce the number of in-service failures of CIC cable and thus drive down the number of unplanned outages for SCE customers.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 56 - 59	Underground Equipment Failure	Cable Replacement Programs (CIC)
Capacitor Bank Replacement Program	The Capacitor Bank Replacement Program replaces or removes failed and obsolete distribution capacitor banks and their associated	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 77 - 80	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	capacitor switches. Capacitor banks are flagged within field inspection in order to be targeted for replacement as a part of cyclic inspections or found in field. Each capacitor bank is composed of three capacitor units, fuses, a rack, and mounting hardware.				
DER-Driven Grid Reinforcement	Capital expenditures in DER Hosting Capacity Reinforcement include the subset of projects that SCE has identified for reliability and technology pilot purposes. SCE's load growth planning process and its related DER studies have identified Grid Reinforcement projects driven by immediate capacity and other planning criteria needs.	SCE-02 Vol: 4 Pt. 1	WPSCE02V4P1ChII BkA. P. 208	N/A	N/A
Distribution Circuit Upgrades	The Distribution Circuit Upgrades Program covers forecast expenditures for work outside of the substation required to relieve heavily loaded distribution circuits and substations expected to exceed distribution planning criteria limits. This includes all work required on distribution circuits to solve distribution needs. This work enables distribution circuits to carry more electric current and/or make necessary transfers between distribution circuits and substations to mitigate situations where equipment is forecast to exceed capacity limits. Typical work includes installing new switches, upgrading cable or conductor, or installing new conductor to create circuit ties to facilitate load transfers between substations and circuits.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChI IBkA pp. 30-33	N/A	N/A
Distribution Claim	Distribution Claim includes the costs incurred by SCE to repair damage to the distribution system caused by another party. In cases where SCE is	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 58 - 61	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	able to identify the party responsible for the damage, SCE pursues recovery of the costs to repair the damage.				
Distribution Deteriorated Pole Replacement	The costs incurred for intrusive pole inspections of distribution and transmission poles. Intrusive inspections require inspectors with proper training and experience to drill into the pole's exterior to identify and measure the extent of internal decay which is typically undetectable with external observation alone. Additionally, the inspector does a visual inspection of the exterior of the pole to check for damage.	SCE-02 Vol: 5	WPSCE02V5, pp. 147-148; 210	N/A	N/A
Distribution Fault Anticipation	This activity includes the costs associated with the rollout of Distribution Fault Anticipation devices as well as data services and analysis provided by Texas A&M.	SCE-04 Vol: 5	WPSCE-04Vol.05A, pp. 331 - 336	N/A	N/A
Distribution Plant Betterment	Distribution Plant Betterment is an activity that performs system improvements and projects to address local needs that are not covered by the Distribution Circuit Upgrades (DCU) Program. This activity can include projects to address changes in load profiles that drive local low voltage problems, new protection devices and switches needed for safety and reliability, new developments that require a single-phase circuit voltage where none exists, new street or freeway improvements that impact SCE's electric infrastructure, and more.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChI IBkbkB pp. 338-342	N/A	N/A
Distribution Pole Loading Program Pole Replacement	The costs incurred for intrusive pole inspections of distribution poles. Intrusive inspections require inspectors with proper training and experience to drill into the pole's exterior to identify and measure the extent of internal decay	SCE-02 Vol: 5	WPSCE02V5, pp. 149-150	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	which is typically undetectable with external observation alone. Additionally, the inspector does a visual inspection of the exterior of the pole to check for damage.				
Distribution Preventive and Breakdown Capital Maintenance	The maintenance activity captures the labor, equipment, and other material costs to remove and replace failed distribution equipment.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 38 - 43	N/A	N/A
Distribution Storm Response Capital	Distribution Storm Response Capital includes costs related to repair and replacement performed as part of a storm response on Distribution facilities.	SCE-04 Vol: 2	WPSCE04V2 pp. 44 - 45	N/A	N/A
Distribution Substation Plan (DSP) Circuits	As part of the DSP Program, new distribution circuits are required to provide new capacity outside the substation fence in areas where multiple distribution circuits in the same geographical region are expected to exceed capacity; to serve new residential or commercial developments in areas with no existing electrical infrastructure; and to relieve existing circuits projected to exceed capacity in geographically isolated areas with limited usable circuit ties to transfer load.	SCE-04 Vol: 2	WPSCE02V4PT2ChI IBkA pp. 34-41	N/A	N/A
Distribution Substation Plan Substations	SCE identifies required substation projects through the Distribution Substation Planning process when lower cost solutions, such as distribution circuit upgrades or new circuits, do not adequately address an overload. Substation projects include capacity additions or upgrades to facilities at existing substations and within the existing perimeter of the substation property, additions or upgrades that require perimeter	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChI IBkbkA pp. 42-141	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	expansion of the substation property, and new substations.				
Distribution Tools and Work Equipment	The activity, Distribution Tools and Work Equipment includes purchasing portable tools and specialized test equipment used by distribution personnel when performing work on SCE's distribution grid. These expenditures are for tools or equipment costing more than $1,000.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 83 - 86	N/A	N/A
Distribution Transformers	SCE replaces distribution transformers when they fail in service, or when we observe deterioration during inspection or other fieldwork. Deterioration includes leaks, corrosion, and damage caused by vehicle collisions or acts of nature. In addition to the material cost for the transformer, this activity includes associated costs such as waste removal, material retirement/cleanup, material testing, and transformer coatings.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 92 - 107	N/A	N/A
Distribution Volt VAR Control and Capacitor Automation Program	The Programmable Capacitor Control (PCC) Replacement Program and the associated Distribution Volt VAR Control (DVVC) algorithm are implemented at SCE to allow for Conservation Voltage Regulation (CVR) to decrease energy consumption, while maintaining reliable voltage delivery to SCE customers.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChI IBkbkB pp. 352-359	N/A	N/A
Distribution Wood Pole Disposal	Distribution Wood Pole Disposal are the costs incurred when safely disposing poles that are removed from service.	SCE-02 Vol: 5	WPSCE02V5, pp. 214-215; 216 - 218	N/A	N/A
Engineering and Planning Software Tools	Engineering and Planning Software Tools support SCE in calculating the amount of DERs that the distribution system can host without triggering a distribution infrastructure upgrade, and in forecasting SCE's short-term and long-	SCE-02 Vol: 4 Pt. 1	WPSCE02V4P1ChII BkA pp. 121 - 144	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	term grid needs. E&P software tools include, Grid Connectivity Model, the Grid Analytics Application, the Long-term Planning Tool (LTPT) and System Modeling Toolset (SMT), Grid Interconnection Processing Tool and DRP External Portal. SCE's continued investments in these new E&P software tools will help resolve multiple limitations with SCE's legacy tools.				
Enhanced Overhead Inspections and Remediations	Enhanced Overhead Inspections and Remediations includes the costs associated with performing Enhanced Overhead Inspections and remediation of findings across SCE's High Fire Risk Area.	SCE-04 Vol: 5	WP SCE-04 Vol. 05A, Part 1 pp. 390 - 405	N/A	N/A
Fusing Mitigation	Fusing Mitigation includes the costs associated with the installation of branch line fusing as well as substation class fusing within SCE's High Fire Risk Area.	SCE-04 Vol: 5	WPSCE-04Vol.05A, pp. 270 - 284	Wildfire	Fusing Mitigation
HFRA Sectionalizing Devices	The activity, HFRA Sectionalizing Devices includes the costs associated with the installation of Remote Automatic Reclosers (RARs), Remote-Controlled Switches (RCSs), and replacement of relay hardware in order to sectionalize circuits that traverse High Fire Risk Area boundaries.	SCE-04 Vol: 5	WPSCE-04Vol.05A, pp. 309 - 318	Wildfire	Remote-Controlled Automatic Reclosers and Fast Curve Settings
Meter System Maintenance Design	Advanced Metering Operations analyzes meter and communication data to identify failed devices, issue repair orders, optimize communication performance, update firmware, and mitigate system problems. These monitoring activities help ensure customer usage data is accurate and processed for use by other SCE operational units.	SCE-02 Vol: 1 Pt. 3	WPSCE02V1P3 pp. 38 - 43	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
New Capacitors	The program plans installation of new capacitors on distribution circuits that have a reactive power (VAR) deficit in order to help maintain adequate power factor.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChI IBkB pp.343-348	N/A	N/A
Overhead Conductor Program (OCP)	The Overhead Conductor Program (OCP) is SCE's program to replace small overhead conductors that do not meet present standards with larger conductors, and to install protective devices to improve protection of overhead conductor.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 81 - 84	Contact with Energized Equipment	Overhead Conductor Program (OCP)
PCB Transformer Removal	The Polychlorinated biphenyls (PCB) Transformer Removal Program replaces distribution line transformers suspected of being contaminated with PCB oil greater than 50 parts per million (ppm). PCBs are chemicals that have dangerous effects on the environment and human health.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 101 - 108	N/A	N/A
Prefabrication	Each of SCE's 34 district service centers has a prefabrication operation responsible for staging material for the construction crews, assembling prepackaged kits, and properly disposing of materials removed from jobsites.	SCE-02 Vol: 1 Pt. 2	WPSCE02V1P2 pp. 87 - 91	N/A	N/A
Preventive Maintenance	This maintenance activity captures the labor, equipment, and other material costs to remove and replace assets not identified in other replacement programs, on a programmatic basis.	SCE-02 Vol: 3	WPSCE02V3 – pp. 107 - 115	N/A	N/A
PSPS Execution	PSPS Execution includes the costs associated with activities and investments that support the active execution of Public Safety Power Shutoff (PSPS) events, which includes the IMT (organized command structure and support systems) and Line Patrols, deployed prior to a PSPS event and prior to re-energizing circuits.	SCE-04 Vol: 5	WPSCE04V5Pt2 pp. 55 - 58	Wildfire	PSPS Protocol and Support Functions

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Streetlight Maintenance and LED Conversions	SCE owns and maintains over 680,000 lights in our service territory. Most streetlights on SCE's system are concrete electroliers with High Pressure Sodium Vapor (HPSV) luminaires. SCE plans to install LED technology that is more energy efficient and requires less maintenance as compared to HPSV luminaires.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 p. 141	N/A	N/A
Substation Emergency Equipment	SCE maintains an inventory of equipment requiring a long lead-time for ordering, especially as infrastructure ages. When equipment and parts must be reactively replaced, SCE minimizes delays through its Emergency Equipment Program (EEP). This inventory enables SCE to reduce outage time at the substation and minimizes interruption caused by an unplanned major equipment failure.	SCE-02 Vol: 3	WPSCE02Vol. 03, pp. 250-259	N/A	N/A
Substation Equipment Replacement Program	The Substation Equipment Replacement Program (SERP) replaces substation equipment identified to exceed their protection ratings to interrupt fault current. SCE identifies substation circuit breakers projected to exceed short circuit duty interrupting capabilities by comparing each circuit breaker's short circuit duty rating with the potential fault current that circuit breaker will have to interrupt.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChI IBkbkB pp. 20-22	N/A	N/A
Substation Tools and Work Equipment	As SCE upgrades equipment inside and outside of the substation, it must also purchase new tools that are necessary for testing, commissioning, inspecting and maintaining this new equipment. Substation Tools and Work Equipment also includes the costs to replace obsolete work equipment. These tool expenditures include the	SCE-02 Vol: 3	WPSCE02Vol. 03, pp. 244-245	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	costs for acquiring and retiring portable tools and equipment whose cost exceeds $1,000.				
Underground Structure Replacements	The Underground Structure Replacement program consists of three different sub-activities; structure replacements; vault shoring; and Cover Pressure Relief and Restraint (CPRR) intended to prevent primary distribution underground electrical equipment failures that could potentially lead to a vault or manhole explosion event.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 64 - 76	Underground Equipment Failure	Cover Pressure Relief and Restraint (CPRR) Program
Underground Switch Replacements	The Underground Switch Replacement program removes old oil-filled underground distribution switches located in underground structures and replaces them with newer technology switches. The primary reason for SCE's program to remove old oil-filled switches is that failures of oil-filled switches can damage adjacent electrical equipment (e.g., cable, transformers, switches).	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 60 - 63	Underground Equipment Failure	UG Oil Switch Replacement Program
Undergrounding	Undergrounding of existing overhead power lines consists of digging a continuous trench approximately 24" wide and anywhere from 36" to 62" deep, depending on number of conduits required. Vaults and manholes will be needed at regular intervals along this trench to accommodate cable pulling and electrical connections, as well as any underground equipment being relocated from the overhead system. These structures vary in size from 7'x18'x8' for the largest vaults to 5'x10'6"x7' for the smallest standard manhole.	SCE-04 Vol: 5	WPSCE-04Vol.05A, pp. 346 - 350	N/A	N/A
Wildfire Covered Conductor Program	Wildfire Covered Conductor Program includes the costs associated with installation of covered conductors, installation of fire-resistant poles,	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 247 - 262	Wildfire	Wildfire Covered Conductor Program

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	and mitigation of tree attachments in SCE's High Fire Risk Area.				
Worst Circuit Rehabilitation (WCR)	The Worst Circuit Rehabilitation (WCR) program has two primary objectives: (1) mitigate the safety and reliability risks associated with mainline cable failures; and (2) improve the reliability performance of Worst Performing Circuits (WPCs) within the SCE system.	SCE-02 Vol: 1 Pt. 1	WPSCE02V1P2 pp. 37 - 48	Underground Equipment Failure	Worst Circuit Rehabilitation (WCR)

2. GRC Activities Dollar and Unit Variance Calculations

Table VIII-12 below provides the authorized, recorded, variance and percentage change values for each Distribution expenditure category activity in terms of dollars and units. The table also indicates whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table VIII-12
Distribution Capital Expenditure Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll -up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff. to Date**	**$ Variance Explanation Required**
4 kV Cutovers	N/A	N/A	Yes	On-Going	Annual	$10,221	$10,221	$10,221	$30,663	$26,155	$23,505	$61,138	$110,798	$15,934	$13,284	$50,917	$80,135	156%	130%	498%	261%	**Yes**
4 kV Cutovers - Load Growth Driven	N/A	N/A	Yes	On-Going	Annual	$19,285	$19,285	$19,285	$57,856	$18,800	$14,818	$25,501	$59,119	($485)	($4,467)	$6,215	$1,264	-3%	-23%	32%	2%	No
4 kV Substation Eliminations	N/A	N/A	Yes	On-Going	Annual	$3,366	$3,366	$3,366	$10,099	$4,490	$2,235	$3,809	$10,535	$1,124	($1,131)	$443	$436	33%	-34%	13%	4%	No
Automatic Reclosers Replacement Program	N/A	N/A	Yes	On-Going	Annual	$2,673	$2,673	$2,673	$8,019	$2,239	$1,532	$1,219	$4,990	($434)	($1,141)	($1,454)	($3,028)	-16%	-43%	-54%	-38%	No
Automation	N/A	N/A	Yes	On-Going	Annual	$36,908	$36,908	$36,908	$110,724	$21,822	$22,736	$26,449	$71,007	($15,086)	($14,172)	($10,459)	($39,717)	-41%	-38%	-28%	-36%	**Yes**
Cable Life Extension (CLE) Program	Underground Equipment Failure	Cable Replacement Programs (CIC)	Yes	On-Going	Annual	$0	$0	$0	$0	$41	$66	$26	$133	$41	$66	$26	$133	N/A	N/A	N/A	N/A	No
Cable-in-Conduit (CIC) Replacement Program	Underground Equipment Failure	Cable Replacement Programs (CIC)	Yes	On-Going	Annual	$6,133	$6,133	$6,133	$18,398	$6,823	$8,069	$6,955	$21,847	$690	$1,936	$823	$3,449	11%	32%	13%	19%	No
Capacitor Bank Replacement Program	N/A	N/A	Yes	On-Going	Annual	$2,781	$2,781	$2,781	$8,343	$3,073	$4,396	$2,546	$10,016	$292	$1,615	($235)	$1,672	10%	58%	-8%	20%	No
DER-Driven Grid Reinforcement	N/A	N/A	Yes	Complete	Complete	$1,523	$1,523	$1,523	$4,570	$405	$976	$3,154	$4,535	($1,118)	($547)	$1,631	($34)	-73%	-36%	107%	-1%	No
Distribution Circuit Upgrades	N/A	N/A	Yes	On-Going	Annual	$44,271	$44,271	$44,271	$132,813	$41,140	$58,939	$41,274	$141,352	($3,131)	$14,667	($2,997)	$8,539	-7%	33%	-7%	6%	No
Distribution Claim	N/A	N/A	Yes	On-Going	Annual	$44,538	$44,538	$44,538	$133,615	$42,879	$53,517	$57,269	$153,665	($1,659)	$8,978	$12,731	$20,049	-4%	20%	29%	15%	**Yes**
Distribution Deteriorated Pole Replacement	N/A	N/A	Yes	On-Going	Annual	$213,969	$213,969	$213,969	$641,908	$218,326	$210,776	$179,378	$608,480	$4,357	($3,193)	($34,592)	($33,428)	2%	-1%	-16%	-5%	**Yes**
Distribution Fault Anticipation	N/A	N/A	Yes	Complete	Complete	$0	$0	$0	$0	$8,362	$2,149	$47	$10,558	$8,362	$2,149	$47	$10,558	N/A	N/A	N/A	N/A	No
Distribution Plant Betterment	N/A	N/A	Yes	On-Going	Annual	$3,871	$3,871	$3,871	$11,612	$21,226	$34,062	$26,856	$82,144	$17,355	$30,191	$22,985	$70,532	448%	780%	594%	607%	**Yes**
Distribution Pole Loading Program Pole Replacement	N/A	N/A	Yes	Eleven Years (2014 - 2025)	Ten of Eleven	$267,436	$267,436	$267,436	$802,307	$279,422	$349,308	$267,372	$896,102	$11,986	$81,872	($63)	$93,795	4%	31%	0%	12%	No
Distribution Preventive and Breakdown Capital Maintenance	N/A	N/A	Yes	On-Going	Annual	$293,061	$293,061	$293,061	$879,182	$338,638	$336,659	$431,056	$1,106,353	$45,577	$43,598	$137,995	$227,170	16%	15%	47%	26%	**Yes**
Distribution Storm Response Capital	N/A	N/A	Yes	On-Going	Annual	$42,910	$42,910	$42,910	$128,730	$37,599	$37,172	$73,536	$148,308	($5,311)	($5,738)	$30,626	$19,577	-12%	-13%	71%	15%	**Yes**
Distribution Substation Plan (DSP) Circuits	N/A	N/A	Yes	On-Going	Annual	$55,432	$55,432	$55,432	$166,295	$33,207	$47,678	$46,641	$127,525	($22,225)	($7,754)	($8,791)	($38,770)	-40%	-14%	-16%	-23%	No
Distribution Substation Plan Substations	N/A	N/A	Yes	On-Going	Annual	$65,867	$65,867	$65,867	$197,601	$32,483	$51,800	$42,735	$127,018	($33,384)	($14,067)	($23,132)	($70,583)	-51%	-21%	-35%	-36%	**Yes**

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll -up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
Distribution Tools and Work Equipment	N/A	N/A	Yes	On-Going	Annual	$3,513	$3,513	$3,513	$10,538	$1,971	$3,192	$6,230	$11,393	($1,542)	($321)	$2,717	$855	-44%	-9%	77%	8%	No
Distribution Transformers	N/A	N/A	Yes	On-Going	Annual	$101,816	$101,816	$101,816	$305,447	$97,069	$110,288	$188,214	$395,572	($4,747)	$8,473	$86,399	$90,124	-5%	8%	85%	30%	**Yes**
Distribution Volt VAR Control and Capacitor Automation Program	N/A	N/A	Yes	On-Going	Annual	$2,595	$2,595	$2,595	$7,785	$2,772	$1,865	$1,441	$6,078	$177	($730)	($1,154)	($1,707)	7%	-28%	-44%	-22%	No
Distribution Wood Pole Disposal	N/A	N/A	Yes	On-Going	Annual	$4,788	$4,788	$4,788	$14,364	$5,350	$6,494	$5,967	$17,811	$562	$1,706	$1,179	$3,447	12%	36%	25%	24%	No
Engineering and Planning Software Tools	N/A	N/A	Yes	On-Going	Annual	$27,866	$27,866	$27,866	$83,598	$24,463	$25,211	$34,504	$84,178	($3,403)	($2,655)	$6,638	$580	-12%	-10%	24%	1%	No
Enhanced Overhead Inspections and Remediations	N/A	N/A	Yes	On-Going	Annual	$49,553	$43,572	$43,009	$136,135	$135,028	$138,859	$108,915	$382,801	$85,475	$95,287	$65,905	$246,667	172%	219%	153%	181%	**Yes**
Fusing Mitigation	Wildfire	Fusing Mitigation	Yes	Complete	Complete	$0	$0	$0	$0	($479)	$56	$837	$414	($479)	$56	$837	$414					No
HFRA Sectionalizing Devices	Wildfire	Remote-Controlled Automatic Reclosers and Fast Curve Settings	Yes	On-Going	Annual	$5,334	$5,518	$0	$10,852	$7,891	$17,586	$7,066	$32,543	$2,557	$12,068	$7,066	$21,691	48%	219%	N/A	200%	No
Meter System Maintenance Design	N/A	N/A	Yes	On-Going	Annual	$922	$922	$922	$2,765	$384	$374	$813	$1,570	($538)	($548)	($109)	($1,195)	-58%	-59%	-12%	-43%	No
New Capacitors	N/A	N/A	Yes	On-Going	Annual	$3,783	$3,783	$3,783	$11,349	$3,085	$2,686	$1,940	$7,710	($698)	($1,097)	($1,843)	($3,639)	-18%	-29%	-49%	-32%	No
Overhead Conductor Program (OCP)	Contact with Energized Equipment	Overhead Conductor Program (OCP)	Yes	On-Going	Annual	$72,641	$72,641	$72,641	$217,922	$84,713	$74,101	$70,796	$229,610	$12,072	$1,461	($1,845)	$11,688	17%	2%	-3%	5%	No
PCB Transformer Removal	N/A	N/A	Yes	On-Going	Annual	$1,990	$1,990	$1,990	$5,970	$2,284	$1,498	$2,080	$5,863	$294	($491)	$90	($107)	15%	-25%	5%	-2%	No
Prefabrication	N/A	N/A	Yes	On-Going	Annual	$22,935	$22,935	$22,935	$68,806	$17,195	$18,665	$25,141	$61,000	($5,740)	($4,271)	$2,205	($7,805)	-25%	-19%	10%	-11%	No
Preventive Maintenance	N/A	N/A	Yes	On-Going	Annual	$48,595	$48,595	$48,595	$145,784	$61,373	$45,692	$61,669	$168,734	$12,778	($2,902)	$13,074	$22,950	26%	-6%	27%	16%	**Yes**
PSPS Execution	Wildfire	PSPS Protocol and Support Functions	Yes	On-Going	Annual	$756	$0	$0	$756	$3,309	$5,876	$3,798	$12,983	$2,553	$5,876	$3,798	$12,227	338%	N/A	N/A	1617%	No
Streetlight Maintenance and LED Conversions	N/A	N/A	Yes	On-Going	Annual	$51,549	$51,549	$51,549	$154,648	$45,836	$34,734	$43,304	$123,874	($5,713)	($16,816)	($8,245)	($30,774)	-11%	-33%	-16%	-20%	No
Substation Emergency Equipment	N/A	N/A	Yes	On-Going	Annual	$24,704	$24,704	$24,704	$74,111	$24,119	$16,677	$12,002	$52,798	($585)	($8,027)	($12,702)	($21,314)	-2%	-32%	-51%	-29%	**Yes**
Substation Equipment Replacement Program	N/A	N/A	Yes	On-Going	Annual	$37,680	$37,680	$37,680	$113,039	$22,908	$12,119	$7,968	$42,995	($14,772)	($25,561)	($29,712)	($70,045)	-39%	-68%	-79%	-62%	**Yes**
Substation Tools and Work Equipment	N/A	N/A	Yes	On-Going	Annual	$7,741	$7,741	$7,741	$23,224	$5,762	$8,049	$6,234	$20,045	($1,979)	$308	($1,508)	($3,179)	-26%	4%	-19%	-14%	No
Underground Structure Replacements	N/A	Non-RAMP	No	On-Going	Annual	$5,265	$5,265	$5,265	$15,795	$18,846	$13,298	$25,500	$57,644	$13,581	$8,033	$20,235	$41,849	258%	153%	384%	265%	**Yes**
Underground Structure Replacements	N/A	Total	Yes	On-Going	Annual	$13,887	$13,887	$13,887	$41,661	$26,453	$20,588	$33,422	$80,463	$12,566	$6,701	$19,535	$38,802	90%	48%	141%	93%	**Yes**
Underground Structure Replacements	Underground Equipment Failure	Cover Pressure Relief and Restraint (CPRR) Program	No	On-Going	Annual	$8,622	$8,622	$8,622	$25,866	$7,607	$7,290	$7,922	$22,819	($1,015)	($1,332)	($700)	($3,047)	-12%	-15%	-8%	-12%	No
Underground Switch Replacements	Underground Equipment Failure	UG Oil Switch Replacement Program	Yes	On-Going	Annual	$2,705	$2,705	$2,705	$8,115	$3,230	$4,524	$2,829	$10,584	$525	$1,819	$124	$2,469	19%	67%	5%	30%	No

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll -up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff, to Date**	**$ Variance Explanation Required**
Undergrounding	N/A	N/A	Yes	On-Going	Annual	$23,047	$43,713	$45,190	$111,950	$6,586	$29,704	$16,829	$53,119	($16,461)	($14,008)	($28,362)	($58,831)	-71%	-32%	-63%	-53%	**Yes**
Wildfire Covered Conductor Program	Wildfire	Wildfire Covered Conductor Program	Yes	On-Going	Annual	$557,495	$580,066	$604,826	$1,742,387	$919,542	$808,573	$805,668	$2,533,782	$362,047	$228,507	$200,842	$791,395	65%	39%	33%	45%	**Yes**
Worst Circuit Rehabilitation (WCR)	Undergro und Equipme nt Failure	Worst Circuit Rehabilitation (WCR)	Yes	On-Going	Annual	$7,127	$7,127	$7,127	$21,381	$18,764	$6,049	$14,072	$38,885	$11,637	($1,077)	$6,945	$17,505	163%	-15%	97%	82%	No

Table VIII-13
Distribution Capital Expenditure Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Unit Description / Rationale for No Work Units**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Imputed Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Unit Diff. to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Unit Diff. to Date (%)**	**Unit Variance Explanation Triggered?**
4 kV Cutovers	N/A	N/A	# of Transformers Removed	159	159	159	477	393	326	300	1019	234	167	141	542	147%	105%	89%	114%	**Yes**
4 kV Cutovers - Load Growth Driven	N/A	N/A	# of Transformers Removed – SCE did not provide a specific unit count in GRC testimony or workpapers for 2021.																	No
4 kV Substation Eliminations	N/A	N/A	# of 4 kV Substations Removed	3	1	1	5	3	1	1	5	0	0	0	0	0%	0%	0%	0%	No
Automatic Reclosers Replacement Program	N/A	N/A	# of Automatic Reclosers Replaced	31	31	31	93	12	14	10	36	-19	-17	-21	-57	-61%	-55%	-68%	-61%	**Yes**
Automation	N/A	N/A	This includes multiple sub-programs that vary in unit types. Therefore, providing one unit type is not feasible.																	No
Cable Life Extension (CLE) Program	Underground Equipment Failure	Cable Replacement Programs (CIC)	SCE did not request or receive authorization for this work activity in our TY 2021 GRC Application.																	No
Cable-in-Conduit (CIC) Replacement Program	Underground Equipment Failure	Cable Replacement Programs (CIC)	Conductor Miles Replaced	18	18	18	54	34	28.2	11	73.2	16	10.2	-7	19.2	89%	57%	-39%	36%	**Yes**
Capacitor Bank Replacement Program	N/A	N/A	Capacitor Banks Replaced	70	70	70	210	54	86	62	202	-16	16	-8	-8	-23%	23%	-11%	-4%	No
DER-Driven Grid Reinforcement	N/A	N/A	This activity is comprised of SCE's Sub transmission Relay Upgrade and is not unit based.																	No
Distribution Circuit Upgrades	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Distribution Claim	N/A	N/A	This activity is driven by factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast is based on historical average of recorded expenditures and is not unit based.																	No
Distribution Deteriorated Pole Replacement	N/A	N/A	# of Distribution Pole Replacements	10,513	10,513	105,13	31,539	9,983	9,520	6,094	25,597	-530	-993	-4,419	-5,942	-5%	-9%	-42%	-19%	**Yes**
Distribution Fault Anticipation	N/A	N/A	# of HFRA Circuits	0	0	0	0	130	25	0	155	130	25	0	155					No
Distribution Plant Betterment	N/A	N/A	As the work can vary in this activity, the forecasted spend used a historical average of completed projects and is not unit based.																	No
Distribution Pole Loading Program Pole Replacement	N/A	N/A	# of Distribution Pole Replacements	14,187	14,187	14,187	42,561	11,629	14,306	7,868	33,803	-2,558	119	-6,319	-8,758	-18%	1%	-45%	-21%	**Yes**
Distribution Preventive and Breakdown Capital Maintenance	N/A	N/A	The annual costs vary from year-to-year based on the volume of preventive and breakdown maintenance items found during inspections, as well as the complexity of the required repair. Given this, SCE used recorded data to forecast this activity.																	No
Distribution Storm Response Capital	N/A	N/A	Storm events are driven by weather and other environmental factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast for Storm Response is based on a five-year average of recorded expenditures and is not unit based.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Distribution Substation Plan (DSP) Circuits	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Distribution Substation Plan Substations	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Distribution Tools and Work Equipment	N/A	N/A	The variety of tool and work equipment in this category makes it infeasible to identify a single unit of measurement.																	No
Distribution Transformers	N/A	N/A	# of Distribution Transformers	21,654	21,654	21,654	64,962	27,161	21,524	24,687	73,372	5,507	-130	3,033	8,410	25%	-1%	14%	13%	No
Distribution Volt VAR Control and Capacitor Automation Program	N/A	N/A	# of Programmable Capacitor Controls Replaced	450	450	450	1,350	524	216	244	984	74	-234	-206	-366	16%	-52%	-46%	-27%	**Yes**
Distribution Wood Pole Disposal	N/A	N/A	The forecast for this activity is based on the number of pole replacements and the disposal unit cost. The unit cost is based on a five-year average. A five-year average was selected because the cost varies and is difficult to predict.																	No
Engineering and Planning Software Tools	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Enhanced Overhead Inspections and Remediations	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Fusing Mitigation	Wildfire	Fusing Mitigation	# of Current Limiting Fuses	0	0	0	0	0	0	0	0	0	0	0	0					No
HFRA Sectionalizing Devices	Wildfire	Remote-Controlled Automatic Reclosers and Fast Curve Settings	# of CB Relay Hardware for Fast Curve	34	34	34	102	95	117	29	212	61	83	29	173	179%	244%	N/A	254%	**Yes**
Meter System Maintenance Design	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
New Capacitors	N/A	N/A	# of New Capacitors Installed– SCE did not provide a specific unit count in GRC testimony or workpapers for 2021.																	No
Overhead Conductor Program (OCP)	Contact with Energized Equipment	Overhead Conductor Program (OCP)	Conductor Miles	367	367	367	1,101	306	300	312	918	-61	-67	-55	-183	-17%	-18%	-15%	-17%	No
PCB Transformer Removal	N/A	N/A	# of PCB Contaminated Transformers Replaced	250	250	250	750	202	107	106	415	-48	-143	-144	-335	-19%	-57%	-58%	-45%	**Yes**
Prefabrication	N/A	N/A	This activity comprises multiple types of work activities, and therefore providing a single work unit is not feasible.																	No
Preventive Maintenance	N/A	N/A	These costs can vary from year to year, accordingly, the capital forecast for is based on a five-year average of recorded expenditures and is not unit based.																	No
PSPS Execution	Wildfire	PSPS Protocol and Support Functions	This activity comprises multiple types of work activities, and therefore providing a single work unit is not feasible.																	No
Streetlight Maintenance and LED Conversions	N/A	N/A	# of Streetlight Replacements and LED Conversions	76,300	76,300	76,300	228,900	63,996	32,921	37,173	134,090	-12,304	-43,379	-39,127	-94,810	-16%	-57%	-51%	-41%	**Yes**
Substation Emergency Equipment	N/A	N/A	This activity comprises multiple types of work activities, and therefore providing a single work unit is not feasible.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Unit Description / Rationale for No Work Units**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Imputed Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Unit Diff. to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Unit Diff. to Date (%)**	**Unit Variance Explanation Triggered?**
Substation Equipment Replacement Program	N/A	N/A	# of Substation Circuit Breakers Replaced	217	217	217	651	188	43	75	306	-29	-174	-142	-345	-13%	-80%	-65%	-53%	**Yes**
Substation Tools and Work Equipment	N/A	N/A	The variety of tool and work equipment in this category makes it infeasible to identify a single unit of measurement.																	No
Underground Structure Replacements	N/A	Non-RAMP	# of Underground Structure Replacements	25	25	25	75	33	24	39	96	8	-1	14	21	32%	-4%	56%	28%	**Yes**
Underground Structure Replacements	N/A	Total	# of Underground Structure Replacements, # of CPRR Installed	383	383	383	1,149	388	349	342	1,079	5	-34	-41	-70	1%	-9%	-11%	-6%	No
Underground Structure Replacements	Underground Equipment Failure	Cover Pressure Relief and Restraint (CPRR) Program	# of CPRR Installed	347	347	347	1041	355	325	295	975	8	-22	-52	-66	2%	-6%	-15%	-6%	No
Underground Switch Replacements	Underground Equipment Failure	UG Oil Switch Replacement Program	# of Underground Switch Replacements	24	24	24	72	39	26	56	121	15	2	32	49	63%	8%	133%	68%	**Yes**
Undergrounding	N/A	N/A	# of Circuit Miles	6	11	11	28	5.5	11	5	21.5	-0.5	0	6	4.5	-8%	0%	-55%	-23%	No
Wildfire Covered Conductor Program	Wildfire	Wildfire Covered Conductor Program	# of Conductor Miles Replaced with Covered Conductor	1,043	1,000	644	2,043	1,427	1,356	1,161	3,944	384	356	517	1,257	37%	36%	80%	47%	No
Worst Circuit Rehabilitation (WCR)	Underground Equipment Failure	Worst Circuit Rehabilitation (WCR)	# of Conductor Miles	15	15	15	45	58	7.7	17	82.7	43	-7.3	2	37.7	287%	-49%	13%	84%	No

3. Variance Explanations

Table VIII-14 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table VIII-14
Distribution Capital Expenditure Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
4 kV Cutovers	**Yes**	**Yes**	**Yes**	The variance in recorded costs and units for the 4 kV Cutover Program in 2023 can be attributed to several factors. First, the complexity of the work and challenges involved in transitioning a 4 kV circuit to higher voltages led to some degree of variance. For example, there were material shortages in procuring transformers, which caused project costs to roll over from the previous year. Second, supply chain disruptions caused by the COVID-19 pandemic, along with increased labor and material costs, continue to contribute to the overall expenses.
Automatic Reclosers Replacement Program	No	No	**Yes**	SCE's initial estimate of the number of oil-filled Automatic Reclosers (ARs) from the TY 2021 GRC was higher than the actual number in our system; this resulted in a lower number of overall units being replaced. However, thanks to the success of this program, SCE estimates that only a few oil-filled ARs are still in operation. As outlined in SCE's TY 2025 GRC filing, SCE plans to remove the remaining oil-filled ARs and to evolve the program to include Vacuum Fault Interrupters and other outdated or obsolete equipment designs that pose operational and maintenance challenges.
Automation	No	**Yes**	No	In 2023, capital expenditures for Automation were approximately $10 million below the authorized amount. Recorded expenditures for Reliability-driven Distribution Automation were about $1.2 million below authorized (less than five percent of authorized) due to lower per circuit costs associated with installing automation on overhead circuits. SCE completed installation of automation on 89 circuits, which was higher than the 75 forecasted in the 2021 GRC. However, the circuit composition was primarily overhead constructed circuits, which resulted in lower-than-forecasted per-circuit project costs. Recorded expenditures for DER-driven Distribution Automation were approximately $1 million lower than authorized due to delays in completing the Small-scale Deployment of overhead, padmount, and underground Remote Fault Indicator (RFI) solutions. However, SCE concluded the Small-scale Deployment of the overhead RFI devices in 2023 and these devices are now available for deployment. Recorded expenditures for Small-scale Deployments were approximately $5.6 million below authorized due to fewer device installations in 2023. SCE completed the small-scale deployments of the overhead RFIs in 2023, but experienced delays in

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
				completing deployment of the underground and Padmount RFIs. These deployments are expected to be concluded in 2024. Finally, recorded DER-driven Substation Automation expenditures were approximately $1.9 million lower than authorized due to a vendor delay in delivering the relay racks for one of the substation projects. This equipment was received in December 2023, which caused construction to be delayed until 2024.
Cable-in-Conduit (CIC) Replacement Program	No	No	**Yes**	In 2023, SCE had certain resource and material constraints which resulted in a reduction in conductor miles replaced and dollars spent compared to authorized. However, looking at the broader period from 2021-2023, SCE has replaced additional miles and subsequently overspent authorized. Specifically, SCE replaced 73 miles of Cable-in-Conduit (CIC), which is 36 percent above the 2021 – 2023 authorized amount of 54 miles. This overall increase in replacement efforts and recorded dollars aligns with SCE's commitment to returning to historical levels of distribution infrastructure replacement work and reducing the safety and reliability risks associated with aging and failing CIC.
Distribution Claim	No	**Yes**	No	Distribution Claims records costs based on factors outside of SCE's control. The events that drive the costs for claims are variable year over year as are the severity of the resulting claims from the event. As such, totals can vary each year.
Distribution Deteriorated Pole Replacement	**Yes**	No	Yes	The decrease in the number of Distribution Deteriorated Pole replacement units and dollars can be attributed to a lower pole failure rate experienced during the inspection phase, which resulted in fewer non-compliant poles that needed replacement.
Distribution Plant Betterment	**Yes**	**Yes**	**No**	SCE forecasted this work in our TY 2021 GRC using a historical average. In line with 2021 and 2022, SCE experienced a higher volume of work and spend due to greater than average distribution projects performed by the regions compared to the historical averages. For example, SCE executed regional grid team work that would not have been part of our 2023 forecast. Additionally, SCE spent money as part of a remote grid project and pilot projects that were also not part of our 2023 forecast. These projects primarily focused on addressing voltage problems and related to new protection devices and switches. These projects are necessary for SCE to provide safe and reliable power.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
Distribution Pole Loading Program Pole Replacement	No	No	**Yes**	The decrease in the number of Distribution Pole Loading Program (PLP) replacements was due to two primary factors. First, there were a lower volume of PLP assessments that needed to be completed compared to the GRC authorized forecast. Second, there was a lower pole failure rate experienced during the assessment phase, which resulted in fewer non-compliant poles that needed replacement. However, SCE experienced an increase to the unit cost of a pole replacement due to higher construction costs, higher environmental and permitting expenses, higher survey costs, and inflation-driven increases to material prices. So, although SCE executed less units than forecast, the increased unit cost led SCE to spend close yet still under its authorized amount.
Distribution Preventive and Breakdown Capital Maintenance	**Yes**	**Yes**	No	In 2023, SCE performed two significant activities that were not included in the 2021 GRC forecast for 2023: • Pole Related Maintenance Splice (PRMS): The PRMS activity includes splice work that is identified during pole replacement design. When the splice is beyond the one-span threshold to be considered pole replacement work, the activity is then considered preventive maintenance work. This work has been recorded to Capital Preventative Maintenance starting in mid-2020. • Live Front Equipment Replacement: In 2023, SCE performed analysis to identify pieces of live front equipment that were high risk to workers. SCE replaced 133 pad mount transformers and 42 pad mount switches in 2023. For activities included in the 2021 GRC forecast for 2023, several factors contributed to a higher recorded cost: • SCE experienced higher than anticipated escalation/inflation rates (starting in 2020 and continuing through today) than were projected in our TY 2021 GRC application. • Increased remediation scope due to an increasing volume of inspections and a higher find rate.
Distribution Storm Response Capital	**Yes**	**Yes**	No	Distribution Storm Response Capital relies on a five-year average due to the volatile nature of what records to this activity. There are factors outside of SCE's control that contribute to the recorded costs for this activity. The number of storms as well as the severity of each storm can lead to variances to the forecast. For these reasons the recorded costs can over or under run when compared to the forecast in any given year.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
Distribution Substation Plan Substations	**Yes**	**Yes**	No	SCE recorded lower than authorized in 2023. However, it should be noted that the majority of the variance between the authorized and the recorded amounts is related to the escalation methodology authorized in SCE's 2021 GRC compared to SCE's 2021 GRC request. In SCE's TY 2021 GRC, SCE's 2022 request was approximately $20 million. However, the escalation methodology authorized in SCE's 2021 GRC provided a flat escalation rate to the 2021 authorized capital expenditures, which is why $65.9 million is shown as authorized in 2022 for this GRC activity. SCE recorded approximately $42 million in 2023 which was actually above our request. The primary reason that SCE spent more in 2023 than it forecast in its 2021 GRC, was because SCE recorded expenditures in 2023 associated with the Garnet 115/33 kV substation upgrade due to the deferral of that project compared to the TY 2021 GRC forecast operating date. In addition to the Garnet substation, SCE has also experienced delays in several other projects including, Edwards 115/33 kV Substation and Lee Vining 115/55 kV Hydro Substation resulting in 2023 recorded dollars that were not originally forecasted in the TY 2021 GRC. SCE also recorded expenditures associated with new or emergent projects that were not part of our TY 2021 GRC forecast. It should be expected that SCE will experience new and emergent work towards the end of a GRC cycle as SCE's refreshes our annual distribution planning process. In 2023, SCE recorded expenditures for the following DSP projects that were not part of our TY 2021 GRC forecast at the time of filing: Santa Fe Springs 66/12, Baker 115/12, Archibald 66/12, Roadway 115/12 and Hathaway 66/16 (please note this is not a fully extensive list).
Distribution Transformers	**Yes**	**Yes**	No	There has been a significant increase in transformer unit costs, affecting all distribution transformer types, which resulted in SCE spending over authorized in 2023. Since 2021, approximate price increases have been as follows: • Overhead transformers: 2.2x price increase • Single Phase Padmount transformers: 2.5x price increase • Three Phase Padmount transformers: 2.5x price increase • Burd transformers: 2.1x price increase • Subway transformers: 4.3x price increase The increase is attributed to a combination of factors including supply chain issues and increased demand. The production and distribution of transformers have been impacted by global supply

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
				chain disruptions as the availability of raw material has been limited, while demand has increased due to steady infrastructure replacement requirements."
Distribution Volt VAR Control and Capacitor Automation Program	No	No	**Yes**	SCE underspent and executed in the DVVC program in 2023 due to supply chain shortages of the necessary Programmable Capacitor Controls (PCCs).
Enhanced Overhead Inspections and Remediations	**Yes**	**Yes**	No	For Enhanced Overhead Inspections and Remediations, three main drivers led to recorded O&M expenses that were higher than authorized: (1) increased costs and volume of distribution inspections and remediations (2) increased costs for transmission inspections and remediations and (3) introduction of technology capabilities to support data processing, storage, and compliance with Office of Energy Infrastructure Safety (OEIS) data guidelines. 1. Distribution Inspections and Remediations: In 2023, SCE performed approximately 16,306 O&M distribution remediations at a total cost of $39.765 million, significantly exceeding the remediation volume forecasted in the 2021 GRC of 5,223 O&M remediations. SCE's 2023 spending on distribution inspections in HFRA was reasonable because the scope was selected on a risk-informed basis that was part of SCE's approved 2023-2025 Wildfire Mitigation Plan (WMP). SCE's cost also exceeded amounts forecasted in the 2021 GRC due to an increase in the volume and cost of aerial inspections. At the time of the 2021 GRC forecast, SCE had limited experience in aerial inspections, and subsequent increases in labor rates services increased SCE's costs beyond the 2021 GRC forecast. 2. Transmission Inspections and Remediations: In 2023, SCE inspected 28,824 transmission structures through aerial inspections at a total cost of $16.781 million. SCE spending more on transmission aerial inspections than forecasted in its 2021 GRC was reasonable because the 2021 GRC forecast was developed without the benefit of significant experience in the operation of an aerial transmission inspection program. Aerial inspections are labor intensive, and require specialized and licensed expertise to operate drones, helicopters, and planes. In 2023, SCE performed 651 transmission O&M remediations at a total cost of $3.199 million. SCE's unit costs for transmission repairs were higher than forecast. This is primarily due to higher labor costs (both normal time and overtime rates), higher material costs, and higher allocations for B materials. Furthermore, the economic conditions when SCE made its

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
				forecast in 2019 were markedly different than the economic conditions in 2023, which have been influenced by the COVID-19 pandemic, supply chain issues, and significant inflation. 3. Technology Capabilities: SCE expanded its technology capabilities for HFRI Inspections and Remediations and recorded O&M expenses for the following efforts: $4.3 million for Technology Support Tools (for the development of InspectForce application to support ground and aerial inspections capabilities and for the Field Management Platform 360 application), $1.9 million for Technology Solutions (for continued implementation of Arbora vegetation management application) and $1.2 million for Data Platform Governance (for licensing and subscription fees to store and process wildfire related data for operational and regulatory reporting purposes).
HFRA Sectionalizing Devices	No	No	**Yes**	The spending on this activity was all incremental to GRC-authorized amounts, as no funding was authorized for 2023. In 2018, SCE could not have foreseen 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. 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, in late 2019 and after it developed its 2021 GRC forecast, SCE began to consider installing additional Remote Automated Reclosers (RARs) to further sectionalize its circuits within and/or near HFRA boundaries and help mitigate the 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. Further, if operational and fault history indicate that certain circuit segments have relatively low risk compared to neighboring segments,

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
				installing a recloser is a fast and relatively inexpensive way to add operational flexibility and reliability.[32]
Overhead Conductor Program (OCP)	No	No	**Yes**	The Overhead Conductor Program (OCP) fell short of its 2023 forecast. Several factors contributed to this outcome. First, material resource constraints, specifically transformer availability, hindered progress. Second, environmental challenges, such as Environmental Requirements Document (ERD) clearance issues in wetland areas, delayed execution of certain projects. Third, execution obstacles—such as unforeseen wall construction and Federal Aviation Administration (FAA) clearances requiring extra permitting—also impacted the program. Finally, customer-requested delays, such as a ski resort not allowing outages during their season, delayed execution for certain projects. As a result, the OCP did not achieve its conductor mile and recorded dollar targets for 2023. These projects are now slated to be carried over into 2024.
PCB Transformer Removal	No	No	**Yes**	The demand for power transformers, coupled with supply chain constraints, escalated the individual cost per unit. The limited supply of assets also decreased SCE's ability to execute projected scope in 2023. Furthermore, during 2023, a greater number of underground transformers were executed compared to overhead transformers. This shift contributed to higher recorded costs, as the expenditures associated with underground transformers are greater.
Preventive Maintenance	No	**Yes**	No	The demand for power transformers, coupled with supply chain constraints, escalated the individual cost per unit. The limited supply of assets also decreased SCE's ability to execute projected scope in 2023. Furthermore, during 2023, a greater number of underground transformers were executed compared to overhead transformers. This shift contributed to higher recorded costs, as the expenditures associated with underground transformers are greater.
Streetlight Maintenance and LED Conversions	No	No	**Yes**	The demand for power transformers, coupled with supply chain constraints, escalated the individual cost per unit. The limited supply of assets also decreased SCE's ability to execute projected scope in 2023. Furthermore, during 2023, a greater number of underground transformers were executed compared to overhead transformers. This shift contributed to higher recorded costs, as the expenditures associated with underground transformers are greater.

[32] 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.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
Substation Emergency Equipment	No	**Yes**	No	Due to the unknown frequency of needing Substation Emergency Equipment, SCE utilizes historical averages to forecast this GRC activity. The costs and magnitude of emergency breakdown can vary year over year. Additionally, the costs for this activity are largely dependent upon factors outside of SCE's control, including supply chain constraints; therefore, these costs can fluctuate year over year.
Substation Equipment Replacement Program	Yes	**Yes**	**Yes**	SCE recorded lower than authorized in 2023 in terms of actual spend and corresponding work units. However, it should be noted that this variance between the authorized and the recorded amounts can largely be attributed to the Post Test Year escalation methodology authorized in SCE's 2021 GRC, which was not based on SCE's Post Test Year forecasts. In SCE's TY 2021 GRC, SCE's 2023 forecast was approximately $2 million to replace 9 circuit breakers. However, the escalation methodology authorized in SCE's 2021 GRC provided a flat escalation rate to the 2021 authorized capital expenditures, which is why the authorized amount in 2023 for this activity is the $37.7 million shown in the table. SCE did experience some supply chain constraints associated with some of the higher voltage circuit breakers which also prevented SCE from executing to the imputed authorized levels.
Underground Structure Replacements	**Yes**	**Yes**	**Yes**	As directed in Track 1 of SCE's 2021 GRC D.21-08-036, the Underground Structures Replacement Program prioritized replacement of structures classified as Grade D and F.[33] Although the total overall executed units are less than the authorized amount, SCE completed more vault replacements which have significantly higher unit costs compared to shoring and CPRR projects. This resulted in an increase in overall costs compared to authorized.
Underground Switch Replacements	No	No	**Yes**	As additional resources became available, SCE has gradually increased its efforts in replacing underground switches as the Distribution Infrastructure Replacement (DIR) returns to normalized levels. Furthermore, in 2023 SCE replaced a greater number of switches that did not require civil work, allowing for more replacements at a lower unit cost. As a result, SCE exceeded the authorized units replaced in 2023 by 68 percent and recorded dollars by 30 percent.
Undergrounding	**Yes**	**Yes**	No	SCE's 2023 TUG-related capital expenditures were lower than the 2023 post-test year amount authorized in the 2021 GRC for several reasons. First, recorded unit costs were lower than the unit cost forecast in the 2021 GRC. When SCE prepared and finalized its 2021 GRC, it had very

[33] Grade D: Structures with this rating are classified as "poor." They have a remaining life expectancy of 5 to 15 years. Grade F: Structures with this rating are considered to be at risk of failing. Their expected remaining life is 1 to 5 years.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
				little experience undergrounding overhead lines as a wildfire mitigation. SCE, thus, based its forecast for TUG using unit cost averages from SCE's Rule 20A projects. However, although Rule 20A projects were the best available proxy for TUG costs at the time, SCE anticipated that actual unit costs for TUG could differ from Rule 20A costs because Rule 20A and TUG projects include different cost components and other potentially distinct factors. The 2021-2023 TUG scope of 30 miles was selected from the top 150 riskiest miles using a risk methodology in place prior to SCE's IWMS, and 2023 TUG miles, within this scope, also reflect where undergrounding could be most efficiently achieved. Underspend on this activity was also driven by SCE's completion of fewer miles than originally forecast in the 2021 GRC. Easement rights to the land needed for underground circuitry was a particular issue, as nearly three of the eleven miles forecast for completion were unable to be constructed in 2023, based on easement issues. While SCE understands that on average, TUG projects can vary in length of time needed to be completed, it was not possible for SCE to foresee specific issues for specific projects years prior to project inception.
Wildfire Covered Conductor Program	**Yes**	**Yes**	No	SCE spent above the 2021 GRC Track 1 authorized amounts for WCCP primarily due to the installation of more miles than authorized and a higher unit cost for those miles. Given the present risk and long lead times for constructing covered conductor, it would not have been prudent to simply stop covered conductor installation and wait for further Commission authorization. That would have resulted in leaving significant wildfire risk unmitigated for longer than necessary. Further, due to long lead times and operational issues, such as permitting, weather, and crew availability, SCE scopes more miles than it actually constructs each year. As such, it would not be reasonable to expect SCE to stop on a dime, with so many other miles in flight. SCE's latest risk methodology and mitigation strategy support the installation of these miles. Indeed, they support installing more miles of covered conductor, which the Commission recognized with the adoption of the 2021 GRC Track 4 Settlement Agreement that authorized the installation of an additional 1,050 miles of covered conductor in 2024. On the topic of unit costs, estimates were developed at a point when SCE had very little experience installing covered conductor. SCE's estimates were appropriately informed by completed covered conductor work from its Overhead Conductor Program (OCP), which included approximately 25 miles. This data point was appropriate at the time as the best proxy available to SCE to inform unit cost forecasts for its nascent WCCP but did not account fully

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	$	% / $	Units	Variance Explanation
				account for all the differences and complexities associated with a much more expansive WCCP across a much larger portion of SCE's service area. SCE also began installing covered conductor in more rural areas, which typically resulted in higher labor costs due to the rural region and more difficult terrain. SCE also found that ancillary equipment, such as vibration dampers, are sometimes needed as part of the covered conductor installation. All these factors had the impact of increasing SCE's actual unit costs. The Commission recognized this uncertainty in forecasting costs for covered conductor when it authorized the WRMBA.[34] Also, SCE faced significant rising costs due to unforeseen circumstances. First in 2019 and later in 2022, SCE had to undertake negotiations for new contractor rates, which resulted in higher labor costs than those used in the unit cost forecast.

[34] D.21-08-036 at p. 249 ("Given the significant scope of the WCCP approved in this decision, the potential for SCE's covered conductor unit costs to be higher or lower than forecast…we agree that balancing account treatment is appropriate in this instance").

4. Activity Status

Table VIII-15 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table VIII-15
Distribution Expenditure Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
4 kV Cutovers	On-Going	Annual	Over	On-Target	Over	Proceeding as Planned	SCE is generally proceeding as planned, albeit with increased external cost pressures as noted in variance explanation Additionally, we have completed additional units beyond our 2021 - 2023 forecast to meet emergent needs.
4 kV Cutovers - Load Growth Driven	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
4 kV Substation Eliminations	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Automatic Reclosers Replacement Program	On-Going	Annual	Under	On-Target	Under	Proceeding as Planned	As noted in our variance explanation, SCE's initial estimate of the number of oil-filled Automatic Reclosers (ARs) from the TY 2021 GRC was higher than the actual number in our system; this resulted in a lower number of overall units being replaced.
Automation	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, recorded capital expenditures for each Automation workstream were lower than the Commission-authorized amounts for multiple reasons. Please refer to our variance explanation for additional details on the drivers for the underspend
Cable Life Extension (CLE) Program	N/A	N/A	N/A	N/A	N/A	N/A	SCE did not request funding for the CLE program in our TY 2021 GRC for 2021 – 2023. This program will resume in 2025 as noted in our TY 2025 GRC Application.
Cable-in-Conduit (CIC) Replacement Program	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Capacitor Bank Replacement Program	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
DER-Driven Grid Reinforcement	Completed	Completed	Completed	Completed	Completed	Completed	SCE completed this pilot in 2023, however there may be some carryover costs that record in 2024.
Distribution Circuit Upgrades	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Claim	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned. This activity is driven by factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast is based on historical averages and annual values may vary from authorized.
Distribution Deteriorated Pole Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned from 2021 - 2023. Please refer to variance explanation for 2023 expenditures.
Distribution Fault Anticipation	On-Going	Annual	Over	Over	Over	Emergent	SCE does not currently have any additional scope for this program planned. The 2021 GRC Decision did not authorize any costs for DFA, however when the 2021 GRC Track 1 Final Decision was issued in August 2021, SCE had already scoped 25 units for completion in 2022. Given the costs already spent on those units, it was prudent for SCE to complete those installations. Further, as the 2021 GRC Track 1 Final Decision contemplated a final pilot study, it was reasonable for SCE to conduct a study analyzing the results of the pilot. It was also reasonable for SCE to incur these costs to preserve the function of existing DFA installations and determine the future direction of SCE's use of the technology.
Distribution Plant Betterment	On-Going	Annual	Over	Over	Over	Emergent	As noted in our variance explanation, SCE has emergent work associated with this GRC activity that was not part of our TY 2021 GRC request.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Distribution Pole Loading Program Pole Replacement	Eleven Years (2014 - 2025)	Ten of Eleven	On-Target	On-Target	Over	Proceeding as Planned	SCE is on schedule to complete this program by 2025, however costs are exceeding forecast. Refer to Variance explanation for more details.
Distribution Preventive and Breakdown Capital Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Expanded / Emergent	As noted in our variance explanation, SCE has emergent work associated with this GRC activity that was not part of our TY 2021 GRC request.
Distribution Storm Response Capital	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Substation Plan (DSP) Circuits	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Substation Plan Substations	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, SCE is experiencing delays in several projects.
Distribution Tools and Work Equipment	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Transformers	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	SCE is generally proceeding as planned. As noted in our variance explanation, there has been a significant increase in transformer unit costs, affecting all distribution transformer types, which resulted in SCE spending over authorized in 2023
Distribution Volt VAR Control and Capacitor Automation Program	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation SCE is behind in our installation in the DVVC program.
Distribution Wood Pole Disposal	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Engineering and Planning Software Tools	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Enhanced Overhead Inspections and Remediations	On-Going	Annual	Over	On-Target	Over	Expanded / Emergent	While SCE is generally proceeding as planned and executing the work in this activity, there is emergent work that is contributing to the overspend. Please refer to the variance explanation for details on the emergent scope and costs.
Fusing Mitigation	Complete	Complete	N/A	N/A	N/A	Completed	SCE does not currently have any additional scope for this program planned.
HFRA Sectionalizing Devices	On-Going	Annual	Over	On-Target	Over	Expanded / Emergent	SCE did not have a Capital forecast for 2023 in our TY 2021 GRC application. In 2018, SCE could not have foreseen 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. 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, in late 2019 and after it developed its 2021 GRC forecast, 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.
Meter System Maintenance Design	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
New Capacitors	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Overhead Conductor Program (OCP)	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
PCB Transformer Removal	On-Going	Annual	Under	Under	Over	Partially Delayed	The demand for power transformers, coupled with supply chain constraints, increased the individual cost per unit. The limited supply of assets also decreased SCE's ability to execute our projected scope in 2021 – 2023.
Prefabrication	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Preventive Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
PSPS Execution	On-Going	Annual	Over	On-Target	Over	Emergent / Expanded	This work includes PSPS website improvements and line patrols that were not part of the TY 2021 GRC request.
Streetlight Maintenance and LED Conversions	On-Going	Annual	Under	Under	Under	Proceeding as Planned	While SCE is generally proceeding as planned, we are seeing some delays. However, the underrun for this activity can be attributed to multiple factors as mentioned in our variance explanation, some of which are out of SCE's control.
Substation Emergency Equipment	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Substation Equipment Replacement Program	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	As noted in our variance explanation, the perceived underspend and execution is a result of the Post Test Year Escalation methodology. SCE is proceeding as generally planned with our Test Year 2021 GRC forecast.
Substation Tools and Work Equipment	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Underground Structure Replacements	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned. For additional details on this please refer to our variance explanation.
Underground Switch Replacements	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned. For additional details on this please refer to our variance explanation.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Undergrounding	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, the recorded unit costs were lower than the unit cost forecast in the 2021 GRC and SCE completed fewer miles than originally forecast in the 2021 GRC due to easement rights issues. Additional details are provided in our variance explanation.
Wildfire Covered Conductor Program	On-Going	Annual	Over	Over	Over	Proceeding as Planned	SCE is proceeding as generally planned. While SCE is executing more miles than the imputed authorized miles, SCE believes this is critical to continue to buy down wildfire potential on scoped circuits within SCE's high fire risk areas. Please see variance explanations for additional details.
Worst Circuit Rehabilitation (WCR)	On-Going	Annual	Over	Over	Over	Expanded	From 2021 – 2023 SCE is generally proceeding as planned, however. the overall increase in replacement efforts and recorded dollars aligns with SCE's commitment to returning to historical levels of distribution infrastructure replacement work and reducing the safety and reliability risks associated with aging and failing equipment.

IX.

TRANSMISSION CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

For the Transmission expense activities that are SAR-eligible, Table IX-16 below provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table IX-16
Transmission Expense Category Activity Description and Background Information

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Equipment Washing	Includes the cost of labor, materials used, and expenses incurred in performing the equipment washing activity at distribution and transmission substations.	SCE-02 Vol: 3	WPSCE02V3 pp. 86 - 92	N/A	N/A
Insulator Washing	Includes the costs of labor for proactive maintenance on transmission line insulators by washing. Insulator washing is performed by spraying high-pressure water onto insulators to remove contaminants such as salt, dirt, or automobile exhaust. Excessive contamination on an insulator reduces its ability to insulate the energized line from the grounded support structure. Excess contamination and debris can cause an energized circuit to short circuit. Includes related costs such as: transportation expenses, meals, traveling, lodging, and incidental expenses.	SCE-02 Vol: 2	WPSCE02V02A pp. 32 - 38	N/A	N/A
Monitoring Bulk Power System	Transmission and Distribution Grid Operations activities including Management and Operation of the Grid Control Center. Includes the cost of labor and other expenses incurred by SCE's centralized control centers for real time electric operations encompassing transmission and distribution systems. Activities include: execution of California Independent System Operator (CAISO) instructions regarding the operations of the SCE electrical system under CAISO operational control; develop and maintain switching procedures under CAISO purview; coordinate planned outages consistent with	SCE-02 Vol: 3	WPSCE02V3 pp.3 - 8	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	CAISO approval; and maintaining situation awareness. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense. Also includes Informational Technology as Grid Network Solutions is responsible for the overall health and performance of SCE's communications network and Supervisory Control and Data Acquisition (SCADA) systems used to monitor and control the company's electric grid and conduct daily business operations.				
Roads and Rights of Way	Includes the costs of labor, materials and expenses incurred in performing brushing and clearing activities to maintain transmission roads and right-of-way. Includes related costs such as: transportation expenses, meals, traveling, lodging, and incidental expenses.	SCE-02 Vol: 2	WPSCE02V02A pp. 39 - 45	N/A	N/A
Telecommunication Inspection and Maintenance	Includes the costs of labor, materials and expenses incurred in performing the following activities: telecommunication line patrols, proactive maintenance, breakdown maintenance, storm response, claims resolution and relocation activities. Includes related costs such as transportation expenses, meals, traveling, lodging, and incidental expenses.	SCE-02 Vol: 2	WPSCE02V02A pp. 46 - 54	N/A	N/A
Transformer Inspections and Maintenance	Includes the cost of labor, materials used, and expenses incurred in performing the inspection and maintenance of transformers at distribution and transmission substations.	SCE-02 Vol: 3	WPSCE02V3 pp. 58 - 64	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Transmission Intrusive Pole Inspections	The costs incurred for intrusive pole inspections of transmission poles. Intrusive inspections require inspectors with proper training and experience to drill into the pole's exterior to identify and measure the extent of internal decay which is typically undetectable with external observation alone. Inspectors also does a visual inspection of the exterior of the pole to check for damage.	SCE-02 Vol: 5	WPSCE02V5, pp. 25-32	N/A	N/A
Transmission Line Patrols	Includes the cost of labor and expenses incurred in the inspection of transmission lines. Includes labor for activities such as routine line patrolling and overhead detailed inspections. Includes related costs such as transportation expenses, meals, traveling, lodging, incidental expenses, division overhead and supply and tool expense.	SCE-02 Vol: 2	WPSCE02V02A pp. 3 - 9	N/A	N/A
Transmission Line Rating Remediation (TLRR)	Includes the cost of labor, materials used and expenses incurred to remediate line clearance discrepancies. Includes related costs such as transportation expenses, meals, traveling, lodging, and incidental expenses.	SCE-02 Vol: 2	WPSCE02V02A pp. 71 - 79	N/A	N/A
Transmission O&M Maintenance	Includes the cost of labor, materials used and expenses incurred in the maintenance of transmission lines, such as preventive, reactive and breakdown maintenance. Includes related costs such as transportation expenses, meals, traveling, lodging, incidental expenses, division overhead and supply and tool expense.	SCE-02 Vol: 2	WPSCE02V02A pp. 21 - 31	N/A	N/A
Transmission Pole Loading Assessments	The cost incurred in performing pole loading assessments on transmission poles, including pole loading calculations. Through assessments, poles that do not meet GO 95 loading, temperature and safety factor requirements or, in areas with known	SCE-02 Vol: 5	WPSCE02V5, pp. 10-15	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	local conditions such as high winds and SCE's loading, will be identified for repair or replacement.				
Transmission Pole Loading Repairs	The cost incurred to make repairs to transmission poles as part of the Pole Loading Program. Repairs involve the design and installation or modification of guy wires.	SCE-02 Vol: 5	WPSCE02V5, pp. 226-231	N/A	N/A
Transmission Request for Attachment Inspections	Costs for Pre-Inspections and Final Inspections of transmission renter attachments to poles.	SCE-02 Vol: 5	WPSCE02V5, pp. 272-277	N/A	N/A
Transmission Routine Vegetation Management	Expenses incurred for activities include pre-inspections, trimming and removal of trees, expanded clearance distances, back-end quality assurance/checks; pole-brushing work, supplemental patrols, and substation-associated vegetation management work around transmission assets	SCE-02 Vol: 6	WPSCE02V06A pp. 130 - 160	N/A	N/A
Transmission Underground Structure Inspection	SCE's underground lines and vaults require routine inspections to detect and remedy any degradation that may lead to safety hazards or system reliability issues. Inspections of the underground components, which include vaults, cable, splices, and shield arrestors, are performed at least once every three years in compliance with CPUC GO 165. Also included in this activity are SCE's Underground Service Alert (USA) location requests.	SCE-02 Vol: 2	WPSCE02V02A pp. 12 - 20	N/A	N/A

2. GRC Activities Dollar and Unit Variance Calculations

Table IX-17 and Table IX-18 below provide the authorized and recorded costs, and variance and percentage change values for each Transmission expense activity in terms of dollars and units. These tables also indicate whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table IX-17
Transmission Expense Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll-up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
Equipment Washing	N/A	N/A	Yes	On-Going	Annual	$1,381	$1,424	$1,538	$4,343	$1,268	$1,600	$1,074	$3,943	($113)	$177	($464)	($400)	-8%	12%	-30%	-9%	No
Insulator Washing	N/A	N/A	Yes	On-Going	Annual	$820	$844	$906	$2,571	$694	$467	$278	$1,439	($126)	($378)	($628)	($1,132)	-15%	-45%	-69%	-44%	No
Monitoring Bulk Power System	N/A	N/A	Yes	On-Going	Annual	$56,667	$58,164	$61,883	$176,714	$45,294	$49,073	$54,006	$148,372	($11,373)	($9,091)	($7,878)	($28,341)	-20%	-16%	-13%	-16%	No
Roads and Rights of Way	N/A	N/A	Yes	On-Going	Annual	$4,813	$4,948	$5,407	$15,168	$6,559	$6,252	$2,640	$15,451	$1,746	$1,304	($2,766)	$283	36%	26%	-51%	2%	No
Telecommunication Inspection and Maintenance	N/A	N/A	Yes	On-Going	Annual	$2,591	$2,654	$2,823	$8,068	$4,341	$4,496	$5,772	$14,609	$1,750	$1,842	$2,949	$6,541	68%	69%	104%	81%	No
Transformer Inspections and Maintenance	N/A	N/A	Yes	On-Going	Annual	$1,352	$1,394	$1,508	$4,254	$1,275	$4,369	$1,659	$7,303	($77)	$2,975	$151	$3,049	-6%	213%	10%	72%	No
Transmission Intrusive Pole Inspections	N/A	N/A	Yes	On-Going	Annual	$608	$625	$686	$1,919	$403	$484	$253	$1,139	($205)	($141)	($434)	($780)	-34%	-23%	-63%	-41%	No
Transmission Line Patrols	N/A	N/A	Yes	On-Going	Annual	$7,512	$7,736	$8,313	$23,561	$4,562	$5,234	$6,993	$16,789	($2,950)	($2,502)	($1,320)	($6,772)	-39%	-32%	-16%	-29%	No
Transmission Line Rating Remediation (TLRR)	N/A	N/A	Yes	On-Going	Annual	$1,861	$1,914	$2,084	$5,859	$129	$1,055	$3,196	$4,380	($1,732)	($859)	$1,111	($1,480)	-93%	-45%	53%	-25%	No
Transmission O&M Maintenance	N/A	N/A	Yes	On-Going	Annual	$21,461	$22,094	$23,817	$67,372	$9,051	$12,427	$16,214	$37,692	($12,410)	($9,667)	($7,603)	($29,680)	-58%	-44%	-32%	-44%	**Yes**
Transmission Pole Loading Assessments	N/A	N/A	Yes	Seven Years (2014 - 2021)	Completed in 2022	$109	$112	$123	$345	$1,264	$89	($0)	$1,352	$1,155	($24)	($123)	$1,008	1060%	-21%	-100%	292%	No
Transmission Pole Loading Repairs	N/A	N/A	Yes	Eight Years (2014 - 2022)	Completed in 2023	$379	$390	$423	$1,192	$806	$315	$169	$1,290	$427	($75)	($253)	$98	113%	-19%	-60%	8%	No
Transmission Request for Attachment Inspections	N/A	N/A	Yes	On-Going	Annual	$351	$361	$393	$1,104	$323	$517	$146	$986	($28)	$156	($246)	($118)	-8%	43%	-63%	-11%	No
Transmission Routine Vegetation Management	N/A	N/A	Yes	On-Going	Annual	$12,963	$13,319	$14,647	$40,929	$42,574	$32,449	$30,302	$105,324	$29,611	$19,130	$15,654	$64,396	228%	144%	107%	157%	**Yes**
Transmission Underground Structure Inspection	N/A	N/A	Yes	On-Going	Annual	$2,101	$2,164	$2,319	$6,584	$2,472	$2,986	$3,417	$8,875	$371	$821	$1,098	$2,291	18%	38%	47%	35%	No

Table IX-18
Transmission Expense Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Yr. 1 - 2021	Yr.2 - 2022	Yr. 3 - 2023	Imputed Units to Date	Yr. 1 - 2021	Yr.2 - 2022	Yr. 3 - 2023	Actual Units to Date	Yr. 1 - 2021	Yr.2 - 2022	Yr. 3 - 2023	Unit Diff. to Date	Yr. 1 - 2021	Yr.2 - 2022	Yr. 3 - 2023	% Unit Diff. to Date	Unit Var. Explanation Triggered?
Equipment Washing	N/A	N/A	Equipment washing differs from site to site. Based on the unpredictable nature of the level of work activity, a five-year avg was applied to generate the forecast and is not unit based.																	No
Insulator Washing	N/A	N/A	Factors that impact the need to wash insulators are beyond SCE's control. SCE's 2021 test year forecast methodology selected as the three-year historical avg from 2016-2018 and is not unit based.																	No
Monitoring Bulk Power System	N/A	N/A	SCE used LYR recorded as the forecast basis as this amount provide the necessary funding to perform this activity going forward.																	No
Roads and Rights of Way	N/A	N/A	SCE used last recorded year to forecast and there is no associated work units.																	No
Telecommunication Inspection and Maintenance	N/A	N/A	SCE uses LYR plus adj in anticipation of incremental work required in the Test Year to support new telecommunications inspection and maintenance practices.																	No
Transformer Inspections and Maintenance	N/A	N/A	Since the cost for transformer maintenance can vary based on field inspections and the type of repair required, SCE forecasted 2021 expenses by using a four-year average of 2015-2018 recorded expenses and is not unit based.																	No
Transmission Intrusive Pole Inspections	N/A	N/A	# of Transmission Intrusive Pole Inspections	14,360	14,360	14,360	43,080	10,150	11,304	5,772	27,226	-4,210	-3,056	-8,588	-15,854	-29%	-21%	-60%	-37%	**Yes**
Transmission Line Patrols	N/A	N/A	SCE uses LYR + Adjustments and is not unit based.																	No
Transmission Line Rating Remediation (TLRR)	N/A	N/A	The forecast for TLRR O&M is based on the capital work executed is not unit based.																	No
Transmission O&M Maintenance	N/A	N/A	The use of the four-year average is appropriate as a forecast basis because costs can fluctuate due to the level of required maintenance from year-to-year and is not unit based.																	No
Transmission Pole Loading Assessments	N/A	N/A	# of Transmission Pole Loading Assessments	1,600	0	0	1,600	2,105	45	0	2,150	505	45	0	550	32%	N/A	N/A	34%	No
Transmission Pole Loading Repairs	N/A	N/A	# of Transmission Pole Loading Repairs	224	23	23	270	132	23	10	165	-92	0	-13	-105	-41%	0%	-57%	-39%	**Yes**
Transmission Request for Attachment Inspections	N/A	N/A	The forecast is based on LYR to perform the inspection and the labor to support the activity.																	No
Transmission Routine Vegetation Management	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Transmission Underground Structure Inspection	N/A	N/A	SCE used last recorded year to forecast and there is no associated work units.																	No

3. Variance Explanations

Table IX-19 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table IX-19
Transmission Expense Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Unit**	**Variance Explanation**
Transmission Intrusive Pole Inspections	No	No	**Yes**	In 2023 SCE underspent and under executed distribution intrusive pole inspections. This variance was driven by the need to address emergent and higher priority work. SCE did not defer any compliance based inspections per G.O. 165 and G.O. 95.
Transmission O&M Maintenance	No	**Yes**	No	SCE's 2023 recorded is less than authorized for Transmission O&M Maintenance due to the non-HFRA Aerial Inspection program sub-activity still being included within this GRC Activity when SCE Filed its 2021 GRC Track 1 application in August 2019. However, since filing the TY 2021 GRC application, SCE did not move forward with its proposed non-HFRA Aerial Inspections Program, for which it was authorized, as resources were focused on further building out and expanding the HFRA (wildfire) aerial programs.
Transmission Pole Loading Repairs	No	No	**Yes**	SCE's Pole Loading Program (PLP) assesses poles to identify potential PLP repairs. As noted in previous RSARs, SCE is seeing a decrease in the number of Transmission PLP repairs due to two primary factors. First, there was a lower volume of PLP assessments that needed to be completed compared to the GRC authorized forecast. Second, as noted in our 2021 RSAR, SCE has made improvements in the assessments phase to more accurately identify the need for repairs which resulted in fewer identified repairs "falling out" during the planning phase. This resulted in a lower pole failure rate experienced during the assessment phase, which resulted in fewer non-compliant poles that needed repair.
Transmission Routine Vegetation Management	**Yes**	**Yes**	No	GRC Activity Transmission Routine Vegetation Management includes work categories across the entire life cycle of vegetation management operations, including inspections, mitigations, and quality control, to support vegetation management for transmission assets. Eighteen sub-activities roll up into GRC Activity Transmission Routine Vegetation Management, grouped into six programs. In 2023, SCE identified the following factors that contributed to SCE's spend over authorized for GRC Activity Transmission Routine Vegetation Management work, which includes, but not limited to: • Traditional Ground Inspections (Pre-Inspection): wage inflation impacted contractor costs; higher work volume than forecast. • Remote Sensing (LiDAR – T): new work activity relative to the 2021 GRC forecast. • Routine Line Clearing (Routine Trims, Routine Removals, Customer Program Support, Traffic Control, and Other): continued impact of SB 247, market pressures, and wage inflation impacted contractor costs. • Structure Brushing (Structure Brushing): wage inflation on contractor costs. • Quality Control (Transmission Quality Assurance/Check): larger work volume than forecast and wage inflation impacted contractor costs. • Other Vegetation Management (Seasonal Patrols, Weed Abatement and Fuel Management – T): larger overall work volume and continued impact of SB 247, market pressures, and wage inflation impacted contractor costs. Certain programs did not yet exist or were in their early stages when the 2021 GRC forecast was developed in 2019.

4. Activity Status

Table IX-20 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table IX-20
Transmission Expense Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Equipment Washing	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Insulator Washing	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Monitoring Bulk Power System	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Roads and Rights of Way	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Telecommunication Inspection and Maintenance	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	SCE is generally proceeding as planned but is experiencing higher costs than authorized.
Transformer Inspections and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Transmission Intrusive Pole Inspections	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	While SCE is generally proceeding as planned, as noted in our variance explanation SCE did have to defer some work in 2023.
Transmission Line Patrols	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Transmission Line Rating Remediation (TLRR)	On-Going	Annual	Under	Under	Under	Partially Delayed	Please refer to the capital activity status for the TLRR program.
Transmission O&M Maintenance	On-Going	Annual	Under	On-Target	Under	Proceeding as Planned	SCE is generally proceeding as planned, with the exception as noted in our variance explanation that SCE did not move forward with the non-HFRA aerial inspection program.
Transmission Pole Loading Assessments	Seven Years (2014 - 2021)	Completed in 2022	On-Target	On-Target	On-Target	Completed	SCE completed this program in 2022.
Transmission Pole Loading Repairs	Eight Years	Completed in 2023	On-Target	Over	On-Target	Completed	SCE completed this program in 2023.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
	(2014 - 2022)						
Transmission Request for Attachment Inspections	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Transmission Routine Vegetation Management	On-Going	Annual	Over	On-Target	Over	Expanded / Emergent	SCE is generally proceeding as planned; however, costs and scope are above the TY 2021 GRC forecast. Refer to variance explanation for the rationale for increased costs..
Transmission Underground Structure Inspection	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

For the Transmission capital activities that are SAR-eligible, Table IX-21 below provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table IX-21
Transmission Capital Expenditure Category Activity Description

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Circuit Breaker Replacement	The Distribution Circuit Breaker Replacement Program replaces breakers approaching the end of their service lives. These circuit breakers are becoming increasingly unreliable, contain parts known to be problematic or unavailable and may require custom parts to be made for obsolete equipment.	SCE-02 Vol: 3	WPSCE02V3 – pp.120-146	N/A	N/A
Grid Reliability Projects	Grid Reliability Projects are planned on the portion of SCE's system under CAISO's operational control. They are developed as part of CAISO's Transmission Planning Process (TPP) and are required to support reliability and compliance with NERC, WECC, and CAISO system performance standards and criteria.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4P1ChIIIBkC, pp 234-269	N/A	N/A
Monitoring Bulk Power System	Transmission and Distribution Grid Operations activities including Management and Operation of the Grid Control Center. Includes the cost of labor and other expenses incurred by SCE's centralized control centers for real time electric operations encompassing transmission and distribution systems. Activities include execution of California Independent System Operator (CAISO) instructions regarding the operations of the SCE electrical system under CAISO operational control; develop and maintain switching procedures under CAISO purview; coordinate planned outages consistent with CAISO approval; and maintaining situation awareness. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense. Also includes Informational Technology as Grid Network Solutions is responsible for the overall health and performance of SCE's communications	SCE-02 Vol: 3	WPSCE02V3 – pp.16 - 50	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	network and Supervisory Control and Data Acquisition (SCADA) systems used to monitor and control the company's electric grid and conduct daily business operations.				
NERC Compliance Programs	NERC Compliance Programs are the costs incurred to bring facilities into compliance with physical security standards of NERC-CIP-14.	SCE-04 Vol: 4	WPSCE04V4 pp. 41 - 47	N/A	N/A
Protection of Grid Infrastructure Assets	This program is an ongoing effort to improve the physical protection of SCE employees and assets at electric facilities to deter and protect against theft, security breaches, and other security incidents.	SCE-04 Vol: 4	WPSCE04V4 pp. 79	Physical Security	Grid Infrastructure Protection - Enhanced
Protection of Major Business Functions	This program is an ongoing effort to improve the physical protection of SCE assets and employees at non-electric facilities, such as offices and warehouses and mitigate the impact on operations resulting from theft, security breaches, and other security incidents.	SCE-04 Vol: 4	WPSCE04V4 pp. 78	Physical Security	Non-Electric Facilities/Protection of Major Business Functions
Relays, Protection and Control Replacements	The Substation Relays, Protection, and Control Replacement Program identifies and proactively replaces substation protective relays, control, automation, monitoring and event recording equipment to address equipment obsolescence, meet compliance requirements, and improve functionality.	SCE-02 Vol: 3	WPSCE02Vol. 03, pp. 190-213	N/A	N/A
Substation Capital Breakdown Maintenance	This maintenance activity captures the labor, equipment, and other material costs to remove and replace failed substation equipment.	SCE-02 Vol: 3	WPSCE02Vol. 03, pp. 116-117	N/A	N/A
Substation Claim	Substation Claim supports repair damage to the substation caused by another party. SCE seeks to recover the costs to repair the damage through making a claim against the party responsible for the damage.	SCE-02 Vol: 3	WPSCE02Vol. 03, pp. 118-119	N/A	N/A
Substation Transformer Bank Replacement	This activity planned includes the preemptive replacement of transformers approaching the end of their service lives.	SCE-02 Vol: 3	WPSCE02V3 – pg. 150-153	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Telecommunication Deteriorated Pole Replacement	This activity includes the replacement of telecommunication poles under the Deteriorate Pole Program, in compliance with GO 95.	SCE-02 Vol: 5	WPSCE02V5, pp. 153	N/A	N/A
Telecommunication Inspection and Maintenance	Includes the costs of labor, materials and expenses incurred in performing the following activities: telecommunication line patrols, proactive maintenance, breakdown maintenance, storm response, claims resolution and relocation activities. The following costs are also included transportation expenses, meals, traveling, lodging, and incidental expenses.	SCE-02 Vol: 2	WPSCE02V2 pp. 67-68	N/A	N/A
Telecommunication Pole Loading Program Replacement	This activity includes the replacement of telecommunication poles under the Pole Loading Program.	SCE-02 Vol: 5	WPSCE02V5, pp. 155	N/A	N/A
Transmission Capital Maintenance	Transmission Capital Maintenance includes the costs to remove, replace, and retire assets on a planned or reactive basis. Planned transmission capital maintenance is driven by regular equipment maintenance cycles; maintenance work identified and prioritized through overhead and underground inspection programs; and maintenance identified through observations by field personnel and other activities.	SCE-02 Vol: 2	WPSCE02V2 pp. 55-66	N/A	N/A
Transmission Claim	Transmission Claim captures the expenditures associated with casualty damage to Transmission facilities, such as cars hitting and damaging poles. Claim damage events are random and are beyond SCE's control. Claims work is performed to repair or replace damaged facilities, restore service, and return the system to normal operating conditions. The costs recorded to this activity are almost entirely in response to pole and tower damage, or wire down events caused by third parties.	SCE-02 Vol: 2	WPSCE02V2 pp. 69-70	N/A	N/A
Transmission Deteriorated Pole Replacement	The costs incurred for intrusive pole inspections of transmission poles. Intrusive inspections require inspectors with proper training and experience to drill into the pole's exterior to identify and measure the extent of internal decay which is typically	SCE-02 Vol: 5	WPSCE02V5, pp. 152; 211	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	undetectable with external observation alone. Additionally, the inspector does a visual inspection of the exterior of the pole to check for damage.				
Transmission Emergency Equipment	In this program, SCE identifies, purchases, and maintains emergency spare parts for the transmission grid. Some of this equipment has long procurement lead times, so SCE maintains an inventory on hand in order to avoid delays in responding to emergencies and outages. Examples of equipment maintained in inventory include poles, steel bundles for towers, underground cable, and overhead conductor.	SCE-02 Vol: 2	WPSCE02V2 pp. 114-115	N/A	N/A
Transmission Line Rating Remediation (TLRR)	Includes the cost of labor, materials used and expenses incurred to remediate line clearance discrepancies. Includes related costs such as transportation expenses, meals, traveling, lodging, and incidental expenses.	SCE-02 Vol: 2	WPSCE02V2 pp.104-106	N/A	N/A
Transmission Pole Loading Program Replacement	Costs incurred for the assessment of Transmission poles for compliance with safety factors.	SCE-02 Vol: 5	WPSCE02V5, pp. 154	N/A	N/A
Transmission Substation Plan (TSP)	The Transmission Substation Plan (TSP) consists of the Subtransmission Lines Plan, the A-Bank Plan and the Sub transmission VAR Plan. The Sub transmission Lines Plan provides adequate 66 kV or 115 kV line capacity in each of SCE's sub transmission networks to serve forecast peak loads at SCE's B-Substations. The A-bank Plan focuses on SCE's transmission substation capacity to ensure safe and reliable service to customers. The Sub transmission VAR Plan focuses on SCE's system reactive power need to ensure safe and reliable service to customers.	SCE-02 Vol: 4 Pt. 2	WPSCE02V4PT2ChIIBkbkB pp. 27-227	N/A	N/A
Transmission Tools and Work Equipment	Transmission Tools and Work Equipment includes costs for acquiring and retiring portable tools and work equipment that cost a minimum of $1,000. SCE purchases new tools and equipment as older tools become obsolete or there are advancements in tool technologies.	SCE-02 Vol: 2	WPSCE02V2 pp.116-117	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Transmission / Substation Storm Response Capital	Repair and replacement performed as part of a storm response on Transmission and Substation facilities.	SCE-04 Vol: 2	WPSCE04V2 pp. 46 - 48	N/A	N/A

2. GRC Activities Variance Calculations

Table IX-22 and Table IX-23 below provides the authorized, recorded, variance and percentage change values for each Transmission expenditure category activity in terms of dollars and units. The tables also indicate whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table IX-22
Transmission Capital Expenditure Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll -up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff. to Date**	**$ Variance Explanation Required**
Circuit Breaker Replacement	N/A	N/A	Yes	On-Going	Annual	$43,372	$43,372	$43,372	$130,116	$49,218	$57,283	$55,348	$161,849	$5,846	$13,911	$11,976	$31,733	13%	32%	28%	24%	**Yes**
Grid Reliability Projects	N/A	N/A	Yes	On-Going	Annual	$262,619	$262,619	$264,607	$789,845	$203,429	$113,024	$60,013	$376,466	($59,190)	($149,595)	($204,594)	($413,380)	-23%	-57%	-77%	-52%	No
Monitoring Bulk Power System	N/A	N/A	Yes	On-Going	Annual	$74,364	$74,364	$74,364	$223,091	$84,345	$77,939	$91,140	$253,424	$9,981	$3,575	$16,776	$30,332	13%	5%	23%	14%	No
NERC Compliance Programs	N/A	N/A	Yes	Complete	Complete	$7,563	$7,563	$7,563	$22,689	$934	$86	($150)	$869	($6,629)	($7,477)	($7,713)	($21,819)	-88%	-99%	-102%	-96%	No
Protection of Grid Infrastructure Assets	Physical Security	Grid Infrastructure Protection - Enhanced	Yes	On-Going	Annual	$28,380	$28,380	$28,380	$85,139	$15,686	$33,813	$30,035	$79,533	($12,694)	$5,433	$1,655	($5,606)	-45%	19%	6%	-7%	No
Protection of Major Business Functions	Physical Security	Non-Electric Facilities/Protection of Major Business Functions	Yes	On-Going	Annual	$13,745	$13,745	$13,745	$41,236	$16,623	$18,334	$19,988	$54,946	$2,878	$4,589	$6,243	$13,710	21%	33%	45%	33%	No
Relays, Protection and Control Replacements	N/A	N/A	Yes	On-Going	Annual	$75,172	$75,172	$75,172	$225,516	$74,823	$80,464	$80,736	$236,023	($349)	$5,292	$5,564	$10,507	0%	7%	7%	5%	No
Substation Capital Breakdown Maintenance	N/A	N/A	Yes	On-Going	Annual	$13,156	$13,156	$13,156	$39,468	$27,475	$20,148	$26,230	$73,854	$14,319	$6,992	$13,074	$34,385	109%	53%	99%	87%	No
Substation Claim	N/A	N/A	Yes	On-Going	Annual	$396	$396	$396	$1,189	$791	$339	$521	$1,650	$395	($58)	$125	$462	100%	-15%	31%	39%	No
Substation Transformer Bank Replacement	N/A	N/A	Yes	On-Going	Annual	$87,713	$87,713	$87,713	$263,138	$53,675	$52,756	$44,530	$150,962	($34,038)	($34,956)	($43,182)	($112,176)	-39%	-40%	-49%	-43%	**Yes**
Telecommunication Deteriorated Pole Replacement	N/A	N/A	Yes	On-Going	Annual	$230	$230	$230	$690	$261	$148	$159	$568	$31	($82)	($71)	($122)	13%	-36%	-31%	-18%	No
Telecommunication Inspection and Maintenance	N/A	N/A	Yes	On-Going	Annual	$3,014	$3,014	$3,014	$9,043	$4,350	$2,921	$2,569	$9,840	$1,336	($93)	($446)	$797	44%	-3%	-15%	9%	No
Telecommunication Pole Loading Program Replacement	N/A	N/A	Yes	Eleven Years (2014 - 2025)	Ten of Eleven	$1,124	$1,124	$1,124	$3,372	$20	$40	($9)	$51	($1,104)	($1,084)	($1,133)	($3,321)	-98%	-96%	-101%	-98%	No
Transmission Capital Maintenance	N/A	N/A	Yes	On-Going	Annual	$87,353	$87,353	$87,353	$262,059	$49,697	$43,345	$35,987	$129,029	($37,656)	($44,008)	($51,366)	($133,030)	-43%	-50%	-59%	-51%	No
Transmission Claim	N/A	N/A	Yes	On-Going	Annual	$3,835	$3,835	$3,835	$11,504	$6,446	$7,400	$7,933	$21,779	$2,611	$3,565	$4,099	$10,275	68%	93%	107%	89%	No
Transmission Deteriorated Pole Replacement	N/A	N/A	Yes	On-Going	Annual	$98,274	$98,274	$98,274	$294,822	$90,033	$101,258	$93,198	$284,489	($8,241)	$2,984	($5,076)	($10,333)	-8%	3%	-5%	-4%	**Yes**
Transmission Emergency Equipment	N/A	N/A	Yes	On-Going	Annual	$166	$166	$166	$497	$0	$0	$0	$0	($166)	($166)	($166)	($497)	-100%	-100%	-100%	-100%	No
Transmission Line Rating Remediation (TLRR)	N/A	N/A	Yes	On-Going	Annual	$136,614	$136,614	$136,614	$409,842	$93,182	$98,285	$52,515	$243,981	($43,432)	($38,330)	($84,099)	($165,861)	-32%	-28%	-62%	-40%	**Yes**
Transmission Pole Loading Program Replacement	N/A	N/A	Yes	Eleven Years (2014 - 2025)	Nine of Eleven	$43,910	$43,910	$43,910	$131,729	$26,864	$32,398	$20,677	$79,939	($17,046)	($11,512)	($23,232)	($51,790)	-39%	-26%	-53%	-39%	**Yes**
Transmission Substation Plan (TSP)	N/A	N/A	Yes	On-Going	Annual	$89,283	$89,283	$89,283	$267,849	$112,885	$40,737	$8,485	$162,107	$23,602	($48,547)	($80,798)	($105,742)	26%	-54%	-90%	-39%	No

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll -up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
Transmission Tools and Work Equipment	N/A	N/A	Yes	On-Going	Annual	$1,426	$1,426	$1,426	$4,279	$788	$1,083	$1,886	$3,757	($638)	($344)	$460	($522)	-45%	-24%	32%	-12%	No
Transmission / Substation Storm Response Capital	N/A	N/A	Yes	On-Going	Annual	$6,193	$6,193	$6,193	$18,579	$7,724	$13,837	$9,305	$30,866	$1,531	$7,644	$3,112	$12,287	25%	123%	50%	66%	No

Table IX-23
Transmission Capital Expenditure Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Unit Description / Rationale for No Work Units**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Imputed Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Unit Diff. to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Unit Diff. to Date (%)**	**Unit Variance Explanation Triggered?**
Circuit Breaker Replacement	N/A	N/A	2.4 kV - 500 kV Substation Circuit Breakers Replaced	205	205	205	615	187	199	121	507	-18	-6	-84	-108	-9%	-3%	-41%	-18%	**Yes**
Grid Reliability Projects	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Monitoring Bulk Power System	N/A	N/A	The forecast is based on LYR to perform the inspection and the labor to support the activity and therefore providing one work unit is not feasible.																	No
NERC Compliance Programs	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Protection of Grid Infrastructure Assets	Physical Security	Grid Infrastructure Protection - Enhanced	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Protection of Major Business Functions	Physical Security	Non-Electric Facilities/Protection of Major Business Functions	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Relays, Protection and Control Replacements	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Substation Capital Breakdown Maintenance	N/A	N/A	The cost incurred to replace failed substation equipment in substation breakdown maintenance can be expected to fluctuate from year-to-year due to uncontrolled factors, such as weather. Following guidance from D.89-12-057, the CPUC stated that for those activities which have significant fluctuations in recorded expenses from year-to-year, an average of recorded expenses is appropriate.																	No
Substation Claim	N/A	N/A	Because claim expenditures are outside of SCE's control and vary significantly from year-to-year, SCE uses a five-year average to forecast these expenditures and are not unit based.																	No
Substation Transformer Bank Replacement	N/A	N/A	# of Substation Transformers Replaced	47	47	47	141	30	21	25	76	-17	-26	-22	-65	-36%	-55%	-47%	-46%	**Yes**
Telecommunication Deteriorated Pole Replacement	N/A	N/A	The forecast is based on LYR to perform the inspection and the labor to support the activity and therefore providing one work unit is not feasible.																	No
Telecommunication Inspection and Maintenance	N/A	N/A	SCE use LYR to forecast this work and is therefore not unit based.																	No
Telecommunication Pole Loading Program Replacement	N/A	N/A	The forecast is based on LYR to perform the inspection and the labor to support the activity and therefore providing one work unit is not feasible.																	No
Transmission Capital Maintenance	N/A	N/A	This includes multiple sub-programs that vary in unit types. Therefore, providing one unit type is not feasible.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Transmission Claim	N/A	N/A	Because claim expenditures are outside of SCE's control and vary significantly from year-to-year, SCE uses a five-year average to forecast these expenditures and are not unit based.																	No
Transmission Deteriorated Pole Replacement	N/A	N/A	# of Transmission Pole Replacements	3,570	3,570	3,570	10,710	3,145	2,837	2,091	8,073	-425	-733	-1,479	-2,637	-12%	-21%	-41%	-25%	**Yes**
Transmission Emergency Equipment	N/A	N/A	SCE forecasts emergency equipment costs based on management judgment of the estimated incremental costs to maintain inventory at current levels, which includes the rotation of inventory, such as cable, with finite shelf-life. This is not unit based.																	No
Transmission Line Rating Remediation (TLRR)	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Transmission Pole Loading Program Replacement	N/A	N/A	# of Transmission Pole Replacements	1,598	1,598	1,598	4,794	783	795	390	1,968	-815	-803	-1,208	-2,826	-51%	-50%	-76%	-59%	**Yes**
Transmission Substation Plan (TSP)	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Transmission Tools and Work Equipment	N/A	N/A	Because these expenditures can vary significantly from year-to-year, SCE uses historical average to forecast these expenditures and are not unit based																	No
Transmission/Substation Storm Response Capital	N/A	N/A	Because these expenditures are outside of SCE's control and vary significantly from year-to-year, SCE uses a five-year average to forecast these expenditures and are not unit based.																	No

3. Variance Explanations

Table IX-24 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table IX-24
Transmission Capital Expenditure Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Unit**	**Variance Explanation**
Circuit Breaker Replacement	No	**Yes**	**Yes**	In 2023, SCE continued to experience higher-than-forecast circuit breaker costs driven by an increase in material costs. The increase in material costs was associated with supply chain constraints. This also influenced SCE's ability to execute the forecast number of circuit breaker replacements. SCE also experienced delays in replacements from Fire Climate Zones constraints.
Grid Reliability Projects	**Yes**	**Yes**	No	SCE notes that the majority of projects in Grid Reliability are FERC jurisdictional. The Grid Reliability Projects 2023 recorded was below authorized due to continued delays with the Riverside Transmission Reliability Project (RTRP). In 2023, the City of Norco filed a Petition for Modification with the CPUC as the city continued its effort to pursue other project alternatives and additional project funding sources to underground a portion of the project. Additional projects delayed in 2023 were Lake Success Tower in Water, Lugo-Victorville 500kV T/L SPS and Coolwater Substation/ATRA project due to permitting and licensing. SCE also had four emergent projects that incurred recorded costs that was not initially included in its forecast. These projects are New Coolwater 1A 230/115 kV Transformer Bank, Barre 230 kV Switchrack Conversion, Victor 230kV Switchrack and Mirage 220/115 kv.
Monitoring Bulk Power System	No	**Yes**	No	In 2023, SCE purchased a new Palo Alto Security Firewall – 5-year Enterprise License Agreement that covers both hardware equipment and software license subscription; it is effective from Jan 2023-Dec 2027 for a total cost of $15.945 Million. It was not part of our TY 2021 GRC request. The purchase of the Palo Alto firewalls provide additional security to SCE's Grid Assets as well as Critical Infrastructure. The 5-year agreement also includes cyber licenses and may help offset hardware maintenance costs.
Substation Capital Breakdown Maintenance	No	**Yes**	No	The authorized amount for Substation Capital Breakdown Maintenance was based on five-year average of historical recorded costs. In 2023, SCE overspent the imputed authorized amount due to a higher volume of reactive maintenance that was driven by the oil circuit breaker analysis program. The oil circuit breaker analysis program enhancement began in 2020; therefore, there was a ramp-up of the program resulting in additional assessments and higher reactive maintenance expenses beginning 2021 and continuing through 2023.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	$	% / $	Unit	Variance Explanation
				Additionally, breakdown maintenance is necessarily unpredictable in terms of how much work must be accomplished in a given year. This is why SCE used a five-year historical average to forecast the expenditures. As such, yearly totals can fluctuate based on the amount and magnitude of the breakdown maintenance required. In 2023, SCE experienced a higher overall number of emergent/reactive maintenance than originally forecast in the 2021 GRC.
Substation Transformer Bank Replacement	**Yes**	**Yes**	**Yes**	SCE completed fewer units than forecast due to vendor supply chain constraints. Additionally, work execution was interrupted or delayed due to Fire Climate Zone constraints. However, SCE did realize certain efficiencies by replacing several single-phase transformers with a single three-phase transformer. This reduced or led to avoidance of labor and material costs. SCE will continue to explore the efficiencies gained by deploying three-phase transformers, where applicable, to work through any existing backlog of proactive replacement work in this program.
Transmission Capital Maintenance	**Yes**	**Yes**	No	The variance from 2023 authorized to recorded in the Transmission Capital Maintenance Program is primarily due to underspend in sub-activities for SCE's Transmission Corrosion Program and Tower Maintenance. SCE experienced resource constraints and delays in its process of onboarding consulting services, impacting the start of planned mitigation work for 2023. Additionally, the activities housed in SCE's Transmission Infrastructure Replacement Program1 also experienced scheduling delays due to permitting item and construction schedule challenges. Since the 2022 RSAR review and Energy Division recommendation, SCE is continuing its ongoing efforts to address the backlog of Transmission Capital Maintenance work.
Transmission Deteriorated Pole Replacement	No	No	**Yes**	The decrease in the number of Transmission Deteriorated Pole replacements can be attributed to a reduction in the pole failure rate experienced during the inspection phase, which resulted in fewer non-compliant poles that needed replacement. Also, a higher percentage of pole replacement constraints, such as environmental and engineering holds, as well as Caltrans permitting, resulted in a lower number of poles being replaced.
Transmission Line Rating Remediation (TLRR)	**Yes**	**Yes**	No	SCE remains committed to making progress on all projects within the TLRR Portfolio. To address Energy Division's feedback on our 2021 RSAR, we continue to communicate that progress in quarterly letters to the CPUC Safety Enforcement Division (SED) and in semi-annual letters to WECC. SCE continued to experience project delays in the TLRR Portfolio resulting in 2023 recorded to be less than authorized. SCE's TLRR projects that require licenses continue to be delayed due to licensing and permitting delays. The licensing and permitting delays continues to impact Ivanpah-Control kV subtransmission project, Gorman-Kern River

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Unit**	**Variance Explanation**
				66kV subtransmission project, Control Silver Peak 55kV subtransmission project and Eldorado-Lugo-Pisgah 220 kV transmission project.
Transmission Pole Loading Program Replacement	**Yes**	**Yes**	**Yes**	The decrease in the number of Transmission Pole Loading Program (PLP) replacements and overall spend was due to two primary factors. First, there were a lower volume of PLP assessments that needed to be completed compared to the GRC authorized forecast. Second, there was a lower pole failure rate experienced during the assessment phase, which resulted in fewer non-compliant poles that needed replacement.
Transmission Substation Plan (TSP)	**Yes**	**Yes**	No	Similar to previous years, SCE experienced project delays, deferrals, and cancellations associated with the TSP. The key driver and majority of underspend in 2022 is related to the Alberhill A Bank project, which contains a significant amount of FERC jurisdictional spending. In Feb 2021, SCE provided an updated filing for this project, which included a revised cost-to-benefit analysis. Subsequently, the CPUC issued a Staff Report in December 2021, which requested a revised application from SCE with ASP Open Air as the preferred alternative. As a result, SCE held meetings with the CPUC about this in August 2022 and SCE submitted a revised application on June 2, 2023. Based on these regulatory delays and the additional time needed to prepare the supplemental information requested by the CPUC, the operating date for this project has been deferred to 2029. Offsetting some of the underspending versus authorized that occurred because of these regulatory developments, SCE had several emergent projects in 2023, including the Irvine 66/12 substation that recorded approximately $5.0 million in 2023, that was not included in SCE's TY 2021 GRC forecast for 2023.

4. Activity Status

Table IX-25 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table IX-25
Transmission Expenditure Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Circuit Breaker Replacement	On-Going	Annual	Under	Under	Over	Partially Delayed	SCE continues to experience greater than forecasted circuit breaker costs driven by an increase in material costs. The increase in material costs was associated with supply chain constraints. This also influenced SCE's ability to execute the forecasted number of circuit breaker replacements. SCE also experienced delays in replacements from Fire Climate Zones (FCZ) constraints.
Grid Reliability Projects	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, SCE is experiencing delays in RRTP, which is largely a FERC jurisdiction project.
Monitoring Bulk Power System	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned. SCE did overspend authorized in 2023 as noted in our variance explanation.
NERC Compliance Programs	Completed	Completed	Completed	Completed	Completed	Completed	SCE completed the initial program as discussed in our TY 2021 GRC testimony in 2022.
Protection of Grid Infrastructure Assets	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Protection of Major Business Functions	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Relays, Protection and Control Replacements	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Substation Capital Breakdown Maintenance	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	Refer to variance explanation for rationale on overspend compared to authorized.
Substation Claim	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Substation Transformer Bank Replacement	On-Going	Annual	Under	Under	Under	Partially Delayed	SCE completed fewer units than forecast due to vendor supply chain constraints. Additionally, work execution was interrupted or delayed due to

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
							Fire Climate Zone constraints. However, we did realize certain efficiencies by replacing several single-phase transformers with one three-phase transformer. This reduced labor, material, and maintenance costs. SCE will continue to explore the efficiencies gained by deploying three-phase transformers, where applicable, to work through any existing backlog of proactive replacement work in this program.
Telecommunication Deteriorated Pole Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Telecommunication Inspection and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Telecommunication Pole Loading Program Replacement	Eleven Years (2014 - 2025)	Ten of Eleven	On-Target	On-Target	On-Target	Proceeding as Planned	While SCE has spent less than 5% of authorized, SCE does not consider this program cancelled. Telecommunication pole replacements, while making up a small portion of the overall pole population, is still a necessary activity. The reason the total spend is lower than authorized is due to the number of required telecommunication pole replacements being lower than forecast.
Transmission Capital Maintenance	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, the variance is primarily driven by under-recording in the Transmission Tower Corrosion Program. In 2021, SCE developed the Transmission Tower Corrosion Program in an effort to mitigate the impact of corrosion on its transmission towers. This variance is a result of SCE standing up a new program and refining its overall scoping, execution, and recording practices. SCE expects that this impact to the program should not continue at this level moving forward.
Transmission Claim	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Transmission Deteriorated Pole Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned, however as noted in our variance explanation, The decrease in the number of Transmission Deteriorated Pole replacements can be attributed to a reduction in the failure rate of poles when compared to forecast. Also, a higher percentage of pole replacement constraints, such as environmental and engineering holds, as well as Caltrans permitting, resulted in a lower number of poles being replaced.
Transmission Emergency Equipment	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	While SCE has spent less than 5% of authorized, SCE does not consider this program cancelled. This spend is driven by emergency spare usage and replacement, and based on general averages; however, the spend is not always linear, and SCE did not require replacement of spare parts in 2021 - 2023. However, that does not mean SCE may not require replacement parts in 2024.
Transmission Line Rating Remediation (TLRR)	On-Going	Annual	Under	Under	Under	Partially Delayed	While SCE experienced several project delays and deferrals for TLRR projects, SCE remains committed to making progress on all projects within the TLRR Portfolio. Please refer to our variance explanation for additional details.
Transmission Pole Loading Program Replacement	Eleven Years (2014 - 2025)	Ten of Eleven	On-Target	On-Target	Over	Proceeding as Planned	SCE is on schedule to complete PLP by 2025, however costs are exceeding forecast. Refer to Variance explanation for more details.
Transmission Substation Plan (TSP)	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, Similar to previous years, SCE experienced higher priority emergent needs outside of the TSP, as well as project delays, deferrals, and cancellations associated with the TSP. The key driver and majority of underspend in 2022 is related to the Alberhill A Bank project.
Transmission Tools and Work Equipment	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Transmission/Substation Storm Response Capital	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

X.

GENERATION CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

For the Generation expense activities that are SAR-eligible, Table X-26 below provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table X-26
Generation Expense Category Activity Description

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Catalina - Diesel	Catalina Generation's O&M expenses are for ongoing operations and maintenance activities necessary for the operation of the generators and connected electrical systems. These activities include miscellaneous expenses such as minor spare parts, general and administrative support staff, automotive repair, tools, and compliance reporting. Labor costs include SCE employees who work at the Pebbly Beach Generating Station and at other locations. Non-labor costs include repair parts, chemicals, supplies, contracts and various miscellaneous expenses needed to operate and maintain Catalina's generation units.	SCE-05 Vol: 1	WPSCE05V1BkB pp. 210 - 216	N/A	N/A
Hydro	The expenses include costs for operating and maintaining SCE's Hydro generating units and associated reservoirs, dams, waterways, and miscellaneous Hydro facilities. Work activities are presented in three main categories: (1) Water for Power and Rents, (2) Hydro Operations, and (3) Hydro Maintenance. These expenses are necessary for SCE's Hydro generation to provide reliable service at low cost, maintain safe operations for employees and the public, and comply with applicable laws and regulations.	SCE-05 Vol: 1	WPSCE05V1BkA pp. 5 - 11	N/A	N/A
Mountainview	The Mountainview Operations GRC activity comprises all labor and non-labor expenses that record as operations-related expenses. These activities include operation supervision and engineering, general expenses, miscellaneous other power generation expenses, and rentals. The Mountainview Maintenance	SCE-05 Vol: 1	WPSCE05V1BkB pp. 167 - 180	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	work activity includes all labor, non-labor, and other expenses (e.g., the GE Contractual Service Agreement costs) associated with maintaining and repairing the power island and all general plant maintenance-related expenses.				
Palo Verde	This activity includes expenses related to materials for the Palo Verde nuclear generation station which are not specifically provided for or are not readily assignable to other nuclear generation operation accounts.	SCE-05 Vol: 1	WPSCE05V1BkB pp. 256 - 296	N/A	N/A
Peakers	Includes costs for SCE employees who routinely work at the Peaker locations and support provided to the plant by employees who work at other locations. Non-labor includes costs to repair parts, chemicals, supplies, contracts, and numerous other items needed to operate and maintain the Peaker plants. This also includes costs for interconnection fees that SCE pays to be connected to the bulk power grid.	SCE-05 Vol: 1	WPSCE05V1BkB pp. 194 - 200	N/A	N/A
Solar	Maintenance: Labor and non-labor expenses incurred in the maintenance of rooftop solar photovoltaic program projects. Operations: Labor and non- labor expenses incurred in the operation of rooftop solar photovoltaic program projects.	SCE-05 Vol: 1	WPSCE05V1BkB pp. 235 - 252	N/A	N/A

2. GRC Activities Dollar and Unit Variance Calculations

Table X-27 and Table X-28 below provide the authorized and recorded costs, and variance and percentage change values for each Generation expense activity in terms of dollars and units. These tables also indicate whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table X-27
Generation Expense Category Activity Variance Dollar Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll-up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff, to Date**	**$ Variance Explanation Required**
Catalina - Diesel	N/A	N/A	Yes	On-Going	Annual	$5,667	$5,876	$6,363	$17,906	$6,133	$5,625	$6,605	$18,363	$466	($251)	$242	$457	8%	-4%	4%	3%	No
Hydro	N/A	N/A	Yes	On-Going	Annual	$43,601	$45,169	$49,018	$137,789	$45,313	$41,245	$52,898	$139,456	$1,712	($3,924)	$3,879	$1,667	4%	-9%	8%	1%	No
Mountainview	N/A	N/A	Yes	On-Going	Annual	$29,402	$30,574	$33,370	$93,346	$20,514	$29,478	$26,561	$76,553	($8,888)	($1,096)	($6,808)	($16,793)	-30%	-4%	-20%	-18%	**Yes**
Palo Verde	N/A	N/A	Yes	On-Going	Annual	$72,249	$75,449	$83,237	$230,935	$73,401	$75,076	$79,747	$228,224	$1,152	($373)	($3,490)	($2,711)	2%	0%	-4%	-1%	No
Peakers	N/A	N/A	Yes	On-Going	Annual	$7,957	$8,262	$8,984	$25,203	$8,728	$8,104	$7,983	$24,815	$771	($158)	($1,001)	($388)	10%	-2%	-11%	-2%	No
Solar	N/A	N/A	Yes	On-Going	Annual	$1,389	$1,444	$1,575	$4,408	$1,381	$1,358	$1,398	$4,137	($8)	($86)	($177)	($271)	-1%	-6%	-11%	-6%	No

Table X-28
Generation Expense Category Activity Variance Unit Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Unit Description / Rationale for No Work Units**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Imputed Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Units to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Unit Diff. to Date**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Unit Diff. to Date (%)**	**Unit Variance Explanation Triggered?**
Catalina - Diesel	N/A	N/A	Unable to identify a single unit due to multiple activities for supporting this Generation activity.																	No
Hydro	N/A	N/A	Unable to identify a single unit due to multiple activities for supporting this Generation activity.																	No
Mountainview	N/A	N/A	Unable to identify a single unit due to multiple activities for supporting this Generation activity.																	No
Palo Verde	N/A	N/A	Unable to identify a single unit due to multiple activities for supporting this Generation activity.																	No
Peakers	N/A	N/A	Unable to identify a single unit due to multiple activities for supporting this Generation activity.																	No
Solar	N/A	N/A	Unable to identify a single unit due to multiple activities for supporting this Generation activity.																	No

3. Variance Explanations

Table X-29 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table X-29
Generation Expense Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Unit**	**Variance Explanation**
Mountainview	No	**Yes**	No	Mountainview recorded O&M lower than the 2023 GRC authorized amount of by approximately 20%. The underrun was partly due to the cancelling of the General Electric ("GE") contractual service agreement ("GE CSA") in 2021. After evaluating terms and conditions of the GE CSA considering current operating conditions, and following several rounds of discussions with GE, SCE found it prudent to discontinue the contract from both an operational and overall cost standpoint. This will not impact SCE's ability to safely and reliably operate Mountainview Generating Station. Mountainview O&M is subject to significant year-to-year variances, as the plant approaches the midpoint of its expected lifecycle and components that may have remained relatively trouble-free in the early years of plant existence begin to require higher levels of maintenance, and in some cases may experience in-service failures. While SCE completed inspections and maintenance activities in 2023, SCE did defer some activities to 2024 and 2025. The variance was also due to deferral of maintenance based on risk prioritization.

4. Activity Status

Table X-30 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table X-30
Generation Expenditure Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Catalina - Diesel	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Hydro	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Mountainview	On-Going	Annual	Under	Under	Under	Partially Delayed	As mentioned in our variance explanation, Mountainview O&M is subject to significant year-to-year variances, as the plant approaches the midpoint of its expected lifecycle and components that may have remained relatively trouble-free in the early years of plant existence begin to require higher levels of maintenance, and in some cases may experience in-service failures. While SCE completed inspections and maintenance activities in 2023, SCE did defer some activities to 2024 and 2025. The variance was also due to deferral of maintenance based on risk prioritization.
Palo Verde	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Peakers	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Solar	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

For the Generation capital activities that are SAR-eligible, Table X-31 below provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table X-31
Generation Capital Expenditure Category Activity Description

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Catalina - Diesel	Labor and non-labor expenses necessary to operate and maintain Catalina's generation and ancillary equipment. Also includes home office support expenses. Projects include Catalina Repower and a 2.4 kV switchyard upgrade.	SCE-05 Vol: 1	WPSCE05V1BkB, pp. 217-225	N/A	N/A
Hydro - Dams and Waterways	Dams and Waterways projects include the rebuilding of reservoirs, flowlines, or flumes, installing flow measurement equipment, replacing valves, and installing debris removal equipment or fish screens.	SCE-05 Vol: 1	WPSCE05V1BkB, pp. 217-225	Hydro Asset Failure	Dam Surface Protection, Instrumentation / Communication Enhancements, Low Level Outlet Improvements, Seepage Mitigation, Seismic Retrofit and Spillway Remediation and Improvement
Hydro - Decommissioning	Due to contractual obligations and proposed U.S. Forest Service requirements, SCE anticipates it will be required to do significant construction work on the San Gorgonio facilities before turning the project over to the local water agencies.	SCE-05 Vol: 1	WPSCE-05V1, Book A, pp. 109-194 and Book B, pp. 2-162	N/A	N/A
Hydro - Electrical Equipment	Control systems, circuit protection, and transformers wear out over time and require replacement at the Hydro facilities. Larger projects in this category typically involve complete replacement of excitation equipment, high voltage plant circuit breakers, transformers, or automation work. Excitation	SCE-05 Vol: 1	WPSCE-05V1, Book A, pp. 86-98	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	equipment provides the power to a generator's field windings, which is necessary to produce output power. Plant circuit breakers are large devices that protect and disconnect Hydro facilities from the transmission network. Step-up transformers convert the Hydro plant voltage to that of the transmission network or grid. Automation equipment is used to remotely or efficiently control processes at powerhouses and ancillary facilities.				
Hydro - Prime Movers	SCE Hydro operates seventy-six generating units at thirty-five powerhouses. Water turbines convert the flow of high-pressure water into rotary motion or mechanical energy, which the generators convert into electrical power. The high-pressure water and rotary motion cause wear and tear on the turbine units. The heat created by a generator when producing electrical power also causes wear and tear on the generator bearings and windings. If timely repairs are not performed when warranted, unit failure is inevitable. Therefore, turbines and generators receive annual maintenance and inspections.	SCE-05 Vol: 1	WPSCE-05V1, Book A, pp. 31-65	N/A	N/A
Hydro - Relicensing	Hydro - Relicensing executes the requirements of FERC relicensing and new license implementation projects, including Minimum Instream Flow Upgrades and Campground Infrastructure Refurbishments/Replacements.	SCE-05 Vol: 1	WPSCE-05V1, Book A, pp. 16-30	N/A	N/A
Hydro - Structures and Grounds	Hydro - Structures and Grounds involves needed work related to various structures including the powerhouses, roofs, cranes, heating ventilation and air conditioning, and to infrastructure including roads, bridges, paving, fencing and gates, fire and water systems, and wastewater projects. The major projects	SCE-05 Vol: 1	WPSCE-05V1, Book A, pp. 98-108	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	in this category are replacing high-pressure piping, completing road and bridge improvements, and installing dam safety video surveillance equipment.				
Mountainview	Includes SCE's planned capital expenditures for Mountainview that support reliable service, compliance with applicable laws and regulations, and safe operations for employees and the public.	SCE-05 Vol: 1	WPSCE-05V1, Book B, pp. 181-192	N/A	N/A
Palo Verde	The activity, Palo Verde includes expenses related to materials used and expenses incurred for Palo Verde which are not specifically provided for or are not readily assignable to other nuclear generation operation accounts.	SCE-05 Vol: 1	WPSCE-05V1, Book B, pp. 263-264	N/A	N/A
Peakers	SCE's planned capital expenditures for the Peaker plants that support reliable service, compliance with applicable laws and regulations, and safe operations for employees and the public.	SCE-05 Vol: 1	WPSCE-05V1, Book B, pp. 201-208	N/A	N/A
Protection of Generation Assets	This activity includes the costs to implement security measures such as access control, alarms, surveillance, and perimeter protections at Generation assets, such as dams and peaker facilities.	SCE-04 Vol: 4	WPSCE04V4 pp. 80	Physical Security	Protection of Generation Capabilities
Solar	Maintenance: Labor and non-labor expenses incurred in the maintenance of rooftop solar photovoltaic program (SPVP) projects. Operations: Labor and non-labor expenses incurred in the operation of rooftop solar photovoltaic program (SPVP) projects.	SCE-05 Vol: 1	WPSCE-05V1, Book B, pp. 253-255	N/A	N/A

2. GRC Activities Variance Calculations

Table X-32 and Table X-33 below provides the authorized, recorded, variance and percentage change values for each Generation expenditure category activity in terms of dollars and units. These tables also indicate whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table X-32
Generation Capital Expenditure Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll -up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff, to Date**	**$ Variance Explanation Required**
Catalina - Diesel	N/A	N/A	Yes	On-Going	Annual	$2,048	$2,048	$2,048	$6,144	($444)	$398	$90	$44	($2,492)	($1,650)	($1,958)	($6,100)	-122%	-81%	-96%	-99%	No
Hydro - Dams and Waterways	Hydro Asset Failure	Dam Surface Protection	No	On-Going	Annual	$0	$0	$0	$0	$1,207	$347	$176	$1,730	$1,207	$347	$176	$1,730	N/A	N/A	N/A	N/A	No
Hydro - Dams and Waterways	Hydro Asset Failure	Instrumentation / Communication Enhancements	No	On-Going	Annual	$250	$250	$250	$750	$237	$421	$0	$658	($13)	$171	($250)	($92)	-5%	68%	-100%	-12%	No
Hydro - Dams and Waterways	Hydro Asset Failure	Low Level Outlet Improvements	No	On-Going	Annual	$0	$0	$0	$0	$3,596	$1,342	$1,267	$6,205	$3,596	$1,342	$1,267	$6,205	N/A	N/A	N/A	N/A	No
Hydro - Dams and Waterways	Hydro Asset Failure	Non-RAMP	No	On-Going	Annual	$5,937	$5,937	$5,937	$17,811	$8,059	$9,782	$0	$17,841	$2,122	$3,845	($5,937)	$30	36%	65%	-100%	0%	No
Hydro - Dams and Waterways	Hydro Asset Failure	Seepage Mitigation	No	On-Going	Annual	$3,900	$3,900	$3,900	$11,700	$0	$0	$0	$0	($3,900)	($3,900)	($3,900)	($11,700)	-100%	-100%	-100%	-100%	No
Hydro - Dams and Waterways	Hydro Asset Failure	Seismic Retrofit	No	On-Going	Annual	$0	$0	$0	$0	$0	$109	$0	$109	$0	$109	$0	$109	N/A	N/A	N/A	N/A	No
Hydro - Dams and Waterways	Hydro Asset Failure	Spillway Remediation and Improvement	No	On-Going	Annual	$2,500	$2,500	$2,500	$7,500	$1,345	$1,758	$2,200	$5,303	($1,155)	($742)	($300)	($2,197)	-46%	-30%	-12%	-29%	No
Hydro - Dams and Waterways	N/A	Total	Yes	On-Going	Annual	$12,587	$12,587	$12,587	$37,761	$14,443	$13,759	$11,659	$39,861	$1,856	$1,173	($928)	$2,101	15%	9%	-7%	6%	No
Hydro - Decommissioning	N/A	N/A	Yes	On-Going	Annual	$418	$418	$418	$1,254	$586	$32,777	$6,559	$39,921	$168	$32,359	$6,141	$38,668	40%	7745%	1470%	3085%	No
Hydro - Electrical Equipment	N/A	N/A	Yes	On-Going	Annual	$3,533	$3,533	$3,533	$10,598	$9,776	$9,115	$10,542	$29,433	$6,243	$5,583	$7,009	$18,835	177%	158%	198%	178%	No
Hydro - Prime Movers	N/A	N/A	Yes	On-Going	Annual	$10,004	$10,004	$10,004	$30,012	$4,198	$1,054	$4,659	$9,911	($5,806)	($8,950)	($5,345)	($20,101)	-58%	-89%	-53%	-67%	No
Hydro - Relicensing	N/A	N/A	Yes	On-Going	Annual	$15,310	$15,310	$15,310	$45,929	$6,731	$6,453	$8,466	$21,651	($8,579)	($8,856)	($6,843)	($24,278)	-56%	-58%	-45%	-53%	No
Hydro - Structures and Grounds	N/A	N/A	Yes	On-Going	Annual	$3,203	$3,203	$3,203	$9,609	$6,647	$2,051	$4,928	$13,626	$3,444	($1,152)	$1,725	$4,017	108%	-36%	54%	42%	No
Mountainview	N/A	N/A	Yes	On-Going	Annual	$6,595	$6,595	$6,595	$19,785	$4,760	$9,551	$10,998	$25,309	($1,835)	$2,956	$4,403	$5,524	-28%	45%	67%	28%	No
Palo Verde	N/A	N/A	Yes	On-Going	Annual	$37,212	$37,212	$37,212	$111,635	$35,851	$34,429	$38,475	$108,755	($1,361)	($2,782)	$1,264	($2,880)	-4%	-7%	3%	-3%	No
Peakers	N/A	N/A	Yes	On-Going	Annual	$0	$0	$0	$0	$9,937	$2,299	$642	$12,878	$9,937	$2,299	$642	$12,878	N/A	N/A	N/A	N/A	No
Protection of Generation Assets	Physical Security	Protection of Generation Capabilities	Yes	On-Going	Annual	$3,288	$3,288	$3,288	$9,864	$1,061	$1,613	$2,157	$4,831	($2,227)	($1,675)	($1,131)	($5,033)	-68%	-51%	-34%	-51%	No
Solar	N/A	N/A	Yes	On-Going	Annual	$102	$102	$102	$307	$16	$707	$9,723	$10,447	($86)	$605	$9,621	$10,140	-84%	591%	9396%	3305%	No

Table X-33
Generation Capital Expenditure Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Catalina - Diesel	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Hydro - Dams and Waterways	Hydro Asset Failure	Dam Surface Protection	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Hydro - Dams and Waterways	Hydro Asset Failure	Instrumentation / Communication Enhancements																		No
Hydro - Dams and Waterways	Hydro Asset Failure	Low Level Outlet Improvements																		No
Hydro - Dams and Waterways	Hydro Asset Failure	Non-RAMP																		No
Hydro - Dams and Waterways	Hydro Asset Failure	Seepage Mitigation																		No
Hydro - Dams and Waterways	Hydro Asset Failure	Seismic Retrofit																		No
Hydro - Dams and Waterways	Hydro Asset Failure	Spillway Remediation and Improvement																		No
Hydro - Dams and Waterways	N/A	Total																		No
Hydro - Decommissioning	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Hydro - Electrical Equipment	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Hydro - Prime Movers	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Hydro - Relicensing	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Hydro - Structures and Grounds	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Mountainview	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No
Palo Verde	N/A	N/A	This activity is comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Peakers	N/A	N/A	This activity is comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Protection of Generation Assets	Physical Security	Protection of Generation Capabilities	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Solar	N/A	N/A	These workpapers are comprised of multiple projects and types of projects that vary in size and scope, and therefore providing a single work unit is not feasible																	No

3. Variance Explanations

SCE did not have any Capital Generation GRC Activity that meet the variance thresholds.

4. Activity Status

Table X-34 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table X-34
Generation Expenditure Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Catalina - Diesel	On-Going	Annual	Under	Under	Under	Partially Delayed	While SCE has spent less than 5% of authorized, SCE does not consider this program cancelled. SCE requested one project associated with this GRC activity in the TY 2021 GRC (PBGS Resurface Paving Project) which has been delayed to later years.
Hydro - Dams and Waterways	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Hydro - Decommissioning	On-Going	Annual	Over	Over	Over	Expanded / Emergent	In the 2021 GRC Final Decision, the CPUC approved $0.408 million annually for SCE to address ongoing safety, regulatory, and other requirements for the San Gorgonio project. The CPUC authorized amount was consistent with recorded 2019 capital expenditures but did not cover physical decommissioning activities at San Gorgonio because the timeline for decommissioning activities was unclear at the time that SCE has now initiated.
Hydro - Electrical Equipment	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Hydro - Prime Movers	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Hydro - Relicensing	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Hydro - Structures and Grounds	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Mountainview	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Palo Verde	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Peakers	On-Going	Annual	Over	Over	Over	Expanded / Emergent	SCE completed work on three emergent Peaker power plant projects that were necessary to preserve equipment reliability and safety: (1) the Grapeland Hybrid Peaker turbine refurbishment project, (2) Carbon Monoxide (CO) catalyst replacement projects at the Center and Grapeland hybrid units, and (3) the selective catalytic reduction upgrade project at the Mira Loma Peaker.
Protection of Generation Assets	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Solar	On-Going	Annual	Over	Over	Over	Expanded / Emergent	SCE started decommissioning Solar Photovoltaic Program (SPVP) sites that were not part of our TY 2021 GRC forecast. While SCE has reasonably operated and maintained its SPVP assets, as demonstrated in the Commission's annual ERRA review of operations, the assets have undergone significant wear and tear since the first solar plant entered service in 2008 and recent wiring and component failures have caused hotspots and localized roof fires on occupied buildings

XI.

OTHER CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

For the Other expense activities that are SAR-eligible, Table XI-35 below provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table XI-35
Other Expense Category Activity Description

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
All Hazards Assessment, Mitigation and Analytics	All Hazards, Assessment, Mitigation & Analytics - includes cost to assess and mitigate hazards such as seismic, climate change, severe weather and other hazards.	SCE-04 Vol: 1	WPSCE04V1 pp.8 - 20	Climate Change and Building Safety	Climate Adaptation & Severe Weather and Seismic Building Safety Program
Cyber Software License and Maintenance	Expenses incurred for licensing and ongoing maintenance of Cyber Security software.	SCE-04 Vol: 3	WPSCE04V3 pp. 143 - 150	Cyber Attack	Data Protection, Grid Modernization Cybersecurity, Interior Protection, Perimeter Defense and SCADA Cybersecurity
Cybersecurity Delivery and IT Compliance	Expenses associated with delivering cybersecurity services and monitoring compliance with key cybersecurity related regulations.	SCE-04 Vol: 3	WPSCE04V3 pp. 21 - 27	Cyber Attack	Data Protection, Grid Modernization Cybersecurity, Interior Protection, Perimeter Defense and SCADA Cybersecurity
Develop and Manage Policy and Initiatives	The Develop and Manage Policy and Initiatives activity consists of work performed within the Regulatory Affairs organization. The work includes activities that support SCE's management of the regulatory work required to support and implement energy, environmental, and wildfire mitigation policies, as well as other	SCE-06 Vol: 6	WPSCE06V6 pp. 1 - 6	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	policies instituted by state, federal, and local agencies.				
Distribution Storm Response O&M	Distribution Storm - Includes the costs to patrol for and repair storm related damages and toxic waste disposal for distribution lines and facilities. Storm damage can be the result of severe weather conditions such as rain, wind, lightning, and by natural disasters such as earthquakes and forest fires. The storm costs included in this account are: switching, locating and isolating trouble on the system, removal of debris from lines or equipment, and securing damaged sites until repairs have been completed. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-04 Vol: 2	WPSCE04V2 pp. 23 - 29	N/A	N/A
Education, Safety and Operations	The Education, Safety and Operations consists of work performed within the Local Public Affairs (LPA) organization. LPA is responsible for managing and directing external engagement with government officials, staff, businesses, and local community stakeholders representing 185 cities, 15 counties, and 13 Native American tribes in the SCE service territory. The activities covered include outreach and education related to electric safety, emergency response communications (including wildfire mitigation programs), capital infrastructure projects, operations	SCE-06 Vol: 6	WPSCE06V6 pp. 7 - 12	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	impacting local communities, reliability issues, and education on state-mandated policy initiatives such as energy efficiency, renewable energy sources, distributed generation, transportation electrification, community resiliency, and other programs.				
Emergency Preparedness and Response	Costs incurred to maintain expertise and provide direct support to the company and Service territory for emergency management preparedness, response and recovery operations.	SCE-04 Vol: 2	WPSCE04V2 pp. 11 - 22	Climate Change	Emergency Management and Fire Management
Employee and Contractor Safety	Includes all costs associated with salaries, expenses, and consultant services of personnel engaged of Employee and Contractor Safety activities.	SCE-06 Vol: 4	WPSCE06V4 pp. 54 - 60	Employee, Contractor and Public Safety	Contractor Safety Program and Industrial Ergonomics
Enhanced Situational Awareness	Expenses incurred to support the Situational Awareness Center.	SCE-04 Vol: 5	WPSCE04V5Pt2 pp. 59 - 70	N/A	N/A
Environmental Management and Development	Includes all costs associated with salaries and expenses in Environmental Services for the management and oversight of environmental programs. This activity involves administrative and general activities regarding environmental matters and issues that affect company operations.	SCE-06 Vol: 4	WPSCE06V4 pp. 3 - 9	N/A	N/A
Environmental Programs	Includes all costs associated with salaries and expenses for distribution, transmission, generation, and hazardous waste environmental programs, including the expenses associated with the maintenance and monitoring of the San Dieguito Wetlands and Wheeler North Reef Mitigation Projects.	SCE-06 Vol: 4	WPSCE06V4 pp. 10 - 16	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Ethics and Compliance	Includes all costs associated with salaries and expenses to maintain the effectiveness of SCE's Ethics & Compliance (E&C) program. E&C incorporates and reinforces the Company's core values of Safety, Integrity, Excellence, Respect, Continuous Improvement and Teamwork. The goal of the Program is to facilitate and sustain a culture where acting ethically and obeying the law is the expected and everyday course of action for employees and the Company's business partners.	SCE-06 Vol: 4	WPSCE06V4 pp. 47 - 53	N/A	N/A
External Communications	This activity consists of external communications to help customers and the public stay safe around electrical infrastructure and to understand company and regulatory actions that affect them directly.	SCE-03 Vol: 2	WPSCE03V2 pp. 21 - 26	Contact with Energized Equipment	Public Outreach
Facility and Land Operations	Facility and Land Operations Business Planning Activities (BPA's) include: Facility Asset Management, Business Planning, Corporate Real Estate (CRE) Project Management, Camp Edison, Forestry Management, and Acquire/Dispose of Land Rights. Facility Asset Management activities are focused on providing a safe and productive environment for employees, visitors, and customers at SCE facilities. Business Planning activities entail strategic planning and transactional activities including leasing for the SCE facility portfolio. CRE Project Management is	SCE-06 Vol: 5	WPSCE06V5BKA.pdf pp. 234 - 239	Building Safety, Employee, Contractor and Public Safety	Electrical Inspections, Fire Life Safety Portfolio Assessment and Office Ergonomics - Core Program

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	responsible for overseeing large capital projects in the SCE facility portfolio. Camp Edison includes operating and maintaining the campground facility and infrastructure. Forestry management operations include activities such as vegetation management, timber harvesting (thinning), wildfire prevention, reforestation and rehabilitation, protection of natural resources. Acquire/Dispose of Land Rights manages and coordinates requests for third party use of SCE land and land rights, including those rights associated with the relocation and removal of SCE facilities.				
Fire Science and Advanced Modeling	Fire Science and Advanced Modeling - includes cost for gathering and integration of science and technology to support wildfire mitigation across the SCE service territory. The sub-activities are: Advanced Modeling Computer Hardware, Fuel Sampling Program, Remote Sensing Satellite, etc.	SCE-04 Vol: 5	WPSCE04V5Pt2 pp. 78 - 92	N/A	N/A
Grid Mod Cybersecurity	Expenses incurred in providing Cybersecurity capabilities for the Grid Mod program.	SCE-04 Vol: 3	WPSCE04V3 pp. 116 - 122	Cyber Attack	Grid Modernization Cybersecurity
Organizational Support	This activity includes the labor and contract costs associated with change management support for EOI, PSPS, and other wildfire management activities.	SCE-04 Vol: 5	WPSCE04V05APt01 pp. 351 - 359	N/A	N/A
Physical Security	Security Technology, Operations and Maintenance includes two sub-activities: (1) Project Management Office and (2) Break-fix and Preventive Maintenance. The Project	SCE-04 Vol: 4	WPSCE04V4 pp. 25 - 36	Physical Security	Asset Protection, Insider Threat Program Enhancement -

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	Management Office (PMO) implements standards for management of physical security projects and tracks and prioritizes physical security projects from initiation through completion. Break-fix and preventive maintenance activities include monitoring and repairing all Physical Access Control Systems (PACS) for both NERC and Non-NERC sites. Beyond PACS, there are four major types of security systems and equipment in use at SCE: access control, intrusion detection, perimeter protection, and video surveillance systems. The Workforce Protection and Insider Threat program includes: (1) security officer services, both at office buildings and in the field, including emergency backup of security officers and on-demand services, (2) centralized alarm monitoring and call/dispatch via the Edison Security Operations Center, (3) badging office, (4) background investigations, (5) Insider Threat program, (6) governance and compliance of security programs, and (7) administrative and general functions.				Information Analysis – Base
Planning, Continuity and Governance	Costs incurred to develop and maintain emergency and contingency plans, maintain continuity of operations, and governance over compliance programs related to emergency management, response and recovery.	SCE-04 Vol: 1	WPSCE04V1 pp. 1 - 7	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
PSPS Customer Support	Technology investments to improve the PSPS programs and protocols.	SCE-04 Vol: 5	WPSCE04V05A pp. 2 - 18	Wildfire	PSPS Protocol and Support Functions
PSPS Execution	PSPS Execution includes costs incurred in maintaining the capability of monitoring conditions for the activation of a planned outage on circuits with an elevated risk of wildfire, along with certain costs incurred in activation and deactivation of these planned outages.	SCE-04 Vol: 5	WPSCE04V05A pp. 29 - 54	Wildfire	PSPS Protocol and Support Functions
Public Safety	Includes all costs associated with salaries, expenses, and consultant services of personnel engaged of Public Safety activities.	SCE-06 Vol: 4	WPSCE06V4 pp. 61 - 67	N/A	N/A
Safety Activities - Transmission & Distribution	The cost of labor, materials used, and expenses incurred to develop and deliver safety programs to distribution and transmission personnel. Also includes the seat-time (labor costs) for employees to attend safety events and trainings and non-labor costs related to event attendance such as transportation expenses, meals, travel, lodging, and incidental expenses, as well as division overhead.	SCE-06 Vol: 4	WPSCE06V4 pp. 75 - 81	Employee, Contractor and Public Safety	Safety Controls
Safety Culture Transformation	Includes all costs associated with salaries, expenses, and consultant services of personnel engaged of Safety Culture Transformation activities. Costs relating with seat-time for employees to attend Safety Culture training sessions were excluded from this activity.	SCE-06 Vol: 4	WPSCE06V4 pp. 68 - 74	Employee, Contractor and Public Safety	Safety Culture Transformation
Software Maintenance and Replacement	The Software Maintenance and Replacement O&M work activity includes SCE labor and non-labor costs required to maintain SCE's	SCE-06 Vol: 1 Pt. 2	WPSCE06V01Pt01A pp. 34 - 40	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	operating software assets through on-premise license, cloud, subscription, and maintenance agreements. Operating Software includes operating systems, business intelligence systems, database management systems, cross-system integration tools, IT monitoring tools and end-user productivity and collaboration software which enable business applications to take advantage of the underlying hardware features and functions.				
Technology Delivery	This activity includes SCE labor and non-labor to plan and implement capital software projects. It also includes costs for project management, post go-live stabilization, and change management expenses. Lastly, the activity includes O&M software project costs that are expensed (typically less than $250,000).	SCE-06 Vol: 1 Pt. 2	WPSCE06V01Pt01A pp. 9 - 21	N/A	N/A
Technology Infrastructure Maintenance and Replacement	The Technology Infrastructure Maintenance and Replacement activity provides support of business applications and services for SCE's: (1) data center infrastructure, (2) end user computing maintenance, and (3) technology adoption. Support for SCE's data centers involves procuring, installing, and maintenance of all enterprise data center hardware infrastructure. End user computing maintenance covers the performance management of SCE's Service Desk that resolves approximately 204,000 service tickets per year as well as management of SCE's smart phone plans, tablet cellular data,	SCE-06 Vol: 1 Pt. 2	WPSCE06V01Pt01A pp. 34 - 40	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	air cards, printers, plotters, laptops and desktops, and AV for teleconference rooms across the Company. technology adoption handles retirement of computer, storage, network, and operating software assets and the replacement of these assets with hardware and operating software that may be more operationally efficient with improved price performance to leverage new technologies such as the cloud.				
Telecommunication Storm Response O&M	Includes the costs to patrol for and repair storm related damages and toxic waste disposal for Telecommunication lines and facilities. Storm damage can be the result of severe weather conditions such as rain, wind, lightning, and by natural disasters such as earthquakes and forest fires. The storm costs included in this account are: switching, locating and isolating trouble on the system, removal of debris from lines or equipment, and securing damaged sites until repairs have been completed. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-04 Vol: 2	WPSCE04V2 pp. 37 - 43	N/A	N/A
Training and Development	This activity is composed of training and development programs for employees such as job skills, compliance, leadership, and safety training. Costs within these activities include labor to develop, deliver, and attend (seat-time) the training as well as expenses for	SCE-06 Vol: 3 Pt. 1	WPSCE06V3Pt1BkB, pp. 127-132	Physical Security, Employee, Contractor and Public Safety	Asset Protection, Insider Threat Program Enhancement - Information Analysis – Base

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	materials, transportation, meals, travel, lodging, incidentals and division overheads.				and Safety Culture Transformation
Training Delivery and Development - Transmission and Distribution	The cost of labor, materials used, and expenses incurred to develop and deliver training to transmission personnel.	SCE-06 Vol: 3 Pt. 1	WPSCE06V3Pt1BkB pp. 127 - 135	N/A	N/A
Training Seat-Time - Transmission and Distribution	This activity is composed of the seat-time (labor costs) for employees to attend training and informational meetings for distribution employees. Non-labor costs include related costs such as transportation expenses, meals, travel, lodging, and incidental expenses, as well as division overhead.	SCE-06 Vol: 3: Pt. 1	WPSCE06V3Pt1BkB pp. 136 - 144	N/A	N/A
Training, Drills and Exercises	Costs incurred for the training of employee, conducting drills and exercises, for the Company's response capabilities for various hazards, such as earthquakes, wildfires, and cyber attacks.	SCE-04 Vol: 2	WPSCE04V2 pp. 1 - 10	Building Safety	Emergency Management and Facility Emergency Management Program
Transmission Pole Loading Work Order Related Expense	Expenses incurred for work that must be done when capital additions or replacements are being performed. These activities do not qualify for capitalization according to standard accounting guidelines.	SCE-02 Vol: 2	WPSCE02V02A	N/A	N/A
Transmission/Substation Storm Response O&M	Includes the costs to patrol for and repair storm related damages and toxic waste disposal for Transmission lines and substation facilities. Storm damage can be the result of severe weather conditions such as rain, wind, lightning, and by natural disasters such as earthquakes and forest fires. The storm costs included in this account are: switching, locating and isolating trouble on	SCE-04 Vol: 2	WPSCE04V2 pp. 30 - 26	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	the system, removal of debris from lines or equipment, and securing damaged sites until repairs have been completed. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.				

2. GRC Activities Dollar and Unit Variance Calculations

Table XI-36 and Table XI-37 below provide the authorized and recorded costs, and variance and percentage change values for each Other expense activity in terms of dollars and units. These tables also indicate whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table XI-36
Other Expense Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll-up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
All Hazards Assessment, Mitigation and Analytics	Building Safety	Seismic Building Safety Program	No	On-Going	Annual	$2,749	$2,800	$2,973	$8,522	$1,634	$1,298	$862	$3,793	($1,115)	($1,502)	($2,111)	($4,729)	-41%	-54%	-71%	-55%	No
All Hazards Assessment, Mitigation and Analytics	Climate Change	Climate Adaptation & Severe Weather	No	On-Going	Annual	$882	$898	$954	$2,734	$766	$940	$1,080	$2,786	($116)	$42	$126	$52	-13%	5%	13%	2%	No
All Hazards Assessment, Mitigation and Analytics	N/A	Non-RAMP	No	On-Going	Annual	$562	$572	$609	$1,743	$4,067	$1,276	$895	$6,238	$3,505	$703	$286	$4,495	624%	123%	47%	258%	No
All Hazards Assessment, Mitigation and Analytics	N/A	Total	Yes	On-Going	Annual	$4,194	$4,272	$4,536	$13,001	$6,467	$3,514	$2,836	$12,817	$2,273	($758)	($1,699)	($184)	54%	-18%	-37%	-1%	No
Cyber Software License and Maintenance	Cyber Attack	Data Protection	No	On-Going	Annual	$180	$183	$194	$557	$117	$397	$814	$1,329	($63)	$214	$620	$771	-35%	117%	319%	138%	No
Cyber Software License and Maintenance	Cyber Attack	Grid Modernization Cybersecurity	No	On-Going	Annual	$2,100	$2,136	$2,266	$6,502	$1,363	$488	$814	$2,666	($737)	($1,647)	($1,452)	($3,836)	-35%	-77%	-64%	-59%	No
Cyber Software License and Maintenance	Cyber Attack	Interior Protection	No	On-Going	Annual	$1,089	$1,108	$1,175	$3,372	$707	$488	$814	$2,010	($382)	($619)	($361)	($1,362)	-35%	-56%	-31%	-40%	No
Cyber Software License and Maintenance	Cyber Attack	Non-RAMP	No	On-Going	Annual	$0	$0	$0	$0	$528	$0	$0	$528	$528	$0	$0	$528	N/A	N/A	N/A	N/A	No
Cyber Software License and Maintenance	Cyber Attack	Perimeter Defense	No	On-Going	Annual	$2,496	$2,538	$2,693	$7,728	$1,620	$877	$1,425	$3,922	($876)	($1,661)	($1,268)	($3,805)	-35%	-65%	-47%	-49%	No
Cyber Software License and Maintenance	Cyber Attack	SCADA Cybersecurity	No	On-Going	Annual	$139	$141	$150	$430	$90	$99	$204	$393	($49)	($42)	$54	($37)	-35%	-30%	36%	-9%	No
Cyber Software License and Maintenance	N/A	Total	Yes	On-Going	Annual	$6,004	$6,106	$6,479	$18,589	$4,425	$2,351	$4,071	$10,847	($1,579)	($3,756)	($2,407)	($7,742)	-26%	-62%	-37%	-42%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Data Protection	No	On-Going	Annual	$3,716	$3,815	$4,063	$11,595	$1,908	$3,213	$3,806	$8,928	($1,808)	($602)	($257)	($2,667)	-49%	-16%	-6%	-23%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Grid Modernization Cybersecurity	No	On-Going	Annual	$4,497	$4,617	$4,917	$14,032	$2,396	$3,240	$3,754	$9,390	($2,101)	($1,377)	($1,163)	($4,642)	-47%	-30%	-24%	-33%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Interior Protection	No	On-Going	Annual	$3,839	$3,942	$4,198	$11,979	$1,955	$3,090	$3,654	$8,699	($1,884)	($851)	($544)	($3,280)	-49%	-22%	-13%	-27%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Non-RAMP	No	On-Going	Annual	$2,859	$2,936	$3,126	$8,921	$7,003	$2,594	$158	$9,755	$4,144	($342)	($2,968)	$834	145%	-12%	-95%	9%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Perimeter Defense	No	On-Going	Annual	$4,332	$4,448	$4,737	$13,517	$3,511	$6,623	$7,159	$17,293	($821)	$2,175	$2,422	$3,776	-19%	49%	51%	28%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	SCADA Cybersecurity	No	On-Going	Annual	$3,370	$3,460	$3,685	$10,515	$1,751	$1,173	$1,450	$4,374	($1,619)	($2,287)	($2,235)	($6,141)	-48%	-66%	-61%	-58%	No
Cybersecurity Delivery and IT Compliance	N/A	Total	Yes	On-Going	Annual	$22,613	$23,218	$24,726	$70,558	$18,523	$19,933	$19,981	$58,437	($4,090)	($3,285)	($4,745)	($12,120)	-18%	-14%	-19%	-17%	No
Develop and Manage Policy and Initiatives	N/A	N/A	Yes	On-Going	Annual	$16,730	$17,233	$18,385	$52,348	$14,469	$16,021	$17,255	$47,744	($2,261)	($1,212)	($1,131)	($4,604)	-14%	-7%	-6%	-9%	No
Distribution Storm Response O&M	N/A	N/A	Yes	On-Going	Annual	$14,424	$14,917	$16,469	$45,809	$12,580	$14,936	$15,395	$42,911	($1,844)	$19	($1,074)	($2,898)	-13%	0%	-7%	-6%	No
Education, Safety and Operations	N/A	N/A	Yes	On-Going	Annual	$7,736	$7,958	$8,481	$24,176	$5,898	$6,193	$6,438	$18,529	($1,838)	($1,765)	($2,044)	($5,647)	-24%	-22%	-24%	-23%	No
Emergency Preparedness and Response	Climate Change	Emergency Management	No	On-Going	Annual	$2,068	$2,124	$2,262	$6,453	$2,367	$1,657	$2,706	$6,730	$299	($466)	$444	$277	14%	-22%	20%	4%	No
Emergency Preparedness and Response	Climate Change	Fire Management	No	On-Going	Annual	$613	$630	$671	$1,915	$728	$1,400	$188	$2,316	$115	$770	($484)	$401	19%	122%	-72%	21%	No
Emergency Preparedness and Response	N/A	Total	Yes	On-Going	Annual	$2,862	$2,940	$3,131	$8,932	$3,095	$3,058	$2,894	$9,046	$233	$118	($237)	$114	8%	4%	-8%	1%	No

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll-up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff. to Date	$ Variance Explanation Required
Employee and Contractor Safety	Employee, Contractor and Public Safety	Contractor Safety Program	No	On-Going	Annual	$200	$205	$218	$623	$40	$8	$50	$98	($160)	($197)	($168)	($525)	-80%	-96%	-77%	-84%	No
Employee and Contractor Safety	Employee, Contractor and Public Safety	Industrial Ergonomics	No	On-Going	Annual	$15	$15	$16	$47	$0	$0	$0	$0	($15)	($15)	($16)	($47)	-100%	-100%	-100%	-100%	No
Employee and Contractor Safety	N/A	Non-RAMP	No	On-Going	Annual	$4,396	$4,506	$4,796	$13,699	$14,982	$12,745	$9,674	$37,401	$10,586	$8,238	$4,878	$23,702	241%	183%	102%	173%	No
Employee and Contractor Safety	N/A	Total	Yes	On-Going	Annual	$4,611	$4,727	$5,031	$14,369	$15,022	$12,745	$9,724	$37,491	$10,411	$8,018	$4,694	$23,122	226%	170%	93%	161%	No
Enhanced Situational Awareness	Wildfire	N/A	Yes	On-Going	Annual	$3,786	$3,857	$4,095	$11,738	$5,411	$5,534	$8,455	$19,401	$1,625	$1,677	$4,360	$7,663	43%	43%	106%	65%	No
Environmental Management and Development	N/A	N/A	Yes	On-Going	Annual	$10,569	$10,865	$11,576	$33,010	$13,041	$16,531	$15,243	$44,815	$2,472	$5,666	$3,668	$11,805	23%	52%	32%	36%	No
Environmental Programs	N/A	N/A	Yes	On-Going	Annual	$18,358	$19,040	$21,048	$58,445	$14,082	$15,163	$15,702	$44,947	($4,276)	($3,876)	($5,346)	($13,498)	-23%	-20%	-25%	-23%	**Yes**
Ethics and Compliance	N/A	N/A	Yes	On-Going	Annual	$15,283	$15,666	$16,673	$47,621	$12,829	$12,936	$14,655	$40,421	($2,454)	($2,730)	($2,017)	($7,201)	-16%	-17%	-12%	-15%	No
External Communications	Contact w/ Energi.Equip.	Public Outreach	No	On-Going	Annual	$6,821	$6,960	$7,394	$21,175	$6,051	$5,558	$5,583	$17,192	($770)	($1,402)	($1,810)	($3,982)	-11%	-20%	-24%	-19%	No
External Communications	N/A	Non-RAMP	No	On-Going	Annual	$5,155	$5,260	$5,588	$16,003	$5,513	$5,581	$5,006	$16,100	$358	$322	($582)	$97	7%	6%	-10%	1%	No
External Communications	N/A	Total	Yes	On-Going	Annual	$11,976	$12,220	$12,982	$37,177	$11,563	$11,139	$10,589	$33,292	($413)	($1,080)	($2,392)	($3,886)	-3%	-9%	-18%	-10%	No
Facility and Land Operations	Building Safety	Electrical Inspections	No	On-Going	Annual	$1,628	$1,661	$1,768	$5,057	$1,020	$1,481	$1,474	$3,975	($608)	($180)	($294)	($1,082)	-37%	-11%	-17%	-21%	No
Facility and Land Operations	Building Safety	Fire Life Safety Portfolio Assessment	No	On-Going	Annual	$179	$183	$194	$556	$12	$17	$17	$46	($167)	($166)	($177)	($510)	-93%	-91%	-91%	-92%	No
Facility and Land Operations	Employee, Contractor and Public Safety	Office Ergonomics - Core Program	No	On-Going	Annual	$50	$51	$54	$155	$0	$0	$0	$0	($50)	($51)	($54)	($155)	-100%	-100%	-100%	-100%	No
Facility and Land Operations	N/A	Non-RAMP	No	On-Going	Annual	$59,815	$61,010	$64,961	$185,786	$54,205	$60,850	$60,548	$175,602	($5,610)	($161)	($4,413)	($10,183)	-9%	0%	-7%	-5%	No
Facility and Land Operations	N/A	Total	Yes	On-Going	Annual	$61,672	$62,904	$66,977	$191,554	$55,237	$62,348	$62,038	$179,623	($6,435)	($557)	($4,939)	($11,931)	-10%	-1%	-7%	-6%	No
Fire Science and Advanced Modeling	N/A	N/A	Yes	On-Going	Annual	$4,135	$4,205	$4,462	$12,802	$5,770	$7,477	$6,716	$19,964	$1,635	$3,272	$2,255	$7,162	40%	78%	51%	56%	No
Grid Mod Cybersecurity	Cyber Attack	Grid Modernization Cybersecurity	Yes	On-Going	Annual	$652	$665	$706	$2,023	$627	$762	$850	$2,239	($25)	$97	$143	$216	-4%	15%	20%	11%	No
Organizational Support	N/A	N/A	Yes	On-Going	Annual	$3,484	$3,555	$3,815	$10,855	$10,653	$8,181	$3,508	$22,342	$7,169	$4,626	($308)	$11,487	206%	130%	-8%	106%	No
Planning, Continuity and Governance	N/A	N/A	Yes	On-Going	Annual	$1,436	$1,480	$1,578	$4,494	$838	$842	$937	$2,618	($598)	($637)	($641)	($1,876)	-42%	-43%	-41%	-42%	No
PSPS Customer Support	Wildfire	PSPS Protocol and Support Functions	Yes	On-Going	Annual	$13,833	$14,286	$15,818	$43,938	$33,981	$29,026	$35,506	$98,513	$20,148	$14,740	$19,688	$54,575	146%	103%	124%	124%	**Yes**
PSPS Execution	Wildfire	PSPS Protocol and Support Functions	Yes	On-Going	Annual	$14,938	$15,425	$16,633	$46,996	$41,677	$35,216	$55,511	$132,403	$26,739	$19,790	$38,878	$85,407	179%	128%	234%	182%	**Yes**
Public Safety	N/A	N/A	Yes	On-Going	Annual	$655	$674	$718	$2,047	$531	$424	$481	$1,436	($124)	($250)	($237)	($611)	-19%	-37%	-33%	-30%	No
Safety Activities - Transmission & Distribution	Employee, Contractor and Public Safety	Safety Controls	No	On-Going	Annual	$2,266	$2,338	$2,533	$7,137	$0	$0	$0	$0	($2,266)	($2,338)	($2,533)	($7,137)	-100%	-100%	-100%	-100%	No
Safety Activities - Transmission & Distribution	N/A	Non-RAMP	No	On-Going	Annual	$15,680	$16,178	$17,525	$49,383	$7,700	$10,551	$15,559	$33,810	($7,980)	($5,627)	($1,965)	($15,573)	-51%	-35%	-11%	-32%	No

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll-up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
Safety Activities - Transmission & Distribution	N/A	Total	Yes	On-Going	Annual	$17,946	$18,516	$20,057	$56,519	$7,700	$10,551	$15,559	$33,810	($10,246)	($7,965)	($4,498)	($22,709)	-57%	-43%	-22%	-40%	No
Safety Culture Transformation	Employee, Contractor and Public Safety	Safety Culture Transformation	Yes	On-Going	Annual	$2,413	$2,463	$2,617	$7,493	$1,800	$2,325	$2,885	$7,010	($613)	($138)	$268	($483)	-25%	-6%	10%	-6%	No
Software Maintenance and Replacement	N/A	N/A	Yes	On-Going	Annual	$102,261	$104,123	$110,530	$316,914	$84,098	$101,807	$105,737	$291,643	($18,163)	($2,316)	($4,792)	($25,271)	-18%	-2%	-4%	-8%	No
Technology Delivery	N/A	N/A	Yes	On-Going	Annual	$11,920	$12,187	$12,957	$37,065	$6,403	$8,265	$8,381	$23,049	($5,517)	($3,922)	($4,576)	($14,015)	-46%	-32%	-35%	-38%	No
Technology Infrastructure Maintenance and Replacement	N/A	N/A	Yes	On-Going	Annual	$23,055	$23,660	$25,401	$72,117	$20,140	$21,754	$24,193	$66,087	($2,915)	($1,907)	($1,208)	($6,030)	-13%	-8%	-5%	-8%	No
Telecommunication Storm Response O&M	N/A	N/A	Yes	On-Going	Annual	$23	$23	$25	$71	$122	$21	$91	$235	$99	($2)	$66	$163	430%	-8%	267%	230%	No
Training and Development	Employee, Contractor and Public Safety	Safety Culture Transformation	No	On-Going	Annual	$3,956	$4,052	$4,316	$12,324	$1,223	$1,551	$2,875	$5,649	($2,733)	($2,501)	($1,441)	($6,675)	-69%	-62%	-33%	-54%	No
Training and Development	N/A	Non-RAMP	No	On-Going	Annual	$16,268	$16,661	$17,749	$50,678	$14,274	$15,878	$15,569	$45,721	($1,994)	($784)	($2,180)	($4,958)	-12%	-5%	-12%	-10%	No
Training and Development	N/A	Total	Yes	On-Going	Annual	$20,428	$20,922	$22,287	$63,638	$15,509	$17,455	$18,473	$51,438	($4,919)	($3,467)	($3,814)	($12,200)	-24%	-17%	-17%	-19%	No
Training and Development	Physical Security	Asset Protection	No	On-Going	Annual	$21	$22	$23	$65	$5	$11	$12	$28	($16)	($11)	($11)	($38)	-76%	-49%	-50%	-58%	No
Training and Development	Physical Security	Insider Threat Program Enhancement - Information Analysis - Base	No	On-Going	Annual	$183	$187	$200	$570	$7	$16	$17	$41	($176)	($171)	($182)	($529)	-96%	-91%	-91%	-93%	No
Training Delivery and Development - Transmission and Distribution	N/A	N/A	Yes	On-Going	Annual	$18,899	$19,501	$21,219	$59,620	$14,409	$15,824	$20,428	$50,661	($4,490)	($3,677)	($792)	($8,959)	-24%	-19%	-4%	-15%	No
Training Seat-Time - Transmission and Distribution	N/A	N/A	Yes	On-Going	Annual	$28,301	$29,186	$31,515	$89,001	$18,954	$21,234	$33,335	$73,523	($9,347)	($7,952)	$1,820	($15,478)	-33%	-27%	6%	-17%	No
Training, Drills and Exercises	Building Safety	Emergency Management	No	On-Going	Annual	$2,100	$2,150	$2,286	$6,536	$1,199	$1,343	$1,478	$4,020	($901)	($807)	($808)	($2,516)	-43%	-38%	-35%	-38%	No
Training, Drills and Exercises	Building Safety	Facility Emergency Management Program	No	On-Going	Annual	$260	$266	$283	$809	$645	$804	$839	$2,288	$385	$538	$556	$1,479	148%	202%	197%	183%	No
Training, Drills and Exercises	N/A	Total	Yes	On-Going	Annual	$2,359	$2,415	$2,568	$7,342	$1,844	$2,147	$2,318	$6,308	($515)	($268)	($251)	($1,034)	-22%	-11%	-10%	-14%	No
Transmission Pole Loading Work Order Related Expense	N/A	N/A	Yes	On-Going	Annual	$278	$286	$315	$878	$19	$1,296	$665	$1,979	($259)	$1,010	$350	$1,101	-93%	354%	111%	125%	No
Transmission/Substation Storm Response O&M	N/A	N/A	Yes	On-Going	Annual	$2,092	$2,152	$2,341	$6,585	$1,119	$2,813	$3,818	$7,749	($973)	$660	$1,477	$1,164	-47%	31%	63%	18%	No
Physical Security	Physical Security	Asset Protection and Insider Threat Program Enhancement - Information Analysis - Base	Yes	On-Going	Annual	$24,995	$25,511	$27,106	$77,612	$21,826	$21,575	$22,420	$65,821	($3,169)	($3,936)	($4,686)	($11,791)	-13%	-15%	-17%	-15%	No

Table XI-37
Other Expense Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
All Hazards Assessment, Mitigation and Analytics	Building Safety	Seismic Building Safety Program	Unable to identify a single unit due to multiple activities supporting this activity																	No
All Hazards Assessment, Mitigation and Analytics	Climate Change	Climate Adaptation & Severe Weather	Unable to identify a single unit due to multiple activities supporting this activity																	No
All Hazards Assessment, Mitigation and Analytics	N/A	Non-RAMP	Unable to identify a single unit due to multiple activities supporting this activity																	No
All Hazards Assessment, Mitigation and Analytics	N/A	Total	Unable to identify a single unit due to multiple activities supporting this activity																	No
Cyber Software License and Maintenance	Cyber Attack	Data Protection	Unable to identify a single unit due to multiple activities supporting this activity.																	No
Cyber Software License and Maintenance	Cyber Attack	Grid Modernization Cybersecurity																		No
Cyber Software License and Maintenance	Cyber Attack	Interior Protection																		No
Cyber Software License and Maintenance	Cyber Attack	Non-RAMP																		No
Cyber Software License and Maintenance	Cyber Attack	Perimeter Defense																		No
Cyber Software License and Maintenance	Cyber Attack	SCADA Cybersecurity																		No
Cyber Software License and Maintenance	N/A	Total																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Data Protection	Unable to identify a single unit due to multiple activities supporting this activity.																	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Grid Modernization Cybersecurity																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Interior Protection																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Non-RAMP																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Perimeter Defense																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	SCADA Cybersecurity																		No
Cybersecurity Delivery and IT Compliance	N/A	Total																		No
Develop and Manage Policy and Initiatives	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Distribution Storm Response O&M	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Education, Safety and Operations	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Emergency Preparedness and Response	Climate Change	Emergency Management	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Emergency Preparedness and Response	Climate Change	Fire Management	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Emergency Preparedness and Response	N/A	Total	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Employee and Contractor Safety	Employee, Contractor and Public Safety	Contractor Safety Program	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Employee and Contractor Safety	Employee, Contractor and Public Safety	Industrial Ergonomics																		No
Employee and Contractor Safety	N/A	Non-RAMP																		No
Employee and Contractor Safety	N/A	Total																		No
Enhanced Situational Awareness	Wildfire	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Environmental Management and Development	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Environmental Programs	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Ethics and Compliance	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement																	No
External Communications	Contact with Energized Equipment	Public Outreach	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
External Communications	N/A	Non-RAMP																		No
External Communications	N/A	Total																		No
Facility and Land Operations	Building Safety	Electrical Inspections	The variety of projects in this category makes it infeasible to identify a single unit of measurement.																	No
Facility and Land Operations	Building Safety	Fire Life Safety Portfolio Assessment																		No
Facility and Land Operations	Employee, Contractor and Public Safety	Office Ergonomics - Core Program																		No
Facility and Land Operations	N/A	Non-RAMP																		No
Facility and Land Operations	N/A	Total																		No
Fire Science and Advanced Modeling	N/A	N/A	The variety of projects in this category makes it infeasible to identify a single unit of measurement.																	No
Grid Mod Cybersecurity	Cyber Attack	Grid Modernization Cybersecurity	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Organizational Support	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Planning, Continuity and Governance	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
PSPS Customer Support	Wildfire	PSPS Protocol and Support Functions	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
PSPS Execution	Wildfire	PSPS Protocol and Support Functions	PSPS Execution is comprised of several subactivities that are not unit based and will be unable to identify a single unit due to multiple activities in this workpaper.																	No
Public Safety	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Safety Activities - Transmission & Distribution	Employee, Contractor and Public Safety	Safety Controls	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AG	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Safety Activities - Transmission & Distribution	N/A	Non-RAMP																		No
Safety Activities - Transmission & Distribution	N/A	Total																		No
Safety Culture Transformation	Employee, Contractor and Public Safety	Safety Culture Transformation	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Software Maintenance and Replacement	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Technology Delivery	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Technology Infrastructure Maintenance and Replacement	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Telecommunication Storm Response O&M	N/A	N/A	Storm events are driven by weather and other environmental factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast for Storm Response is based on a five-year average of recorded expenditures and is not unit based.																	No
Training and Development	Employee, Contractor and Public Safety	Safety Culture Transformation	The variety of non-labor activities in this category makes it infeasible to identify a single unit of measurement.																	No
Training and Development	N/A	Non-RAMP																		No
Training and Development	N/A	Total																		No
Training and Development	Physical Security	Asset Protection																		No
Training and Development	Physical Security	Insider Threat Program Enhancement - Information Analysis - Base																		No
Training Delivery and Development - Transmission and Distribution	N/A	N/A	The variety of non-labor activities in this category makes it infeasible to identify a single unit of measurement. (																	No
Training Seat-Time - Transmission and Distribution	N/A	N/A	The variety of non-labor activities in this category makes it infeasible to identify a single unit of measurement.																	No
Training, Drills and Exercises	Building Safety	Emergency Management	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Training, Drills and Exercises	Building Safety	Facility Emergency Management Program																		No
Training, Drills and Exercises	N/A	Total																		No
Transmission Pole Loading Work Order Related Expense	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Transmission/Substation Storm Response O&M	N/A	N/A	Storm events are driven by weather and other environmental factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast for Storm Response is based on a historical average and is not unit based.																	No
Physical Security	Physical Security	Asset Protection and Insider Threat Program Enhancement - Information Analysis - Base	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No

3. Variance Explanations

Table XI-38 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table XI-38
Other Expense Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Unit**	**Variance Explanation**
Environmental Programs	No	**Yes**	No	Environmental Services incurred an under-run of $5.3 million for GRC Activity Environmental Programs for 2023 authorized versus 2023 recorded spend. The Environmental Services Business Planning Element (BPE) includes two GRC activities: Environmental Management & Development and Environmental Programs. In 2023, Environmental Programs recorded lower labor costs primarily due to allocating more staff to Environmental Management & Development versus Environmental Programs work activities. This resulted in higher labor spend to Environmental Management & Development and lower labor spend to Environmental Programs in 2023 and is reflected by an over-run in 2023 recorded spend for Environmental Management & Development.
PSPS Customer Support	**Yes**	**Yes**	No	SCE's 2023 incremental spending on PSPS Customer Support was driven by new requirements adopted by the Legislature and/or Commission for sub-activities, such as the Critical Care Backup Battery (CCBB) program and providing communications in multiple languages, after SCE prepared and submitted its 2021 GRC. Further, as required by the Commission.[35] SCE met with and took recommendations from representatives of state agencies and CBOs to mitigate the impacts of PSPS de-energizations on SCE's customers, including those most vulnerable, after the preparation and submission of the 2021 GRC. Because these recommendations and requirements were issued after SCE finalized its 2021 GRC forecast, they were not included in SCE's 2021 GRC.
PSPS Execution	Yes	Yes	No	Similar to 2022, SCE spent more than authorized for PSPS Execution primarily due to approximately $35 million in aerial suppression costs in 2023. These costs were not forecasted or included in SCE's 2021 GRC but are important to SCE's wildfire mitigation efforts. In 2023, SCE established a funding agreement with each fire agency, pursuant to which SCE funded the fixed lease and daily standby costs for the program while the fire agencies were entirely responsible for funding all flight time, operational costs, and any other costs incurred in

[35] *See* D.21-06-034, p. 114.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	$	% / $	Unit	Variance Explanation
				the lease and service agreements between the county fire agencies and their providers (i.e., all variable and non-standby costs). In addition, SCE spent approximately $3 million more than authorized in 2023 for the PSPS Execution Incident Management Team (IMT). SCE established and trained a dedicated PSPS IMT team staffed to respond to PSPS events and advance operational protocols and enhancements. In 2023, the PSPS IMT was activated for eight PSPS events and de-energization was required in five of those events.

4. Activity Status

Table XI-39 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table XI-39
Other Expense Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
All Hazards Assessment, Mitigation and Analytics	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Cyber Software License and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Cybersecurity Delivery and IT Compliance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Develop and Manage Policy and Initiatives	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Distribution Storm Response O&M	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Education, Safety and Operations	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Emergency Preparedness and Response	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Employee and Contractor Safety	On-Going	Annual	Over	On-Target	Over	Emergent	SCE is spending above authorized from 2021 - 2023 driven by essential COVID costs and/or associated requirements from Cal/OSHA, California Department of Public Health, and local requirements, which were not included in GRC authorized. However, the impact of those costs is subsiding.
Enhanced Situational Awareness	On-Going	Annual	Over	On Target	Over	Emergent / Expanded	SCE is generally proceeding as planned, however SCE incurred incremental spend in 2021 - 2023 because of the need for increased weather stations, HD camera deployment, and necessary staffing relative to SCE's estimates in 2019 when the 2021 GRC was prepared. These incremental costs emerged because of lessons learned and experience gained with these sub-activities after the 2021 GRC submission.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Environmental Management and Development	On-Going	Annual	On Target	On Target	Over	Proceeding as Planned	The Environmental Services Business Planning Element (BPE) includes two GRC activities: Environmental Management & Development and Environmental Programs. On an annual basis SCE may allocate more staff to one of the activities to address the required workload. Overall, the two activities together are spending within 2% of authorized.
Environmental Programs	On-Going	Annual	On Target	On Target	Under	Proceeding as Planned	
Ethics and Compliance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
External Communications	On-Going	Annual	On Target	On Target	On Target	Proceeding as Planned	SCE is generally proceeding as planned.
Facility and Land Operations	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Fire Science and Advanced Modeling	On-Going	Annual	Over	On Target	Over	Expanded / Emergent	After SCE prepared its 2021 GRC forecast in 2019, it determined it had to expand its modeling and analytics capabilities further than it had originally anticipated. 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.
Grid Mod Cybersecurity	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Organizational Support	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Physical Security	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Planning, Continuity and Governance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
PSPS Customer Support	On-Going	Annual	On-Target	On-Target	Over	Emergent	As noted in our variance explanation, SCE exceeded the GRC authorized amount primarily due to the Critical Care Backup Battery (CCBB) program, which was not included in the 2021 GRC request. The CCBB program addresses the needs of SCE's income-qualified Medical Baseline (MBL) customers residing in high fire risk areas (HFRA) by fully funding the cost of a battery-powered portable backup solution to operate medical equipment during PSPS events.
PSPS Execution	On-Going	Annual	On-Target	On-Target	Over	Emergent	As noted in our variance explanation, SCE spent more than authorized for PSPS Execution due to aerial suppression costs. These costs were not forecasted or included in SCE's 2021 GRC but are crucial to our wildfire mitigation efforts.
Public Safety	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Safety Activities - Transmission & Distribution	On-Going	Annual	Under	Under	Under	Partially Delayed	SCE has begun increasing the number of in-person meetings and events as COVID protocols progressively relaxed over this GRC cycle; however, the number of in-person meetings and events was still lower than anticipated compared to the 2021 GRC. However, the COVID impacts are subsiding as seen by the increase in year over year spending from 2021 to 2023.
Safety Culture Transformation	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Software Maintenance and Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Technology Delivery	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Technology Infrastructure Maintenance and Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Telecommunication Storm Response O&M	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	Storm events are driven by weather and other environmental factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast for Storm Response is based on a five-year average and SCE is currently experiencing costs above that average but the overall work is proceeding as planned.
Training and Development	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Training Delivery and Development - Transmission and Distribution	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Training Seat-Time - Transmission and Distribution	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in last year's RSAR, the longstanding COVID-19 impacts began to subside in 2022 and SCE forecasted a return to a more traditional state in 2023 and beyond. This return was marked by spending over authorized in 2023.
Training, Drills and Exercises	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Transmission Pole Loading Work Order Related Expense	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Transmission/Substation Storm Response O&M	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

For the Other capital activities that are SAR-eligible, Table XI-40 below provides the 2021 GRC testimony citation and activity description and indicates whether there are any RAMP controls or mitigations associated with that activity.

Table XI-40
Other Capital Expenditure Category Activity Description

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Air Operations	Aircraft Operations includes capital supporting aircraft components, overhauls, tools and helicopter lease buy-outs. Aircraft plays a critical role in SCE's system reliability by gathering critical information about electric infrastructure situated in locations that are remote and present significant challenges for access by traditional means. Their use also mitigates safety risks to workers and damages to vehicles and equipment that would otherwise be employed to inspect infrastructure at such locations.	SCE-06 Vol: 5	WPSCE06V5BKC pp. 10 - 17	N/A	N/A
All Hazards Assessment, Mitigation and Analytics	All Hazards, Assessment, Mitigation & Analytics includes costs to assess and mitigate hazards such as seismic events, climate change, severe weather and other hazards.	SCE-04 Vol: 1	WPSCE04V1 pp. 21 - 40	Building Safety	Seismic Building Safety Program
Asset Reliability Risk Analytics	Asset Reliability Risk Analytics includes costs for predicting wildfire risk of an asset in order to prioritize work repairs and replacements to minimize wildfire ignitions.	SCE-04 Vol: 5	N/A - SCE did not request any expenditures in 2021	N/A	N/A
Climate Adaptation and Severe Weather	SCE's Climate Adaptation and Severe Weather Program involves a cross functional team coordinated by the Business Resiliency department to facilitate and develop a consistent approach across the company to analyze climate hazards, identify and implement adaptive measures. Program activities also include analyzing and assessing climate change impacts and related climate science and data to develop a foundational	SCE-04 Vol: 1	WPSCE04V1 pp. 41 - 42	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	understanding of those impacts and how to address those impacts.				
Communications	SCE's new Communications System is a mission-critical component of the Grid Modernization Program. It provides the essential capability to communicate cyber-securely and in real-time between grid devices (including DERs), distribution substations, and SCE's operations control centers. This communications capability is a direct enabler for various grid management functions, including real-time situational awareness, analyzing and resolving grid reliability issues, and integrating and controlling DERs. SCE's new communications system will also enable secure integration with DER aggregators and other 3rd parties, which will support the use of DERs to provide reliability services to the distribution system. The Communications Program includes four components: (1) FAN: The new wireless radio network that will replace SCE's aging NetComm system. (2) Distribution System Efficiency Enhancement Program (DSEEP): Support of SCE's NetComm system to ensure it supports SCE's communications needs until the new FAN is fully deployed, (3) CSP: The computing platform that enables secure communication between the operations control centers, substation equipment, and distribution circuit devices and (4) WAN: The fiber optic cable that provides the crucial communications link between the FAN, CSP, substations and SCE's operations control centers.	SCE-02 Vol: 4 Pt. 1	WPSCE02V4P1ChIIBkA pp. 145 -160	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Communications Equipment	Communication Equipment includes emergency satellite phone systems at all SCE-owned and contracted generation station locations in its portfolio. Integration of these emergency phone systems allows SCE to contact personnel at critical generation resources facilitating a quick response to emergencies. Specialized communication data links are installed at every generation resource to meet contractual obligations and CAISO telemetry requirements.	SCE-05 Vol: 2	WPSCE05V2, pp. 7-8	N/A	N/A
CRE Project Management	CRE Project Management includes large capital projects in the SCE facility portfolio including infrastructure upgrades, facility repurpose, and substation reliability upgrades.	SCE-06 Vol: 5	WPSCE06V5BKA, pp. 235 - 241	Employee Safety	Office Ergonomics (CORE Program)
Cybersecurity Delivery and IT Compliance	This activity includes expenditures associated with delivering cybersecurity services that consists of multiple layers of protection and proactive vulnerability testing to prevent unauthorized access and control of SCE systems, as well as monitoring compliance with key cybersecurity related regulations. This activity also includes expenditures related to SCE's ongoing cybersecurity five capital programs: (1) Perimeter Defense (2) Interior Defense (3) Data Protection (4) SCADA Cybersecurity (5) NERC CIP Compliance.	SCE-04 Vol: 3	WPSCE04V3 pp. 86 - 96	Cyber Attack	Data Protection, Interior Protection, Perimeter Defense and SCADA Cybersecurity
Enhanced Situational Awareness	This activity includes costs associated with the Situational Awareness Center, primarily to improve SCE's ability to monitor weather and forest situations by deploying new weather stations and high definition cameras.	SCE-04 Vol: 5	WPSCE04V5Pt2 pp. 71 - 77	Wildfire / Climate Change	Situational Awareness
Environmental Programs	This activity involves securing and demolishing wells no longer in use in accordance with	SCE-06 Vol: 4	WPSCE06V4 pp. 17 - 22	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	applicable environmental, safety, regulatory, and engineering standards. SCE developed the Well Decommission Program in 2013 to address the environmental, health and safety requirements for the safety of the public and protection of the environment. It also includes programmatic permits.				
Facility Asset Management	The Facility Capital Management Program includes expenditures for periodic updates to building systems that are either past their useful life (e.g., HVAC, roof), or modifications due to regulatory or compliance requirements (e.g. fire systems).	SCE-06 Vol: 5	WPSCE06V5BkB, pp. 179 - 214	Building Safety	Fire Life Safety Portfolio Assessment, Electrical Inspections
Fire Science and Advanced Modeling	Fire Science and Advanced Modeling includes costs for gathering and the integration of science and technology to support wildfire mitigation across the SCE service territory. The sub-activities are: Advanced Modeling Computer Hardware, Fuel Sampling Program, Remote Sensing Satellite, etc.	SCE-04 Vol: 5	WPSCE04V5Pt2 pp. 93 - 101	N/A	N/A
Fleet Asset Management	Fleet Asset Management (FAM) includes the planning and strategy of vehicle replacements, dispositions and additions, and the design and delivery of SCE fleet vehicle assets, fleet telematics administration, and vehicle rentals. FAM covers both long- and short-term planning for the fleet and evaluates the impact of financial, design and regulatory requirements to support SCE's fleet needs accordingly. This includes annual vehicle replacements and additions planned through real-time evaluation of organizational requirements. These efforts also manage emerging vehicle resource needs and disposal of vehicles	SCE-06 Vol: 5	WPSCE06V5BKC pp. 20 -22	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	when they have reached the end of useful life or are rendered obsolete by regulation. The FAM team also includes several technical and engineering functions. This unit creates, maintains, and updates vehicle specifications, incorporates work method requirements, prescribes safety standards, fleet electrification options, and fuel efficiency and emissions goals, and addresses regulatory compliance requirements in vehicle designs. The team also analyzes product failures and ways to mitigate such failures, and works with vehicle manufacturers to deliver useful and dependable products and solutions to SCE.				
Fleet Operations and Maintenance	Fleet Operations and Maintenance (FOM) performs maintenance, repairs, and fueling tasks to uphold the safety and dependability of SCE's vehicles and equipment and comply with applicable regulations. FOM manages SCE's 41 vehicle maintenance facilities supporting approximately 6,100 vehicles and equipment. FOM also includes the Crane Operations unit, which plays an integral role in constructing and maintaining SCE's infrastructure. Crane Operations provides 24-hour support for SCE crews throughout our 50,000 square mile service territory. This is accomplished with five SCE-owned cranes and a network of external crane vendors to serve the territory. FOM operates under a "fit to need" model, which optimizes the types and capabilities of cranes owned by SCE for work assignment to maximize SCE crane utilization and minimize use of typically higher cost external vendors.	SCE-06 Vol: 5	WPSCE06V5BKC pp. 23 - 24	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
Grid Management System	SCE's Grid Management System (GMS) is an advanced software platform that will integrate multiple systems designed to manage our increasingly dynamic grid. It will replace the legacy DMS, which was deployed in 2010, has exceeded its useful life, and is no longer supported by the vendor. The GMS will also replace the existing OMS to provide an integrated grid management functionality. The Advanced Distribution Management System (ADMS), as one of the GMS systems, will provide combined DMS/OMS functionality.	SCE-02 Vol: 4 Pt. 1	WPSCE02V4P1ChIIBkA pp. 161 - 168	N/A	N/A
Grid Mod Cybersecurity	Cybersecurity programs related to the implementation of the Grid Modernization Program. This includes addressing the comprehensive security and data protection needs of all new infrastructure and application assets being added through the program including the following: Field Area Network (FAN), Common Substation Platform (CSP), Wide Area Network (WAN), Grid Management System (GMS), DRP External Portal (DRPEP), and Grid Interconnection Processing Tool (GIPT). This work addresses the critical need for modern and robust cybersecurity measures and controls by detecting, isolating, fixing or removing, and restoring electric distribution grid systems and devices as quickly and efficiently as possible. The program seeks to accomplish this through a combination of infrastructure, applications, and threat intelligence initiatives.	SCE-04 Vol: 3	WPSCE04V3 pp. 123 - 126	Cyber Attack	Grid Modernization Cybersecurity
Laboratory Operations	The Grid Technology Laboratories allow SCE to safely evaluate, test, and pilot new and emerging	SCE-02 Vol: 4 Pt. 1	WPSCE02V4P1ChIII-IVBkB pp. 8 - 29	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	technologies that support SCE in complying with public policies such as modernizing the grid, providing clean energy, enabling customer choice, and integrating distributed resources. The facilities also provide a means to test newer versions of existing technologies to support increased operating capabilities when we are replacing equipment that has reached the end of its lifecycle. SCE maintains and operates test facilities at three locations in southern California: the Westminster Test Facility in Westminster, the Pomona Test Facility in Pomona, and the Equipment Demonstration and Evaluation Facility (EDEF) located in Westminster.				
Oil Containment Diversion System	The goal of this program is to prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil. Maintaining/repairing these containment/security structures is the responsibility of the site manager.	SCE-02 Vol: 3	WPSCE02V3 – pp. 246 - 247	N/A	N/A
PSPS Customer Support	Technology investments to improve the PSPS programs and protocols.	N/A	SCE did not request any capital associated with this activity in the TY 2021 GRC.	Wildfire	PSPS Protocol and Support Functions
Software Maintenance and Replacement	The Software Maintenance and Replacement work activity maintains SCE's operating software assets through on-premise license, cloud, subscription, and maintenance agreements. Operating Software includes operating systems, business intelligence systems, database management systems, cross-system integration tools, IT monitoring tools and end-user productivity and collaboration software which enable business applications to take	SCE-06 Vol: 1 Pt. 1	WPSCE06V01Pt01A pp. 43 - 47, 68 - 74	N/A	N/A

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
	advantage of the underlying hardware features and functions.				
Substation Switchrack Rebuild	This capital activity relates to rebuilding existing substation racks based on conditions found in the field, as well as through various analyses including structural and seismic analysis. A substation switchrack is the skeletal/structural system used to support substation assets such as circuit breakers, disconnects, and conductors.	SCE-02 Vol: 3	WPSCE02V3 pp. 171 - 173	N/A	N/A
Technology Infrastructure Maintenance and Replacement	The Technology Infrastructure Maintenance and Replacement activity includes expenditure for: (1) data center infrastructure, (2) end user computing maintenance, and (3) technology adoption. Support for SCE's data centers involves procuring, installing, and maintenance of all enterprise data center hardware infrastructure. End user computing maintenance covers the performance management of SCE's Service Desk that resolves approximately 204,000 service tickets per year as well as management of SCE's smart phone plans, tablet cellular data, air cards, printers, plotters, laptops and desktops, and AV for teleconference rooms across the Company. Technology adoption relates to retirement of computer, storage, network, and operating software assets and the replacement of these assets with hardware and operating software that may be more operationally efficient with improved price performance to leverage new technologies such as the cloud.	SCE-06 Vol: 1 Pt. 1	WPSCE06V01Pt01A pp. 82 - 88, 92 - 105, 125 - 127	N/A	N/A
Technology Solutions	Costs incurred for capitalized software solutions in support of OU work efforts at SCE.	SCE-06 Vol: 1 Pt. 2	WPSCE06V01Pt02A pp. 10 - 228	Physical Security	Non-Electric Facilities/Protection of Major Business Functions,

A	B	C	D	E	F
GRC Activity	**GRC 2021 Activity Description**	**GRC Testimony Location**	**GRC Workpaper Reference**	**RAMP Risk**	**RAMP Control/Mitigation**
					Protection of Generation Capabilities

2. GRC Activities Variance Calculations

Table XI-41 and Table XI-42 below provide the authorized, recorded, variance and percentage change values for each Other expenditure category activity in terms of dollars and units. These tables also indicate whether a variance explanation was triggered based on the established thresholds for each GRC activity.

Table XI-41
Other Capital Expenditure Category Activity Dollar Variance Calculations

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	**RAMP Risk**	**RAMP Control / Mitigation**	**Roll -up**	**Project Life (years)**	**Project Year**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Auth. Imputed Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Actual Cost to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**Cost Diff. to Date ($)**	**Year 1 - 2021**	**Year 2 - 2022**	**Year 3 - 2023**	**% Diff. to Date**	**$ Variance Explanation Required**
Air Operations	N/A	N/A	Yes	On-Going	Annual	$798	$798	$798	$2,394	$870	$1,176	$1,760	$3,807	$72	$378	$962	$1,413	9%	47%	121%	59%	No
All Hazards Assessment, Mitigation and Analytics	Building Safety	Seismic Building Safety Program	No	On-Going	Annual	$5,369	$5,369	$5,369	$16,107	$3,761	$10,194	$15,222	$29,177	($1,608)	$4,825	$9,853	$13,070	-30%	90%	184%	81%	No
All Hazards Assessment, Mitigation and Analytics	N/A	Non-RAMP	No	On-Going	Annual	$29,267	$29,267	$29,267	$87,801	$26,052	$22,178	$22,134	$70,365	($3,215)	($7,089)	($7,133)	($17,436)	-11%	-24%	-24%	-20%	No
All Hazards Assessment, Mitigation and Analytics	N/A	Total	Yes	On-Going	Annual	$34,636	$34,636	$34,636	$103,908	$29,813	$32,372	$37,356	$99,542	($4,823)	($2,264)	$2,720	($4,367)	-14%	-7%	8%	-4%	No
Asset Reliability Risk Analytics	N/A	N/A	Yes	Complete d	Complete d	$0	$0	$0	$0	$1,161	$0	$0	$1,161	$1,161	$0	$0	$1,161	N/A	N/A	N/A	N/A	No
Climate Adaptation and Severe Weather	N/A	N/A	Yes	On-Going	Annual	$1,393	$1,393	$1,393	$4,178	$72	$571	$1,246	$1,889	($1,321)	($821)	($147)	($2,289)	-95%	-59%	-11%	-55%	No
Communication s	N/A	N/A	Yes	On-Going	Annual	$74,107	$74,107	$74,107	$222,321	$15,086	$27,643	$62,336	$105,065	($59,021)	($46,464)	($11,771)	($117,256)	-80%	-63%	-16%	-53%	No
Communication s Equipment	N/A	N/A	Yes	On-Going	Annual	$1,398	$1,398	$1,398	$4,193	$676	$688	$593	$1,957	($722)	($710)	($805)	($2,237)	-52%	-51%	-58%	-53%	No
CRE Project Management	Employe e Safety	Office Ergonomics (CORE Program)	No	On-Going	Annual	$2,512	$2,512	$2,512	$7,536	$1,975	$2,622	$2,936	$7,533	($537)	$110	$424	($3)	-21%	4%	17%	0%	No
CRE Project Management	N/A	Non-RAMP	No	On-Going	Annual	$81,563	$81,563	$81,563	$244,689	$46,537	$44,850	$0	$91,387	($35,026)	($36,712)	($81,563)	($153,301)	-43%	-45%	-100%	-63%	Yes
CRE Project Management	N/A	Total	Yes	On-Going	Annual	$84,075	$84,075	$84,075	$252,225	$48,512	$47,472	$76,886	$172,870	($35,563)	($36,603)	($7,189)	($79,355)	-42%	-44%	-9%	-31%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Data Protection	No	On-Going	Annual	$8,776	$8,776	$8,776	$26,328	$7,153	$10,767	$13,123	$31,043	($1,623)	$1,991	$4,347	$4,715	-18%	23%	50%	18%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Interior Protection	No	On-Going	Annual	$8,302	$8,302	$8,302	$24,906	$13,065	$5,172	$11,569	$29,805	$4,763	($3,130)	$3,267	$4,899	57%	-38%	39%	20%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Non-RAMP	No	On-Going	Annual	$5,610	$5,610	$5,610	$16,830	$71	$2,157	$105	$2,333	($5,539)	($3,453)	($5,505)	($14,497)	-99%	-62%	-98%	-86%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Perimeter Defense	No	On-Going	Annual	$38,479	$38,479	$38,479	$115,437	$31,083	$46,395	$38,867	$116,345	($7,396)	$7,916	$388	$908	-19%	21%	1%	1%	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	SCADA Cybersecurity	No	On-Going	Annual	$2,613	$2,613	$2,613	$7,839	$2,290	$2,342	$392	$5,024	($323)	($271)	($2,221)	($2,815)	-12%	-10%	-85%	-36%	No
Cybersecurity Delivery and IT Compliance	N/A	Total	Yes	On-Going	Annual	$63,779	$63,779	$63,779	$191,337	$53,663	$66,833	$64,056	$184,552	($10,116)	$3,054	$277	($6,785)	-16%	5%	0%	-4%	No
Enhanced Situational Awareness	Wildfire	Situational Awareness	Yes	On-Going	Annual	$0	$0	$0	$0	$5,607	$3,514	$2,170	$11,291	$5,607	$3,514	$2,170	$11,291	N/A	N/A	N/A	N/A	No
Environmental Programs	N/A	N/A	Yes	On-Going	Annual	$1,721	$1,721	$1,721	$5,163	$429	$839	$1,185	$2,454	($1,292)	($882)	($536)	($2,710)	-75%	-51%	-31%	-52%	No
Facility Asset Management	Building Safety	Electrical Inspections	No	On-Going	Annual	$1,000	$1,000	$1,000	$3,000	$1,942	$2,814	$888	$5,644	$942	$1,814	($112)	$2,644	94%	181%	-11%	88%	No

A	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
						Authorized Imputed Annual Cost ($000s)				Actual Annual Cost ($000s)				Annual Cost Difference ($000s)				Annual Percent Cost Difference (%)				
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Roll -up	Project Life (years)	Project Year	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Auth. Imputed Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Cost to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Cost Diff. to Date ($)	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Diff, to Date	$ Variance Explanation Required
Facility Asset Management	Building Safety	Fire Life Safety Portfolio Assessment	No	On-Going	Annual	$1,000	$1,000	$1,000	$3,000	$688	$1,549	$1,086	$3,323	($312)	$549	$86	$323	-31%	55%	9%	11%	No
Facility Asset Management	N/A	Non-RAMP	No	On-Going	Annual	$56,042	$56,042	$56,042	$168,126	$65,635	$74,098	$58,636	$198,369	$9,593	$18,056	$2,594	$30,243	17%	32%	5%	18%	No
Facility Asset Management	N/A	Total	Yes	On-Going	Annual	$58,042	$58,042	$58,042	$174,126	$68,265	$78,461	$60,610	$207,336	$10,223	$20,419	$2,568	$33,210	18%	35%	4%	19%	No
Fire Science and Advanced Modeling	N/A	N/A	Yes	On-Going	Annual	$1,129	$0	$0	$1,129	$2,340	$766	$291	$3,398	$1,211	$766	$291	$2,269	107%	N/A	N/A	201%	No
Fleet Asset Management	N/A	N/A	Yes	On-Going	Annual	$2,190	$2,190	$2,190	$6,571	$1,444	$938	$1,958	$4,340	($746)	($1,252)	($232)	($2,231)	-34%	-57%	-11%	-34%	No
Fleet Operations and Maintenance	N/A	N/A	Yes	On-Going	Annual	$512	$512	$512	$1,536	$510	$521	$525	$1,556	($2)	$9	$13	$20	0%	2%	3%	1%	No
Grid Management System	N/A	N/A	Yes	On-Going	Annual	$43,633	$43,633	$43,633	$130,900	$67,704	$50,137	$33,452	$151,293	$24,071	$6,504	($10,181)	$20,394	55%	15%	-23%	16%	**Yes**
Grid Mod Cybersecurity	Cyber Attack	Grid Modernizatio n Cybersecurity	Yes	On-Going	Annual	$46,330	$46,330	$46,330	$138,990	$35,256	$29,018	$42,190	$106,464	($11,074)	($17,312)	($4,141)	($32,526)	-24%	-37%	-9%	-23%	No
Laboratory Operations	N/A	N/A	Yes	On-Going	Annual	$2,227	$2,227	$2,227	$6,680	$1,937	$3,778	$10,620	$16,335	($290)	$1,551	$8,393	$9,655	-13%	70%	377%	145%	No
Oil Containment Diversion System	N/A	N/A	Yes	On-Going	Annual	$403	$403	$403	$1,210	$1,162	$699	$840	$2,702	$759	$296	$437	$1,492	188%	73%	108%	123%	No
PSPS Customer Support	Wildfire	PSPS Protocol and Support Functions	Yes	On-Going	Annual	$0	$0	$0	$0	$11,217	$13,266	$8,835	$33,319	$11,217	$13,266	$8,835	$33,319	N/A	N/A	N/A	N/A	No
Software Maintenance and Replacement	N/A	N/A	Yes	On-Going	Annual	$62,012	$62,012	$62,012	$186,035	$88,583	$55,377	$71,571	$215,531	$26,571	($6,635)	$9,559	$29,496	43%	-11%	15%	16%	No
Substation Switchrack Rebuild	N/A	N/A	Yes	On-Going	Annual	$80,517	$80,517	$80,517	$241,551	$37,216	$61,284	$85,045	$183,545	($43,301)	($19,233)	$4,528	($58,005)	-54%	-24%	6%	-24%	No
Technology Infrastructure Maintenance and Replacement	N/A	N/A	Yes	On-Going	Annual	$78,139	$78,139	$78,139	$234,416	$62,535	$65,743	$89,922	$218,200	($15,604)	($12,396)	$11,783	($16,217)	-20%	-16%	15%	-7%	No
Technology Solutions	N/A	Non-RAMP	No	On-Going	Annual	$100,350	$100,350	$100,350	$301,050	$113,627	$129,288	$127,650	$370,565	$13,277	$28,938	$27,299	$69,514	13%	29%	27%	23%	Yes
Technology Solutions	N/A	Total	Yes	On-Going	Annual	$100,350	$100,350	$100,350	$301,051	$113,627	$129,288	$127,650	$370,565	$13,277	$28,938	$27,299	$69,514	13%	29%	27%	23%	**Yes**
Technology Solutions	Physical Security	Non-Electric Facilities/Prot ection of Major Business Functions	No	Cancelled	Cancelle d	$2,543	$2,543	$2,543	$7,629	$0	$0	$0	$0	($2,543)	($2,543)	($2,543)	($7,629)	-100%	-100%	-100%	-100%	No
Technology Solutions	Physical Security	Protection of Generation Capabilities	No	Cancelled	Cancelle d	$1,024	$1,024	$1,024	$3,072	$0	$0	$0	$0	($1,024)	($1,024)	($1,024)	($3,072)	-100%	-100%	-100%	-100%	No

Table XI-42
Other Capital Expenditure Category Activity Unit Variance Calculations

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Air Operations	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
All Hazards Assessment, Mitigation and Analytics	Building Safety	Seismic Building Safety Program	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
All Hazards Assessment, Mitigation and Analytics	N/A	Non-RAMP																		No
All Hazards Assessment, Mitigation and Analytics	N/A	Total																		No
Asset Reliability Risk Analytics	N/A	N/A	N/A - SCE did not request any expenditures in 2021																	No
Climate Adaptation and Severe Weather	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Communications	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Communications Equipment	N/A	N/A	Communication Units	32	32	32	96	19	14	20	53	-13	-18	-12	-43	-41%	-56%	-38%	-45%	**Yes**
CRE Project Management	Employee Safety	Office Ergonomics (CORE Program)	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
CRE Project Management	N/A	Non-RAMP																		No
CRE Project Management	N/A	Total																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Data Protection	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Interior Protection																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Non-RAMP																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	Perimeter Defense																		No
Cybersecurity Delivery and IT Compliance	Cyber Attack	SCADA Cybersecurity																		No
Cybersecurity Delivery and IT Compliance	N/A	Total																		No
Enhanced Situational Awareness	Wildfire	Situational Awareness	SCE did not have a capital forecast in the TY 2021 GRC.																	No
Environmental Programs	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement																	No
Facility Asset Management	Building Safety	Electrical Inspections	The variety of projects in this category makes it infeasible to identify a single unit of measurement.																	No
Facility Asset Management	Building Safety	Fire Life Safety Portfolio Assessment																		No
Facility Asset Management	N/A	Non-RAMP																		No
Facility Asset Management	N/A	Total																		No
Fire Science and Advanced Modeling	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Fleet Asset Management	N/A	N/A	This activity comprises multiple different work activities and providing one work unit is not feasible.																	No
Fleet Operations and Maintenance	N/A	N/A	This activity comprises multiple different work activities and providing one work unit is not feasible.																	No
Grid Management System	N/A	N/A	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Grid Mod Cybersecurity	Cyber Attack	Grid Modernization Cybersecurity	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No

A	E	F	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
				Imputed Units				Actual Units				Annual Unit Difference								
GRC Activity	RAMP Risk	RAMP Control / Mitigation	Unit Description / Rationale for No Work Units	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Imputed Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Actual Units to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	Unit Diff. to Date	Year 1 - 2021	Year 2 - 2022	Year 3 - 2023	% Unit Diff. to Date (%)	Unit Variance Explanation Triggered?
Laboratory Operations	N/A	N/A	This activity comprises multiple different work activities and different laboratories and providing one work unit is not feasible.																	No
Oil Containment Diversion System	N/A	N/A	Forecast is driven by weather and other environmental factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast is based on a five-year average of recorded expenditures and is not unit based.																	No
PSPS Customer Support	Wildfire	PSPS Protocol and Support Functions	This activity comprises multiple different work activities and different laboratories and providing one work unit is not feasible.																	No
Software Maintenance and Replacement	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Substation Switchrack Rebuild	N/A	N/A	# of Substation Switchrack Rebuilds	3	3	3	9	0	0	3	3	-3	-3	0	-6	-100%	-100%	0%	-67%	No
Technology Infrastructure Maintenance and Replacement	N/A	N/A	The variety of work activities in this category makes it infeasible to identify a single unit of measurement.																	No
Technology Solutions	N/A	Non-RAMP	This activity comprises multiple projects or types of projects that vary in size and scope, and therefore providing a single work unit is not feasible.																	No
Technology Solutions	Physical Security	Non-Electric Facilities/Protection of Major Business Functions																		No
Technology Solutions	Physical Security	Protection of Generation Capabilities																		No
Technology Solutions	N/A	Total																		No

3. Variance Explanations

Table XI-43 below provides the variance explanations for those GRC activities meeting the established thresholds.

Table XI-43
Other Capital Expenditure Category Activity Variance Explanations

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
Communications Equipment	No	No	**Yes**	For the Communications Equipment GRC Activity, 32 resources were authorized, and 20 resources were actually onboarded. As a scheduling coordinator, SCE enters into contracts to provide scheduling coordinator services to meet the CAISO and CPUC requirements for investor-owned utility load serving entities. This year SCE was the scheduling coordinator for a smaller number of new resources than when SCE filed its TY 2021 GRC application.
Grid Management System	No	**Yes**	No	In 2023, capital expenditures for the Grid Management System (GMS) were approximately $10 million below the authorized amount. As described in SCE's direct testimony in the 2025 GRC, schedule impacts resulted from vendor product development delays caused by COVID-19, supply chain constraints, the conflict in Ukraine, and the need to address cyber-related concerns with the Advanced Distribution Management System (ADMS) product. The cybersecurity concerns resulted in additional detailed assessment and test case development of the vendor's ability to meet SCE's cybersecurity requirements. These concerns also drove additional SCE review prior to SCE's approval to install the ADMS product in its test environment. As a result, SCE was required to work with the vendor to revise the schedule for Phase 1 and Phase 2 of the GMS deployment. Based on this revised schedule, SCE now expects to deploy the distribution management system (DMS), outage management system (OMS) and base DER management functions between 2024 and 2026, which represents an extension of the deployment timeline for Phase 2 from five years to seven years.
Technology Solutions	**Yes**	**Yes**	No	In the 2021 GRC, SCE requested, and received approval for, a hybrid forecasting approach for the 2021-2023 period. SCE provided a forecasted spending allocation by Business Planning Group (BPG), but did not provide an itemized listing of individual projects. With the exception of six projects that did include detailed spend forecasts in the 2021-2023 period, SCE's focus was on defining high-level business capabilities we planned to support. Based on our forecasted portfolio-based spending allocation by BPG in 2023, SCE recorded more than anticipated in the following BPGs: Enterprise Support, System Augmentation, and Resiliency. SCE recorded less than anticipated in the following BPGs: Customer Interactions, Distribution Grid, Energy Procurement, Substation, Distributed Energy Resources and Generation. As a whole, SCE overspent its authorized amount in 2023 due to the need to support high-priority business capabilities that could not be delayed or deferred. A summary of projects that drove the overspend in 2023, by BPG, is provided below.

A	Z	Z	AR	AX
	Variance Explanation Trigger			
GRC Activity	**$**	**% / $**	**Units**	**Variance Explanation**
				• Enterprise Support: NextGen ERP project recorded $15.5 million, HR Replatform recorded $13.7 million, and SAP Enterprise Platform Core Refresh recorded $6.3 million, which contributed to the variance/overspend in this BPG by $28.5 million. • System Augmentation: CRAS Refresh recorded $3.5 million, and Scheduling Re-Platform recorded $6.0 million, which contributed to the variance/overspend in this BPG by $7.1 million. • Resiliency: CCURE Refresh recorded $5.5 million, which contributed to the variance/overspend in this BPG by $1.3 million. These projects provided customer benefits, either directly or indirectly, in support of safety, reliability, customer satisfaction, and affordability.

4. Activity Status

Table XI-44 below provides the forecast scope, schedule and cost, status and status completion statement as applicable.

Table XI-44
Other Expenditure Category Activity Status

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Air Operations	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
All Hazards Assessment, Mitigation and Analytics	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Asset Reliability Risk Analytics	Completed	Completed	Completed	Completed	Completed	Completed	SCE completed the work for this activity in 2021.
Climate Adaptation and Severe Weather	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Communications	On-Going	Annual	On-Target	On-Target	Under	Proceeding as Planned	As noted in our previous variance explanations, the under-authorized spend is due to SCE's decision in mid-2020 to select Private LTE (PLTE) technology as the solution for the new Field Area Network (FAN) instead of the Mesh Radio Network (MRN) technology.
Communications Equipment	On-Going	Annual	Under	On-Target	Under	Proceeding as Planned	SCE is generally proceeding as planned, however as noted in our variance explanation, the lower of number or executed units can be attributed to a reduced number of contracts entering into the SCE portfolio, where SCE is the scheduling coordinator, and achieving CAISO commercial operation within the calendar year.
CRE Project Management	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our previous RSAR variance explanations, SCE was experiencing multiple projects delays. These previous delays, some of which were outside of SCE's control, caused a cascading delay effect. However, some of the causes in these delays have been resolved as illustrated in SCE's ramp up of spending in 2023.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
							SCE expects to ramp up the spending of CRE projects in future years.
Cybersecurity Delivery and IT Compliance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Enhanced Situational Awareness	On-Going	Annual	Over	Over	Over	Expanded / Emergent	SCE incurred incremental spend in 2021 - 2023 because of the need for increased weather stations, HD camera deployment, and necessary staffing relative to SCE's estimates in 2019 when the 2021 GRC was prepared. These incremental costs emerged because of lessons learned and experience gained with these sub-activities after the 2021 GRC submission.
Environmental Programs	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Facility Asset Management	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Fire Science and Advanced Modeling	On-Going	Annual	Over	On-Target	Over	Expanded / Emergent	SCE purchased additional weather model ensemble analytics and data transfer for visualization to build, test, and implement data transfer software from SCE High-Performance Computing Clusters (HPCC) to the Google cloud platform (GCP).
Fleet Asset Management	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Fleet Operations and Maintenance	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Grid Management System	On-Going	Annual	Under	Under	Under	Partially Delayed	As noted in our variance explanation, SCE is experiencing some delays with the deployment of GMS. Please refer to variance explanation for additional details.
Grid Mod Cybersecurity	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Laboratory Operations	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned but is incurring costs over authorized.

A	H	I	AS	AT	AU	AV	AW
			Forecast				
GRC Activity	**Project Life**	**Project Year**	**Scope**	**Schedule**	**Cost**	**Status**	**Status Completion Statement**
Oil Containment Diversion System	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned. The forecast for this work is driven by weather and other environmental factors outside of SCE's control and that can vary significantly from year to year. Accordingly, the capital forecast is based on a five-year average and SCE is currently experiencing costs above the historical averages.
PSPS Customer Support	On-Going	Annual	Over	Over	Over	Expanded / Emergent	SCE did not request any capital associated with PSPS Customer Support in the TY 2021 GRC. SCE made enhancements and improvements in the Customer Notifications space that was not requested in the TY 2021 GRC. The scope of this works included the PSPS Incident Commander Dashboard, Operational Data and GIS improvement, and Customer Notifications Enhancements.
Software Maintenance and Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Substation Switchrack Rebuild	On-Going	Annual	Under	Under	Under	Partially Delayed	Due to material supply, construction, Fire Climate Zone (FCZ), and permitting constraints, SCE was unable to fully complete or execute the full scope of work originally forecast for the Substation Switchrack Rebuild Program in 2021 - 2023.
Technology Infrastructure Maintenance and Replacement	On-Going	Annual	On-Target	On-Target	On-Target	Proceeding as Planned	SCE is generally proceeding as planned.
Technology Solutions	On-Going	Annual	On-Target	On-Target	Over	Proceeding as Planned	As noted in our variance explanation, in the 2021 GRC, SCE requested, and received approval for, a hybrid forecasting approach for the 2021-2023 period. In the 2021-2023 period, SCE's focus was on defining high-level business capabilities we planned to support. Therefore, SCE would expect to see some variation in year-to-year spending.

XII.

SAFETY, RELIABILITY & MAINTENANCE SPENDING RECORDED IN NON-GRC BALANCING OR MEMORANDUM ACCOUNTS

A. Background

Consistent with the April 10, 2020 guidance from Energy Division, SCE has excluded the balancing and memorandum account costs from the comparison of 2022 authorized and recorded safety, reliability and maintenance capital and O&M costs presented in Chapters VIII to XI. As further requested by Energy Division, SCE is identifying the balancing or memorandum accounts where the spending for those programs is recorded, the recorded year balances, and the disposition of any request for cost recovery. Table XII-45 below lists the beginning and ending balances in each applicable balancing and memorandum account and the associated cost-recovery mechanism.

Table XII-45
Balancing and Memorandum Account Balance

Balancing / Memorandum Account	***2023 Beginning Balance***	***2023 Ending Balance***	***Mechanism for Disposition***
Mobilehome Park Master Meter Balancing Account (MMMBA)	$0	$0 ($14,357 million prior to transfer)	December 31 transfer to BRRBA-D for recovery in 1/1 rate change
2023 CEMA Events[36]	$0	$2.159 million	Standalone Application

B. MMMBA: Mobilehome Park Master Meter Balancing Account

On March 13, 2014, the Commission issued D.14-03-021. This decision adopted a three-year "living pilot" program to incentivize voluntary conversions of master-metered service to direct service at mobile home parks (MHP) and authorized the creation of a balancing account for recording MHP program costs. On July 9, 2014, SCE submitted Advice 3072-E to establish the Mobilehome Park Master Meter Balancing Account (MMMBA) where the incremental costs

[36] Please note that these amounts are preliminary and subject to change prior to SCE submitting its application for recovery of these costs.

associated with the conversion of the master-metered service would be recorded. Incremental costs include the incremental revenue requirement associated with "to the meter" costs capitalized and placed in service upon system cutover to direct utility service and incremental O&M start-up costs such as customer outreach, administrative expenses, and other ongoing costs to implement the three-year pilot program. The MMMBA also records the incremental revenue requirement for the regulatory asset associated with "beyond the meter" costs incurred. The regulatory asset is amortized over a ten-year period, earning a rate of return at SCE's currently authorized rate of return. SCE submits an advice letter in the fourth quarter of each year concerning the operation of the MMMBA. SCE transfers the year-end MMMBA balance to the distribution sub-account of the Base Revenue Requirement Balancing Account (BRRBA) to be collected from customers in distribution rates.

SCE submitted Advice 5166-E on December 13, 2023 addressing the operation of the MMMBA in 2023. Table XII-46 below provides the 2023 recorded O&M and capital expenditures associated with the MHP conversion pilot program. Table XII-46 also summarizes the expenses and capital expenditures for 2023 for the MHP conversion pilot program.

Table XII-46
2023 O&M Expense and Capital Expenditures for Mobile Home Parks

Activity	O&M Expense	Capital Expenditure	Ratemaking Account
Mobile Home Park	$0.249 million	$26.579 million	MMMBA

C. CEMA Events – Fires and Heat Waves

SCE's Catastrophic Event Memorandum Account (CEMA) tracks the costs of restoring service and repairing apparatus and facilities after a defined catastrophic event or the costs of complying with government orders issued in connection with a catastrophic event. The costs recorded in the CEMA are shown below in Table XII-47. In Resolution E-3238 dated July 24, 1991, the Commission authorized SCE to establish a CEMA to record costs associated with: (1) restoring utility service to its customers; (2) repairing, replacing, or restoring damaged utility facilities; and (3) complying with governmental agency orders from declared disasters.

SCE plans to file a CEMA cost recovery application in the future that seeks recovery of costs recorded in the 2023 storm CEMA for 2023 severe winter storms and a hurricane/tropical storm event that are incremental to SCE's 2021 GRC authorized storm activity.

Table XII-47
2023 O&M Expense and Capital Expenditures for CEMA Events – (Total Company)

Activity	O&M Expense	Capital Expenditure
2023 CEMA Storm Events[37]	$69.9 million	$62.0 million

[37] Please note that these amounts are preliminary and subject to change prior to SCE submitting its application for recovery of these costs.

Appendix A

Risk Mitigation Mapping

RAMP to GRC Activity Mapping

SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	SCE 2018 RAMP Risk	SCE 2018 RAMP ID	SCE 2018 RAMP Control / Mitigation Name
External Communications	3	2	Contact with Energized Equipment	C2	Public Outreach
Cable Life Extension (CLE) Program	2	1	Underground Equipment Failure	C2	Cable Replacement Programs (CIC)
Cable-in-Conduit (CIC) Replacement Program	2	1	Underground Equipment Failure	C2	Cable Replacement Programs (CIC)
Overhead Conductor Program (OCP)	2	1	Contact with Energized Equipment / Wildfire	C1 / C1a	Overhead Conductor Program (OCP)
Underground Structure Replacements	2	1	Underground Equipment Failure	M1	Cover Pressure Relief and Restraint (CPRR) Program
Underground Switch Replacements	2	1	Underground Equipment Failure	C3	UG Oil Switch Replacement Program
Worst Circuit Rehabilitation (WCR)	2	1	Underground Equipment Failure	C1	Cable Replacement Programs (WCR)
Expanded Wildfire Vegetation Management	2	6	Wildfire	M5	Expanded Vegetation Management
Recognition	6	3	Employee, Contractor & Public Safety	C1	Safety Controls
Talent Solutions	6	3	Physical Security	C4	Asset Protection
Training and Development	6	3	Employee, Contractor & Public Safety	M1a	Safety Culture Transformation (Core Program)
Training and Development	6	3	Physical Security	C4	Asset Protection
Training and Development	6	3	Physical Security	M1a	Insider Threat Program Enhancement & Information Analysis - Base
Technology Solutions	6	1. Pt. 2	Physical Security	C2	Protection of Generation Capabilities
Technology Solutions	6	1. Pt. 2	Physical Security	C3b	Non-Electric Facilities/Protection of Major Business Functions - Enhanced
Facility & Land Operations	6	5	Building Safety	M1	Fire Life Safety Portfolio Assessment
Facility & Land Operations	6	5	Building Safety	M2	Electrical Inspections
Facility & Land Operations	6	5	Employee, Contractor & Public Safety	M3a	Office Ergonomics (Core Program)
Workers' Compensation	6	2	Employee, Contractor & Public Safety	C1	Safety Controls
Safety Activities - T&D	6	4	Employee, Contractor & Public Safety	C1	Safety Controls
Employee and Contractor Safety	6	4	Employee, Contractor & Public Safety	C2	Contractor Safety Program
Safety Culture Transformation	6	4	Employee, Contractor & Public Safety	M1a	Safety Culture Transformation (Core Program)
Employee and Contractor Safety	6	4	Employee, Contractor & Public Safety	M2	Industrial Ergonomics
Hydro	5	1	Hydro Asset Safety	C1	Seismic Retrofit
Hydro	5	1	Hydro Asset Safety	C2	Dam Surface Protection
Hydro	5	1	Hydro Asset Safety	C3	Spillway Remediation and Improvement
Hydro	5	1	Hydro Asset Safety	C4	Low Level Outlet Improvements
Hydro	5	1	Hydro Asset Safety	C5	Seepage Mitigation
Hydro	5	1	Hydro Asset Safety	C6	Instrumentation / Communication Enhancements
All Hazards Assessment, Mitigation & Analytics	4	1	Building Safety	C1	Seismic Building Safety Program
All Hazards Assessment, Mitigation & Analytics	4	1	Climate Change	M1	Climate Adaptation & Severe Weather
Cybersecurity Delivery and IT Compliance	4	3	Cyber Attack	C1a	Perimeter Defense
Cybersecurity Delivery and IT Compliance	4	3	Cyber Attack	C2a	Interior Protection
Cybersecurity Delivery and IT Compliance	4	3	Cyber Attack	C3a	Data Protection
Cybersecurity Delivery and IT Compliance	4	3	Cyber Attack	C4a	SCADA Cybersecurity

SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	SCE 2018 RAMP Risk	SCE 2018 RAMP ID	SCE 2018 RAMP Control / Mitigation Name
Cybersecurity Delivery and IT Compliance	4	3	Cyber Attack	C5a	Grid Modernization Cybersecurity
Cyber Software License & Maint	4	3	Cyber Attack	C1a	Perimeter Defense
Cyber Software License & Maint	4	3	Cyber Attack	C2a	Interior Protection
Cyber Software License & Maint	4	3	Cyber Attack	C3a	Data Protection
Cyber Software License & Maint	4	3	Cyber Attack	C4a	SCADA Cybersecurity
Cyber Software License & Maint	4	3	Cyber Attack	C5a	Grid Modernization Cybersecurity
Grid Mod Cybersecurity	4	3	Cyber Attack	C5a	Grid Modernization Cybersecurity
Emergency Preparedness & Response	4	2	Climate Change	C1	Emergency Mgmt.
Emergency Preparedness & Response	4	2	Climate Change	C2	Fire Mgmt.
Training, Drills and Exercises	4	2	Building Safety	C2	Facility Emergency Management Program
Training, Drills and Exercises	4	2	Climate Change	C1	Emergency Mgmt.
Protection of Generation Assets	4	4	Physical Security	C2	Protection of Generation Capabilities
Protection of Grid Infrastructure Assets	4	4	Physical Security	C1b	Grid Infrastructure Protection - Enhanced
Protection of Major Business Functions	4	4	Physical Security	C3b	Non-Electric Facilities/Protection of Major Business Functions - Enhanced
Physical Security	4	4	Physical Security	C4	Asset Protection
Physical Security	4	4	Physical Security	M1a	Insider Threat Program Enhancement & Information Analysis - Base
Fusing Mitigation	4	5	Wildfire	M8	Fusing Mitigation
HFRA Sectionalizing Devices	4	5	Wildfire	M2	Remote-Controlled Automatic Reclosers and Fast Curve Settings
Infrared Inspections	4	5	Contact with Energized / Wildfire Equipment	M4	Infrared Inspections
PSPS Protocol Support Functions	4	5	Wildfire	M3	PSPS Protocol and Support Functions
Situational Awareness	4	5	Wildfire / Climate Change	M7 / M2a	Enhanced Situational Awareness
Wildfire Covered Conductor Program	4	5	Contact with Energized Equipment / Wildfire	M5 / M1	Wildfire Covered Conductor Program
Wildfire Covered Conductor Program	4	5	Wildfire	C2	FR3 Overhead Distribution Transformer
Wildfire Covered Conductor Program	4	5	Wildfire	M9	Fire Resistant Poles (M1 Scope)