SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Gary A. Stern, Ph.D.
Managing Director, State Regulatory Operations

June 1, 2020

ADVICE 4220-E
(U 338-E)

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA
ENERGY DIVISION

SUBJECT: **Information Only Advice Letter**
Southern California Edison Company's 2019 Interim Risk Spending Accountability Report

PURPOSE

The purpose of this advice letter is to submit Southern California Edison Company's (SCE's) Interim Risk Spending Accountablity Report for year 2019, as attached hereto as Attachment A.

BACKGROUND

On January 3, 2019, California Public Utilities Commission Energy Division Director Edward Randolph sent a letter to SCE requesting annual Interim Spending Accountability Reports for specified activities[1] in years 2016-2020 (Spending Accountability Report Letter). SCE has previously filed its Interim Spending Accountability Reports for 2016, 2017, and 2018. In a May 31, 2019 letter, Energy Division requested that SCE submit Interim Spending Accountability Reports as information-only advice letters. Additional guidance regarding future reports was provided in a February 14, 2020 letter from Energy Division, and in Commission Decision (D.)19-04-020.

In 2020, SCE received two letters from Energy Division concerning its review of SCE's 2016-2017 and 2018 Interim Risk Spending Accountability Reports. In both letters, Energy Division found that SCE had met the applicable requirements for the interim reports. Energy Division also recommended that SCE review the new format (as set forth in D.19-04-020) for preparing and submitting future Risk Spending Accountability Reports. Energy Division suggested that SCE begin the process of developing its

[1] Specifically, the Energy Division required that SCE 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."

reports in a manner consistent with the new requirements. Although the new requirements are *not* in-force until 2022, SCE has largely incorporated the new framework in the attached 2019 report.

No cost information is required for this advice letter.

This advice letter will not increase any rate or charge, cause the withdrawal of service, or conflict with any other schedule or rule.

TIER DESIGNATION

Pursuant to General Order (GO) 96-B, Energy Industry Rule 5.1, this advice letter is submitted with a Tier 1 designation.

NOTICE

In accordance with GO 96-B, General Rule 6.2, this information-only advice letter is not subject to protest.

By letter dated February 14, 2020 Energy Division provided the following guidance regarding notice of SCE's 2019 Interim Risk Spending Accountability Report: "The 2019 RSAR should be filed and served to parties on the service lists for Proceedings A.16-09-001, A.19-08-013, and I.18-11-006, and made available to the CPUC's Safety Policy Division, Safety Enforcement Division, and the Public Advocates Office. SCE should also provide the 2019 Interim Risk Spending Accountability Report to the Energy Division Tariff Unit by emailing the report to edtariffunit@cpuc.ca.gov."

SCE is serving and providing copies of this advice letter to the interested parties in accordance with the Energy Division guidance. SCE is also serving this advice letter on the GO 96-B service list. Please refer to the attached service lists. Address change requests to the GO 96-B service list should be directed by electronic mail to AdviceTariffManager@sce.com or at (626) 302-4039. For changes to all other service lists, please contact the Commission's Process Office at (415) 703-2021 or by electronic mail at Process_Office@cpuc.ca.gov.

Further, in accordance with Public Utilities Code Section 491, notice to the public is hereby given by submitting and keeping the advice letter at SCE's corporate headquarters. To view other SCE advice letters submitted with the Commission, log on to SCE's web site at https://www.sce.com/wps/portal/home/regulatory/advice-letters.

For questions, please contact Doug Snow at (626) 302-2035 or by electronic mail at Douglas.Snow@sce.com.

Southern California Edison Company

/s/ Gary A. Stern, Ph.D.
Gary A. Stern, Ph.D.

GAS:ds:jm
Enclosures

California Public Utilities Commission

ADVICE LETTER SUMMARY

ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.: Southern California Edison Company (U 338-E)

Utility type:
☑ ELC ☐ GAS ☐ WATER
☐ PLC ☐ HEAT

Contact Person: Darrah Morgan
Phone #: (626) 302-2086
E-mail: AdviceTariffManager@sce.com
E-mail Disposition Notice to: AdviceTariffManager@sce.com

EXPLANATION OF UTILITY TYPE
ELC = Electric GAS = Gas WATER = Water
PLC = Pipeline HEAT = Heat

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 4220-E

Tier Designation: 1

Subject of AL: Information Only Advice Letter Southern California Edison Company's 2019 Interim Risk Spending Accountability Report (No protest period)

Keywords (choose from CPUC listing): Compliance

AL Type: ☐ Monthly ☐ Quarterly ☐ Annual ☑ One-Time ☐ Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #:

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL:

Summarize differences between the AL and the prior withdrawn or rejected AL:

Confidential treatment requested? ☐ Yes ☑ No

If yes, specification of confidential information:
Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required? ☐ Yes ☑ No

Requested effective date: No. of tariff sheets: -0-

Estimated system annual revenue effect (%):

Estimated system average rate effect (%):

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: None

Service affected and changes proposed[1]:

Pending advice letters that revise the same tariff sheets: None

[1]Discuss in AL if more space is needed.

Clear Form

Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

CPUC, Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102
Email: EDTariffUnit@cpuc.ca.gov

Name: Gary A. Stern, Ph.D.
Title: Managing Director, State Regulatory Operations
Utility Name: Southern California Edison Company
Address: 8631 Rush Street
City: Rosemead
State: California Zip: 91770
Telephone (xxx) xxx-xxxx: (626) 302-9645
Facsimile (xxx) xxx-xxxx: (626) 302-6396
Email: advicetariffmanager@sce.com

Name: Laura Genao c/o Karyn Gansecki
Title: Managing Director, State Regulatory Affairs
Utility Name: Southern California Edison Company
Address: 601 Van Ness Avenue, Suite 2030
City: San Francisco
State: California Zip: 94102
Telephone (xxx) xxx-xxxx: (415) 929-5515
Facsimile (xxx) xxx-xxxx: (415) 929-5544
Email: karyn.gansecki@sce.com

Clear Form

ENERGY Advice Letter Keywords

Affiliate	Direct Access	Preliminary Statement
Agreements	Disconnect Service	Procurement
Agriculture	ECAC / Energy Cost Adjustment	Qualifying Facility
Avoided Cost	EOR / Enhanced Oil Recovery	Rebates
Balancing Account	Energy Charge	Refunds
Baseline	Energy Efficiency	Reliability
Bilingual	Establish Service	Re-MAT/Bio-MAT
Billings	Expand Service Area	Revenue Allocation
Bioenergy	Forms	Rule 21
Brokerage Fees	Franchise Fee / User Tax	Rules
CARE	G.O. 131-D	Section 851
CPUC Reimbursement Fee	GRC / General Rate Case	Self Generation
Capacity	Hazardous Waste	Service Area Map
Cogeneration	Increase Rates	Service Outage
Compliance	Interruptible Service	Solar
Conditions of Service	Interutility Transportation	Standby Service
Connection	LIEE / Low-Income Energy Efficiency	Storage
Conservation	LIRA / Low-Income Ratepayer Assistance	Street Lights
Consolidate Tariffs	Late Payment Charge	Surcharges
Contracts	Line Extensions	Tariffs
Core	Memorandum Account	Taxes
Credit	Metered Energy Efficiency	Text Changes
Curtailable Service	Metering	Transformer
Customer Charge	Mobile Home Parks	Transition Cost
Customer Owned Generation	Name Change	Transmission Lines
Decrease Rates	Non-Core	Transportation Electrification
Demand Charge	Non-firm Service Contracts	Transportation Rates
Demand Side Fund	Nuclear	Undergrounding
Demand Side Management	Oil Pipelines	Voltage Discount
Demand Side Response	PBR / Performance Based Ratemaking	Wind Power
Deposits	Portfolio	Withdrawal of Service
Depreciation	Power Lines	

Clear Form

Attachment A

Southern California Edison Company's Interim Risk Spending Accountability Report for 2019

June 1, 2020

SOUTHERN CALIFORNIA EDISON COMPANY'S INTERIM RISK SPENDING ACCOUNTABILITY REPORT FOR 2019

Table of Contents

SOUTHERN CALIFORNIA EDISON COMPANY'S INTERIM RISK SPENDING ACCOUNTABILITY REPORT FOR 2019

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I.

INTRODUCTION

Southern California Edison Company's (SCE's) Interim Risk Spending Accountability Report (iRSAR) for year 2019 is organized into eleven sections (including this introduction), as well as three appendices. The sections are organized as follows: first, the Background section summarizes the regulatory background giving rise to the report, including Commission decisions and guidance from Energy Division regarding the contents and format of this report. Second, SCE presents recorded aggregate operations and maintenance (O&M) expenses and capital expenditures for 2019 relative to what was authorized in SCE's Test Year 2018 General Rate Case (GRC) for the safety, reliability and maintenance activities covered in this report. SCE includes a high-level summary explaining drivers for the variances.

Third, SCE offers important context that applies where, as here, the variance analysis involves forecast-based ratemaking over a multi-year general rate case cycle, and specifically for the 2019 authorized funding. That 2019 funding was authorized pursuant to a simplified Commission-adopted attrition mechanism. Also, the Commission's guidance on what SCE was authorized to spend in 2019 was not actually issued until nearly halfway through 2019. *The Energy Division's review of the variability between authorized and actual spending must take into account that SCE had to make its spending decisions throughout a significant portion of 2019 without knowing what it was actually authorized to spend in that year.* SCE also provides a discussion on accelerating some of the additional requirements from D.19-04-020 into this interim report based on guidance from Energy Division in its letter to SCE dated February 14, 2020. In certain cases, SCE has addressed or included items that were not yet required, but that Energy Division encouraged for inclusion in this Report.

Fourth, SCE describes how it chose the activities deemed impacting safety, reliability and maintenance covered in this report. Fifth, consistent with direction from the Energy Division, SCE explains the process it used to derive authorized dollars for activities in the attrition years.

The next four sections describe the O&M expense and capital expenditure for Spending Accountability Report (SAR)-eligible activities, variance calculations, and variance explanations for Distribution, Transmission, Generation and Other categories.[1] The required variance explanations are as follows: 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, as appropriate SCE has included explanations of variances in recorded vs authorized units that meet D.19-04-020 requirements.[2]

Finally, the last section covers SCE spending in 2019 on safety, reliability and maintenance activities specific to balancing and memorandum accounts differentiated between wildfire and non-wildfire activities.

The appendices provide the following:

- Appendix 1 maps Risk Assessment Mitigation Phase control and mitigation activities to GRC activities.
- Appendix 2 provides a walkover from the 2018 GRC activities to 2021 GRC activities.
- Appendix 3 provides a list of projects that were not presented in the 2018 GRC but were taken up and cancelled or deferred projects.

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1 For these 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 either rate case but that were taken up anyway.

2 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.").

During 2019, SCE continued to focus on delivering safe and reliable service to its customers and to the communities it is privileged to serve. SCE prudently prioritized overall authorized spending on behalf of its customers and appropriately varied from what the Commission authorized when circumstances changed, needs emerged, or new and better solutions later appeared.

Most notably in 2019, SCE made the decision to reallocate resources from traditional grid activities (e.g., infrastructure replacement) to urgent activities focused on mitigating the safety risk associated with catastrophic wildfires. That magnitude of wildfire risk and consequences was not foreseen, and could not reasonably have been foreseen, back when SCE finalized its Test Year 2018 GRC application in mid-2016. As a result, costs associated with 2019 wildfire activities were not forecast by SCE or authorized by the Commission in SCE's 2018 GRC, and will instead be recovered through various wildfire memorandum accounts.

As discussed below, while total distribution SAR-eligible activities are marginally underspent relative to authorized, SCE incurred approximately $1.2 billion of wildfire safety risk mitigation spending in 2019. For purposes of the authorized to recorded comparison in this report, those wildfire costs have been excluded as they are subject to memorandum account recovery.[3] Please see Section VII for variance explanations on programs where traditional grid activities were deferred in support of wildfire mitigation work, and Section XI for additional detail on 2019 wildfire activities and the associated mechanism where those costs are to be recovered.

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[3] Energy Division provided the recommendation to "remove the recorded cost of activities that are tracked in memo and balancing accounts when comparing recorded against authorized amounts." *See* Energy Division Review of the 2018 Interim Risk Spending Accountability Report of the Southern California Edison Company, p. 3.

II.

BACKGROUND

In D.14-12-025, the Commission revised the Rate Case Plan to incorporate a risk-based decision-making framework. The Commission adopted a new framework encompassing two new proceedings to support developing and implementing risk-based methodologies in the rate case filing. In addition, the Commission required that utilities file risk spending accountability reports to "assist in the goal of improving utility accountability for the ratepayer money spent on risk mitigation efforts."[4] The Energy Division was given the responsibility of developing the requirements and, ultimately, reviewing the filed reports.

Throughout 2018, the Energy Division conducted a series of workshops to refine the scope and nature of the Spending Accountability Reports. Among other things, the Energy Division expanded the scope of the report beyond the 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 591. On January 3, 2019, Energy Division Director Edward Randolph sent a letter to SCE requesting an interim Spending Accountability Report for specified activities[5] covering years 2018 to 2020 ("January 3rd 2019 Letter").[6] In addition to showing authorized versus actual spending for the record year (expressed in terms of

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

[5] 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."

[6] On Feb 14, 2020 Energy Division notified SCE of their recommendation that SCE submit an 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 Spending Accountability Reports in 2020. In that document, Energy Division confirmed that SCE would file its RSAR by May 31, 2020. *See Energy Division Annual Risk Spending Accountability Report 2020 Review Schedule* (issued April 10, 2020), fn. 3.

dollars and percentages), it asks SCE to include a derivation of authorized amounts,[7] and to discuss (where applicable) related balancing or memorandum accounts.[8]

In 2019, the CPUC adopted a new reporting framework in D.19-04-020, Ordering Paragraph 10. This new framework applies to SCE's Test Year 2021 GRC, A.19-08-013. That GRC application was filed on August 30, 2019. SCE's first RSAR under these new requirements will be filed on March 31, 2022. 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 3rd 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) reporting on authorized activities and actual activities performed, for each program, using, where available "work units" as the unit of reporting. Attachment 2 of D.19-04-020 also provides example tables for reporting authorized to recorded spending and work units.

In 2020, SCE received two letters from Energy Division concerning its review of SCE's 2016-2017 and 2018 interim Risk Spending Accountability Reports (iRSARs). *In both letters, Energy Division found that SCE had met the applicable requirements for the interim reports.* The Energy Division also recommended that SCE review the new format for preparing and submitting future RSARs, and begin developing its iRSAR reports in a manner consistent with the new requirements. Although the new requirements are not in-force until 2022, SCE has largely incorporated the new framework in its 2019 report.[9] The tables are organized by functional area (generation, transmission, distribution, and other),[10] for both O&M and capital.

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7 *See* Section V. below.

8 *See* Section XI. below

9 The example tables provided in Attachment 2 of D.19-04-020 present individual GRC activities split between RAMP and other GRC spending. For this report, SCE is only identifying which GRC activities include RAMP risk mitigation activities. SCE is committed to providing the split between RAMP and other spending within a single GRC activity in its report on 2021 authorized spending.

10 SCE uses the category of "other" because that terminology is found in Attachment A of the January 3, 2019 Spending Accountability Report Letter.

The tables now provide the link from GRC activities to RAMP risk mitigation programs, as well the comparison of authorized to actual units.

SCE's 2021 GRC was the Company's first GRC to incorporate the integration of RAMP. Accordingly, in this report SCE has utilized its 2021 GRC activity mapping to identify 2019 spending that is associated with a RAMP control or mitigation. Please refer to Appendix 1 for the RAMP control and mitigation activity mapping to GRC activities.

SCE has made diligent efforts to incorporate work units into the reporting found in this iRSAR, and will continue to refine this work effort in future spending accountability reports. SCE has provided authorized and recorded work units for activities where SCE clearly defined work units in the 2018 GRC. We did not "impute" work units to the extent they were not clearly presented in that format in our 2018 GRC.[11] SCE also did not consider specific projects to be unit-based. An example is found with Load Growth, where SCE's forecast is based on many individual projects of varying scopes and forecasts; SCE did not consider these to be unit-based.

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 spend for SAR-eligible O&M activities.

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

Figure III-1
2019 O&M GRC Authorized vs. Recorded
($000s)

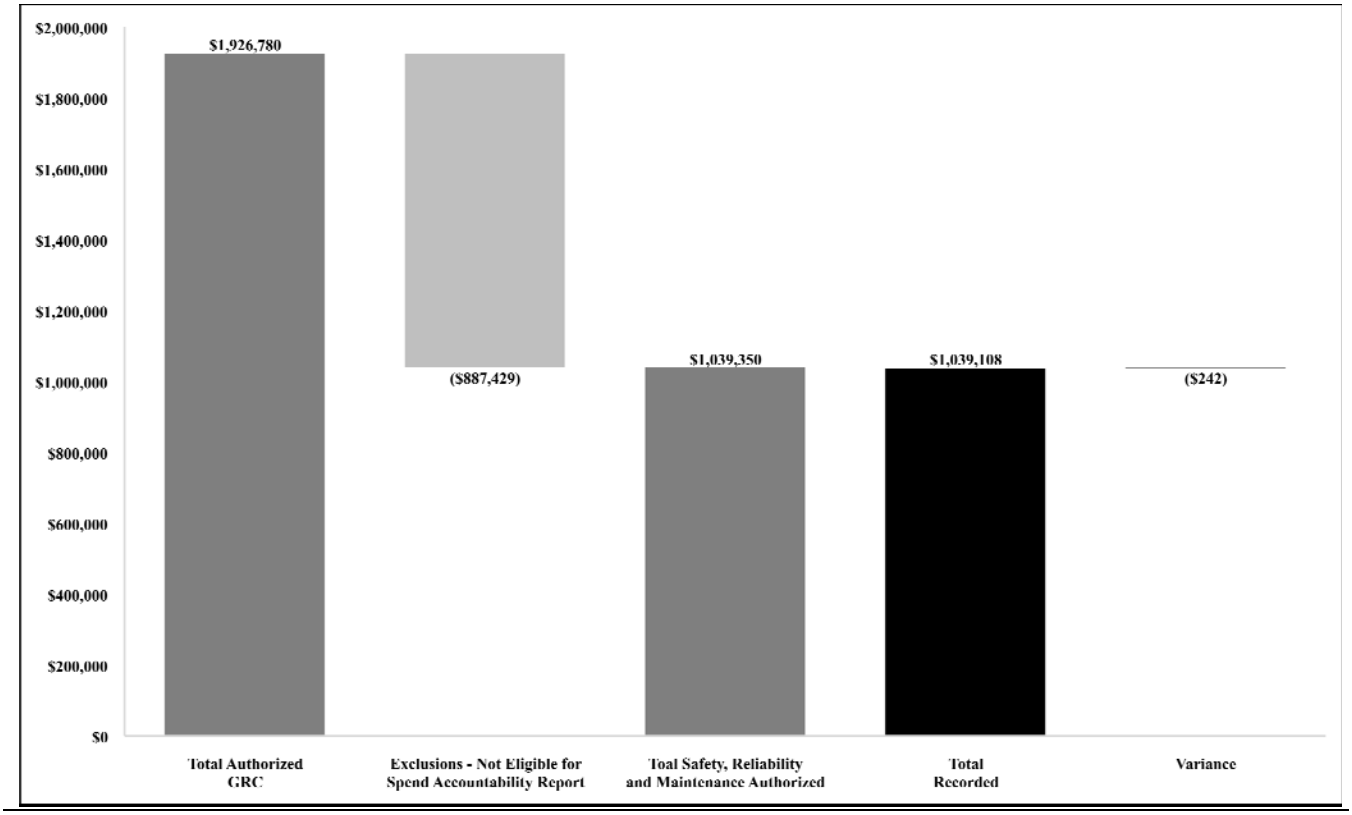
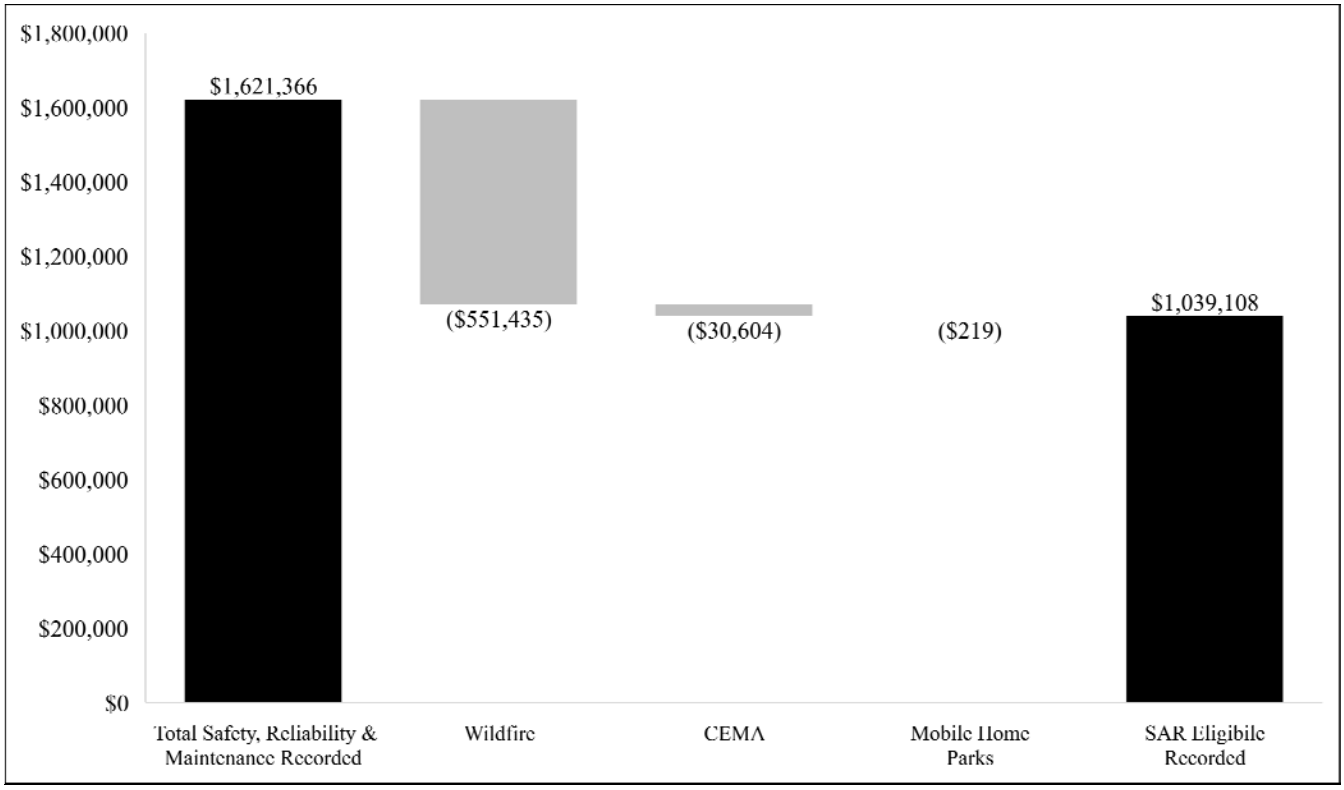


Figure III-2 below provides a walkover from 2019 total recorded safety, reliability and maintenance expenses to 2019 total SAR-eligible recorded expenses authorized in the 2018 GRC. SCE arrived at the 2019 total SAR-eligible recorded capital expenses by removing activities that have recorded costs to be recovered through memorandum or balancing accounts outside the 2018 GRC, consistent with Energy Division guidance provided in its letter to SCE on April 10, 2020.[12] In 2019, SCE spent approximately $580 million on safety, reliability and maintenance activities, primarily wildfire-related, to be recovered in memorandum and balancing

[12] Wildfire, Mobile Home Park and CEMA recovery accounts are discussed below in Section XI. That section is titled Safety, Reliability & Maintenance Spending Recorded in non-GRC Balancing or Memorandum Accounts.

accounts. See Section XI for additional detail on 2019 wildfire and non-wildfire activities and the associated mechanism where those costs are to be recovered.

Figure III-2
2019 O&M Expense Recorded Walkover
Total Safety, Reliablity and Maintenance Recorded to Total SAR-Eligible Recorded
($000s)



For 2019, SCE spent approximately $0.2 million less than authorized on O&M for the applicable 2018 GRC authorized safety, reliability and maintenance activities, as shown in the table below.

Table III-1
O&M Spending Accountability Report Variances by Function
($000s)[13]

Category	2019 Recorded	2019 Authorized	Recorded Vs. Authorized Variance	% Variance *(Rec – Auth)/ Auth*
Distribution	$332,690	$314,738	$17,952	5.7%
Transmission	$118,843	$103,588	$15,255	14.7%
Generation	$148,104	$167,399	($19,294)	(11.5%)
Other	$439,472	$453,626	($14,154)	(3.1%)
Grand Total	**$1,039,108**	**$1,039,350**	**($242)**	**0.0%**

Within the Distribution category, SCE overspent authorized by approximately $18 million. For Distribution, the overspend was largely driven by Distribution Preventative & Breakdown Maintenance. In 2019, SCE spent approximately $23 million over authorized in Distribution Preventative & Breakdown Maintenance activities. Work was deferred in 2018 for wildfire-related activities, and rescheduled for 2019. Higher costs were also driven by increased premium time and utilization of contractors to perform remediations.

Within the Transmission category, SCE overspent authorized by approximately $15 million. This overspend was primarily due to increased costs related to vegetation management performed to mitigate the heightened safety risks that were made apparent by the 2017 and 2018 wildfires.

Within the Generation category, SCE underspent approximately $19 million compared to authorized. This was primarily due to underruns at Mountainview. The Mountainview underruns were triggered by the timing of maintenance repairs, and work that was originally planned for 2019 but then accelerated into 2018.

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[13] SCE provided preliminary numbers in its 2019 Safety Performance Metrics Report filed on March 31st. These numbers have been updated to remove recorded dollars that were not authorized in the 2018 GRC, and to address the re-designations of SAR eligibility for several GRC activities.

Within the Other category, SCE underspent authorized by approximately $14 million, primarily due to Information Technology Delivery. The underspend in the technology delivery was driven by lower labor costs and a lower level of O&M-related activities.

B. Capital

Figure III-3 below depicts the total GRC authorized and recorded spend for SAR-eligible Capital activities.

Figure III-3
2019 Capital GRC Authorized vs. Recorded
($000s)

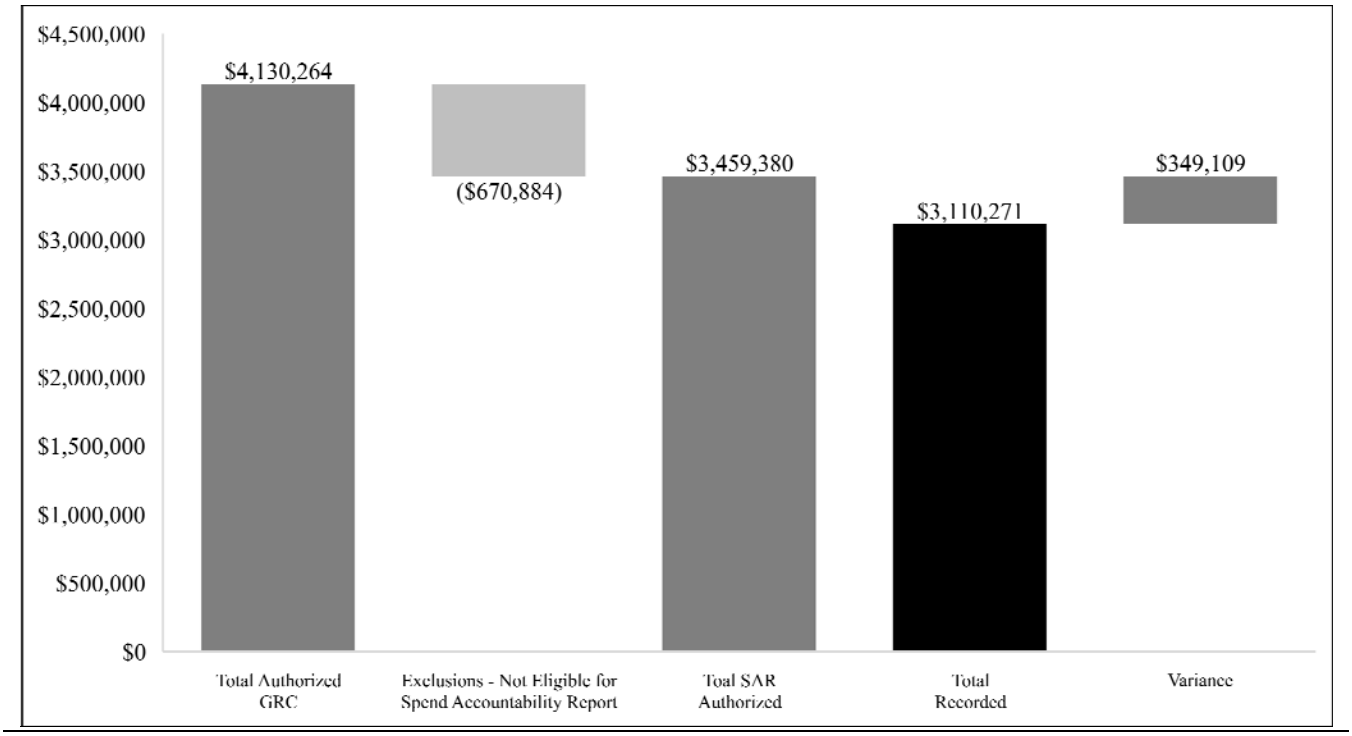

Figure III-4 below provides a walkover from 2019 total recorded safety, reliability and maintenance expenditures to 2019 total SAR-eligible recorded expenditures authorized in the 2018 GRC. SCE arrived at the 2019 total SAR-eligible recorded capital expenditures by removing activities recovered through memorandum or balancing accounts outside the 2018

GRC, consistent with Energy Division guidance provided in Energy Division's April 10, 2020 letter to SCE.[14] In 2019, SCE spent approximately $720 million on safety, reliability and maintenance activities, primarily wildfire-related, to be recovered in memorandum and balancing accounts. See Section XI for additional detail on 2019 wildfire and non-wildfire activities and the associated mechanisms where those costs are to be recovered.

[14] Wildfire, Mobile Home Park and CEMA recovery accounts are discussed below in Section XI. That section is titled Safety, Reliability & Maintenance Spending Recorded in Non-GRC Balancing or Memorandum Accounts.

Figure III-4
2019 Capital Expenditure Recorded Walkover
Total Safety, Reliablity and Maintenance Recorded to Total SAR-Eligible Recorded
($000s)[15]

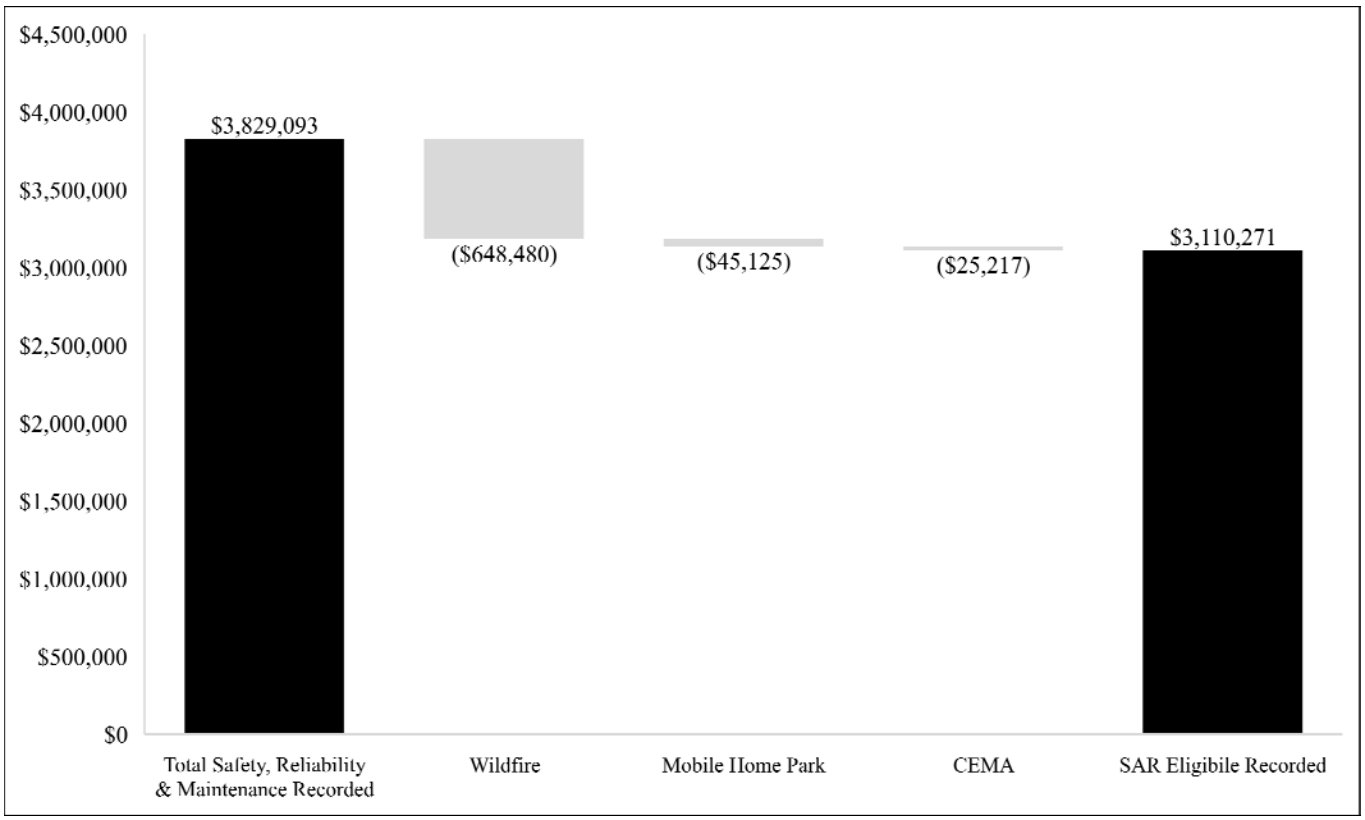

Table III-2 below reflects the authorized to recorded comparison of SCE's 2018 GRC capital activities supporting safety, reliability and maintenance, showing an approximately $349 million underspend.

[15] SCE provided preliminary numbers in its 2019 Safety Performance Metrics Report filed on March 31st. These numbers have been updated to remove recorded dollars that were not authorized in the 2018 GRC, and to reflect the re-designations of SAR eligibility for several GRC activities.

Table III-2
Capital Spending Accountability Report Variances by GRC Category
($000s)

Category	2019 Recorded	2019 Authorized	Recorded Vs. Authorized Variance	% Variance *(Rec – Auth)/ Auth*
Distribution	$1,751,326	$1,774,611	($23,285)	(1.3%)
Transmission	$798,732	$1,081,401	($282,669)	(26.1%)
Generation	$91,914	$107,134	($15,220)	(14.2%)
Other	$468,299	$496,234	($27,935)	(5.6%)
Total SAR-Eligible	**$3,110,271**	**$3,459,380**	**($349,109)**	**(10.1%)**

Within the Distribution category, SCE underspent authorized by approximately $23 million. The programs with underspend relative to authorized were generally affected by the need to reprioritize capital spending from traditional grid activities authorized in the 2018 GRC to urgently-needed wildfire mitigation efforts. Programs that experienced overspend relative to authorized were affected by factors that increased the cost of performing the work, or the deferment of work from 2018 into 2019.

Within the Transmission category, SCE underspent authorized by approximately $283 million. The underspend was primarily driven by delays that occurred in SCE's Transmission Substation Plan (TSP) projects, Transmission Line Rating Remediation (TLRR) program, and Grid Reliability projects. The delays were due to a variety of factors, including scope changes, regulatory delays, construction delays, and lower load growth. The underrun in TLRR primarily occurred due to construction on the Devers Red Bluff (DBR) project being halted in January 2019 due to bird nesting activity. The Grid Reliability projects include the Eldorado-Lugo-Mohave Upgrade, Mesa Substation and Cerritos Channel Relocation projects.

Within the Generation category, SCE underspent approximately $15 million compared to authorized. This was driven in significant part by re-prioritization based on operational needs to place higher priority on Catalina Diesel and Mountainview work activities over selected projects in the hydro-electric portfolio.

Within the Other category, SCE underspent authorized by approximately $28 million. This underspend was primarily driven by a delay in locating a viable site for SCE's T&D Training Facility. SCE ultimately decided to leverage an existing Rancho Vista property to build the facility in lieu of purchasing a new property. While these factors pushed the project timeline to the 2020-2022 period, they also reduced the project forecast by 51%. SCE achieved this reduced forecast while still meeting the operational needs and providing a safe training facility in the preferred metropolitan geographic location.

The underrun was partially offset by overruns in facility improvement projects and grid modernization deployment projects. The increased spending related to ongoing facility improvements is necessary to provide safe and reliable environments for the SCE workforce and the general public. SCE believes the increased spending on Grid Modernization cybersecurity remains prudent in light of the complex and evolving cybersecurity situation; this work also helps ensure SCE is able to operate a safe and reliable grid.

IV.

SCE'S INTERIM REPORT, PLACED IN CONTEXT

SCE appreciates the opportunity to present the data contained in this report and looks forward to further dialogue with Energy Division and with interested parties regarding the information. SCE respectfully notes that it is important to place this report in its proper context. The report compares SCE's recorded spending for selected activities with the amounts that the Commission had authorized. The key starting point in the Commission's oversight here is the Commission's examination of SCE's forecasts in its 2018 GRC. The Commission has confirmed, in an unbroken line of cases, that these forecasts only represent reasonable estimates of what the utility expects to spend in a given area.[16]

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[16] *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.").

SCE's 2018 GRC encompassed test year 2018, and attrition years 2019 and 2020. SCE followed the schedule established by the Commission and presented its forecasts in 2016. The Commission issued its final GRC decision on May 16, 2019.[17] 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. Most crucially, the near existential-level crisis of wildfires emerged in the time period after SCE had presented its GRC forecasts. The need to combat that threat drove significant variations from the spending that the Commission authorized for some activities in SCE's Test Year 2018 GRC.

Moreover, SCE respectfully notes that the Commission's guidance on what SCE was authorized to spend in 2019 was not issued until nearly halfway through 2019. Thus, the Energy Division's examination of the variability between authorized and actual 2019 spending must take into account that SCE had to make its spending decisions throughout a significant part of 2019 without knowing what it was actually authorized to spend in that year.

In addition, this interim Risk Spending Accountability Report covers an attrition year in SCE's 2018 GRC cycle. The authorized spending for 2019 was established through a simple overall attrition year adjustment, rather than a detailed examination and decision regarding the individual forecasts and specific needs for the year.[18]

The Commission has repeatedly recognized that actual spending can differ from authorized spending, and that utilities have the flexibility to apply their best judgment in managing the business.[19] In providing guidance on spending accountability reports, the Energy

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[17] D.15-11-021.

[18] *See* D.19-05-020 "This decision also authorizes post-test year revenue requirement adjustments of $335 million for 2019 (a 6.6% increase)" at p. 2 and ordering paragraph 4 at pp. 436-437 for the authorized Post-Test Year Ratemaking mechanism.

[19] *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.

Division has confirmed that "a utility is allowed the flexibility to reprioritize the authorized funds in order to ensure safe and reliable operations."[20] 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. Recognizing that the utilities may need to re-prioritize spending 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."[21] 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."[22]

V.

APPLICABLE SAFETY, RELIABILITY, AND MAINTENANCE-RELATED PROGRAMS

Both the January 3, 2019 Spending Accountability Report Letter and D.19-04-020 directed SCE to develop a list of programs that include activities relating to safety, reliability or maintenance authorized or in effect during the record period.

In SCE's 2018 GRC, A.16-09-001, a risk mapping of GRC activities to risk events, outcomes and impacts was developed.[23]

This mapping:

- Examined each GRC activity;
- Identified what type of risk event it would be able to mitigate; and

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[20] 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

[21] CPUC Resolution E-4464 (May 10, 2012), at p. 7.

[22] D.11-05-018, at p. 27.

[23] *See* A.16-09-001, p. 37 (sub-section regarding workpaper).

- 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 basis for the Energy Division's report on Safety Related Spending for 2015. The Energy Division submitted that report in connection with A.16-09-001. Consistent with its prior reports, SCE continues to utilize the Risk Mapping from A.16-09-001 for purposes of defining its 2019 Spending Accountability Report. First, SCE identified the appropriate safety-related programs by selecting any activity that scored in the Safety Impact dimension. Then, SCE expanded these criteria to include programs that scored in the Reliability Impact Dimension. Because the Risk Mapping does not capture a Maintenance Impact dimension, SCE conducted a manual review of all programs that had not scored as either Safety- or Reliability-related. SCE has included any program that met the criteria specified by the January 3, 2019 Spending Accountability Report Letter and D.19-04-020.

In the time period after SCE filed its 2018 GRC application, SCE carefully considered feedback from stakeholders regarding the occasional inconsistency between how our rate case showing is organized and how work is performed. The efforts to improve here have resulted in SCE developing a new activity structure that underpins SCE's 2021 GRC Application. The aim of the new structure is to provide greater visibility into how spending impacts the achievement of company goals, and enhance SCE's ability to prioritize work and allocate resources more effectively on a company-wide basis. To create consistency and alignment with the 2021 GRC,[24] where 2019 authorized to recorded variances will also be discussed, SCE has adopted this new structure when preparing this iRSAR.

As discussed above, activities qualifying for the iRSAR were based on the risk modeling of GRC activities as presented in the 2018 GRC. In implementing this new structure, SCE has

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[24] Under the Commission's Rate Case Plan, SCE's 2021 GRC application was filed by September 1, 2019.

necessarily made certain changes to its GRC presentation. In some cases, this resulted in an imperfect match of authorized to recorded numbers for 2019 GRC activities. SCE has attempted to reconcile these items by matching GRC accounts as closely as possible. Recognizing the need to compare SCE's current structure to its 2018 GRC Application showing, we developed Appendix 2, a *GRC Activity Walkover,* to, among other things, provide a roadmap of Risk Spending Accountability Report activities in the new structure and the associated location in the prior rate case.

VI.

DERIVATION OF AUTHORIZED DOLLARS

On September 1, 2016 SCE filed Application (A.)16-09-001[2018 GRC] requesting, among other things, an increase in its base revenue requirements for the Test Year 2018 and Post-Test Years 2019 and 2020.[25]

The Commission issued the 2018 SCE GRC Decision (D.19-05-020) on May 16, 2019. The GRC Decision adopted, among other things, a Post-Test Year Ratemaking (PTYR) mechanism that escalates the adopted 2018 CPUC-jurisdictional capital additions in 2019. SCE derived the 2019 authorized capital expenditures presented in the Spending Accountability Report using the authorized capital addition escalation percentage as a proxy for adopted attrition-year capital expenditures. This interim Risk Spending Accountability Report generally does not include costs for activities that currently are recovered outside the GRC. A few examples of such costs are Charge Ready, fuel and purchased power, and Energy Efficiency programs. This interim Risk Spending Accountability Report does, however, include FERC-jurisdictional capital and O&M reviewed in the GRC.

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[25] 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.

For operations and maintenance (O&M) related expenses, the Energy Division approved SCE Advice Letter (AL) 4012-E (as supplemented by 4012-E-A), for the 2019 GRC PTYR Revenue Requirement (with an effective date of January 1, 2018). This was in accordance with the 2018 GRC Decision. The PTYR mechanism adjusts SCE's authorized O&M expense using various escalation factors for labor, non-labor, medical, and other benefit expenses between GRC test years. This helps provide SCE with additional revenues to cover its cost of doing business.

VII.

DISTRIBUTION CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

For all Distribution expense-category activities that are deemed SAR-eligible, Table VII-3 below provides the 2021 GRC testimony location, 2021 GRC activity description, and an indication of whether there are any RAMP controls or mitigations associated with that GRC activity.

Table VII-3
Distribution Expense Category Activity Descriptions

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-04 Vol : 5	Enhanced Overhead Inspections and Remediations		This activity includes the costs associated with performing Enhanced Overhead Inspections (EOI) and the remediation of findings across SCE's High Fire Risk Area. EOI goes above and beyond SCE's traditional compliance-based Overhead Detail Inspections to identify asset conditions that can pose grid resiliency and public safety risks. EOI and ODI are discussed in much further detail in SCE's 2021 GRC (*see* Exhibit SCE-02, Volume 1 and SCE-04, Volume 5).
SCE-02 Vol : 3	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 substations.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 3	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	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	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	Substation - Inspections and Maintenance		Inspections and Maintenance Activities Performed at SCE-owned Generating Facilities - 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. These costs are incurred by SCE's Power Production Department.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 3	Substation O&M Breakdown Maintenance		Includes the costs to perform unplanned breakdown maintenance. This encompasses repairing and replacing 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. Unplanned maintenance does not include costs related to failures that occur during a storm or from a claim.
SCE-02 Vol : 1 Pt. 3	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 : 6	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	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 : 1 Pt. 2	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	Distribution Overhead Detail Inspections		Include costs for inspecting SCE's overhead distribution electrical system pursuant to GO 165 and SCE's Distribution Inspection & Maintenance Program (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. *Unit Description*: # of Overhead Detail Inspections

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 1 Pt. 2	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. Unplanned activities, referred to as breakdown maintenance, include the repair of SCE equipment and structures that are damaged or fail in service. These items are typically identified as Priority 1 conditions under SCE's DIMP. Breakdown maintenance is typically performed in response to damage caused by equipment failures, degradation, metallic balloons, rodents, birds, or other causes. Unplanned maintenance does not include the costs for repairs performed as a result of a storm or a claim, such as a vehicle damaging SCE poles.
SCE-02 Vol : 1 Pt. 2	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. *Unit Description*: # of Underground Detail Inspections
SCE-02 Vol : 1 Pt. 2	Patrolling and Locating Trouble		Troublemen Patrol, Locate, and Repair Activities - Includes the costs incurred by troublemen when patrolling distribution lines to locate trouble as requested by SCE's system operators or as the result of a customer-reported problem. Activities include patrolling, switching, locating the cause of the reported problem, inspecting SCE equipment installed on the customer's property, and repairs to the system to correct reported problem. This includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 1 Pt. 2	Streetlight Operations, Inspections, and Maintenance		Includes all the O&M expenses for SCE's streetlight system. 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 : 5	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 perform a visual inspection of the exterior of the pole to check for damage. *Unit Description*: # of Intrusive Pole Inspections
SCE-02 Vol : 5	Distribution Pole Loading Assessments		The costs incurred in performing pole loading assessments on distribution 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 local conditions such as high winds and SCE's loading, will be identified for repair or replacement. *Unit Description:* # of Pole Loading Assessments
SCE-02 Vol : 5	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. *Unit Description*: # of Pole Loading Repairs
SCE-02 Vol : 5	Distribution Request for Attachment Inspections		Includes cost for Pre-Inspections and Final Inspections of renter attachments to distribution poles.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 4 Pt. 2	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 : 7	Wildfire Work Order Related Expense Distribution		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.

2. GRC Activities Variances

Table VII-4 below provides the authorized, recorded, variance and percentage change values for each distribution expense 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 VII-4
Distribution Expense Category Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Circuit Breaker Inspections and Maintenance	$5,038	$5,872	($833)	-14%	0	0	0	0%	No	No	No
Dead, Dying and Diseased Tree Removal	$2,723	$1,403	$1,320	94%	0	0	0	0%	No	No	No
Distribution Apparatus Inspection and Maintenance	$5,958	$5,737	$220	4%	0	0	0	0%	No	No	No

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Distribution Intrusive Pole Inspections	$5,425	$5,194	$231	4%	135,836	119,500	16,336	14%	No	No	No
Distribution Overhead Detail Inspections	$7,655	$7,788	($133)	-2%	16,382	17,513	-1,131	-6%	No	No	No
Distribution Pole Loading Assessments	$20,796	$21,608	($811)	-4%	179,322	207,000	-27,678	-13%	No	No	No
Distribution Pole Loading Repairs	$4,010	$3,274	$736	22%	1,531	1,634	-103	-6%	No	No	No
Distribution Preventive and Breakdown O&M Maintenance	$124,933	$102,349	$22,583	22%	0	0	0	0%	Yes	Yes	No
Distribution Request for Attachment Inspections	$1,621	$0	$1,621	-100%	0	0	0	0%	No	No	No
Distribution Routine Vegetation Management	$60,370	$65,724	($5,354)	-8%	0	0	0	0%	No	No	No
Distribution Underground Detail Inspections	$7,738	$4,602	$3,136	68%	163,186	161,693	1,493	1%	No	No	No
Load Side Support	$929	$1,089	($159)	-15%	0	0	0	0%	No	No	No
Meter System Maintenance Design	$3,009	$2,183	$825	38%	0	0	0	0%	No	No	No
Monitoring and Operating Substations	$41,769	$48,746	($6,977)	-14%	0	0	0	0%	No	No	No
Other Substation Equipment Inspections and Maintenance	$1,560	$2,866	($1,306)	-46%	0	0	0	0%	No	No	No
Patrolling and Locating Trouble	$23,847	$21,665	$2,182	10%	0	0	0	0%	No	No	No
Relay Inspections and Maintenance	$3,001	$2,790	$211	8%	0	0	0	0%	No	No	No
Streetlight Operations, Inspections, and Maintenance	$7,828	$7,511	$317	4%	0	0	0	0%	No	No	No
Substation - Inspections and Maintenance	$1,872	$2,096	($224)	-11%	0	0	0	0%	No	No	No
Substation O&M Breakdown Maintenance	$2,175	$2,241	($65)	-3%	0	0	0	0%	No	No	No
Wildfire Work Order Related Expense Distribution	$432	$0	$432	-100%	0	0	0	0%	No	No	No

3. Variance Explanations

Table VII-5 below provides the variance explanations for those GRC activities that met the established thresholds.

Table VII-5
Distribution Expense Category Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-02 Vol: 1 Pt. 2	Distribution Preventive and Breakdown O&M Maintenance	$: Yes, % : Yes, Units: No	Higher spend occurred in 2019 due to work that was deferred from 2018 being completed in 2019. We also experienced a greater use of contractor resources that operated under time and expense structures rather than unit price-based work. Use of such contractors and premium time was necessary to accomplish this additional scope of work.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

For all Distribution-category activities that are deemed SAR-eligible, Table VII-6 below provides the 2021 GRC testimony location, 2021 GRC activity description, and an indication of whether there are any RAMP activity components associated with that GRC activity.

Table VII-6
Distribution Expenditure Category Activity Descriptions

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 1 Pt. 1	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 addresses equipment obsolescence, safety, and reliability. *Unit Description:* # of transformers removed
SCE-02 Vol: 1 Pt. 1	4 kV Substation Eliminations		Includes substation equipment removal, soil remediation, and removal of associated buildings. 4 kV Substation Eliminations are a part of the larger 4 kV Substation Elimination Program, which addresses equipment obsolescence, safety, and reliability. *Unit Description:* # of 4kV substations eliminated
SCE-02 Vol: 1 Pt. 1	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 downstream of its location. They act in a manner similar to circuit breakers, but are installed in a distribution circuit rather than a substation. *Unit Description:* # of Automatic Reclosers Replaced
SCE-02 Vol: 1 Pt. 1	Cable Life Extension (CLE) Program	Cable Replacement Programs (CIC)	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. *Unit Description:* Cable Testing and Cable Injection, Conductor Miles

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 1 Pt. 1	Cable-in-Conduit (CIC) Replacement Program	Cable Replacement Programs (CIC)	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. *Unit Description:* Conductor Miles
SCE-02 Vol: 1 Pt. 1	Capacitor Bank Replacement Program		The Capacitor Bank Replacement Program replaces or removes failed and obsolete distribution capacitor banks and their associated capacitor switches. Capacitor banks are flagged within field inspection in order to be targeted for replacement as a part of cyclic inspections or issues found in field by personnel working on or near capacitor banks. Each capacitor bank is composed of three capacitor units, fuses, a rack, and mounting hardware. *Unit Description*: # of Capacitor Banks Replaced
SCE-02 Vol: 1 Pt. 1	Overhead Conductor Program (OCP)	Overhead Conductor Program (OCP)	The Overhead Conductor Program (OCP) is SCE's program to replace small overhead conductors that do not meet present standards. Larger conductors replace the smaller ones. The program also involves installing protective devices to improve protection of overhead conductor. *Unit Description:* # of Conductor Miles
SCE-02 Vol: 1 Pt. 1	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 on human health. *Unit Description:* # of PCB Contaminated Transformers Replaced
SCE-02 Vol: 1 Pt. 1	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. *Unit Description:* # of LED Replacements/Conversions

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 1 Pt. 1	Underground Structure Replacements	Cover Pressure Relief and Restraint (CPRR) Program	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. *Unit Description:* # of Underground Structure Replacements, # of CPRR Installed, and # of Underground Structures Shored
SCE-02 Vol: 1 Pt. 1	Underground Switch Replacements	UG Oil Switch Replacement Program	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). Unit Description: # of Underground Switch Replacements
SCE-02 Vol: 1 Pt. 1	Worst Circuit Rehabilitation (WCR)	Cable Replacement Programs (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. *Unit Description:* # of Conductor Miles
SCE-02 Vol: 1 Pt. 2	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 able to identify the party responsible for the damage, SCE pursues recovery of the costs to repair the damage.
SCE-02 Vol: 1 Pt. 2	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	Distribution Tools and Work Equipment		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.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 1 Pt. 2	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. *Unit Description:* # of Distribution Transformers
SCE-02 Vol: 1 Pt. 2	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. 3	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: 3	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	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	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 costs for acquiring and retiring portable tools and equipment whose cost exceeds $1,000.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 4 Pt. 1	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 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	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	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-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.
SCE-02 Vol: 4 Pt. 2	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. *Unit Description:* # of Transformers
SCE-02 Vol: 4 Pt. 2	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

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
			facilitate load transfers between substations and circuits.
SCE-02 Vol: 4 Pt. 2	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	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-02 Vol: 4 Pt. 2	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 expansion of the substation property, and new substations.
SCE-02 Vol: 4 Pt. 2	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.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
			Unit Description: # of Programmable Capacitor Controls Replaced
SCE-02 Vol: 4 Pt. 2	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. *Unit Description:* # of New Capacitors Installed
SCE-02 Vol: 4 Pt. 2	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 the circuit breaker will have to interrupt. *Unit Description:* # of Substation Circuit Breakers Replaced
SCE-02 Vol: 5	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. *Unit Description:* # of Distribution Pole Replacements
SCE-02 Vol: 5	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 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. *Unit Description:* # of Distribution Pole Replacements
SCE-02 Vol: 5	Distribution Wood Pole Disposal		Distribution Wood Pole Disposal are the costs incurred when safely disposing of poles that are removed from service. *Unit Description:* # of Pole Replacements

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 5	Distribution Wood Pole Disposal - Pole Loading Program		Distribution Wood Pole Disposal - Pole Loading Program are the costs incurred when safely disposing of poles that are removed from service as part of the Pole Loading Program.
SCE-04 Vol: 2	Distribution Storm Response Capital		Includes costs related to repair and replacement performed as part of a storm response on Distribution facilities.

2. GRC Activities Variances

Table VII-7 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 VII-7
Distribution Category Expenditure Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
4 kV Cutovers	$58,414	$92,046	($33,632)	-37%	1,017	3,803	-2,786	-73%	Yes	Yes	Yes
4 kV Cutovers - Load Growth Driven	$19,492	$37,866	($18,374)	-49%	581	755	-174	-23%	No	Yes	Yes
4 kV Substation Eliminations	$5,857	$2,173	$3,684	170%	4	9	-5	-56%	No	No	Yes
Automatic Reclosers Replacement Program	$1,488	$2,446	($958)	-39%	21	30	-9	-30%	No	No	Yes

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Automation	$44,368	$78,341	($33,973)	-43%	0	0	0	0%	Yes	Yes	No
Cable Life Extension (CLE) Program	$11,235	$24,778	($13,543)	-55%	217	300	-83	-28%	No	Yes	No
Cable-in-Conduit (CIC) Replacement Program	$19,973	$43,009	($23,036)	-54%	71	150	-79	-52%	Yes	Yes	Yes
Capacitor Bank Replacement Program	$9,736	$14,478	($4,741)	-33%	290	350	-60	-17%	No	No	No
DER-Driven Grid Reinforcement	$139	$0	$139	-100%	0	0	0	0%	No	No	No
Distribution Circuit Upgrades	$53,160	$62,507	($9,348)	-15%	0	0	0	0%	No	No	No
Distribution Claim	$41,848	$30,597	$11,251	37%	0	0	0	0%	No	Yes	No
Distribution Deteriorated Pole Replacement	$196,678	$163,613	$33,065	20%	9,238	10,791	-1,553	-14%	Yes	Yes	No
Distribution Plant Betterment	$28,892	$16,347	$12,545	77%	0	0	0	0%	No	Yes	No
Distribution Pole Loading Program Pole Replacement	$157,950	$114,689	$43,260	38%	7,192	7,342	-150	-2%	Yes	Yes	No
Distribution Preventive and Breakdown Capital Maintenance	$364,392	$282,943	$81,449	29%	0	0	0	0%	Yes	Yes	No
Distribution Storm Response Capital	$40,941	$37,984	$2,957	8%	0	0	0	0%	No	No	No
Distribution Substation Plan (DSP) Circuits	$30,758	$62,420	($31,662)	-51%	0	0	0	0%	Yes	Yes	No
Distribution Substation Plan Substations	$73,063	$98,182	($25,119)	-26%	0	0	0	0%	Yes	Yes	No
Distribution Tools and Work Equipment	$2,947	$5,009	($2,062)	-41%	0	0	0	0%	No	No	No
Distribution Transformers	$102,432	$98,602	$3,830	4%	28,604	30,862	-2,258	-7%	No	No	No
Distribution Volt VAR Control and Capacitor Automation Program	$2,023	$4,559	($2,536)	-56%	301	480	-179	-37%	No	No	Yes
Distribution Wood Pole Disposal	$4,669	$2,232	$2,436	109%	0	0	0	0%	No	No	No
Distribution Wood Pole Disposal - Pole Loading Program	$0	$1,432	($1,432)	-100%	0	0	0	0%	No	No	No

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Engineering and Planning Software Tools	$36,998	$13,881	$23,117	167%	0	0	0	0%	Yes	Yes	No
Meter System Maintenance Design	$288	$929	($641)	-69%	0	0	0	0%	No	No	No
New Capacitors	$6,968	$7,562	($594)	-8%	138	183	-45	-25%	No	No	Yes
Overhead Conductor Program (OCP)	$125,029	$100,523	$24,505	24%	507	705	-198	-28%	Yes	Yes	Yes
PCB Transformer Removal	$2,114	$1,496	$618	41%	321	250	71	28%	No	No	Yes
Prefabrication	$18,267	$14,921	$3,345	22%	0	0	0	0%	No	No	No
Preventive Maintenance	$65,438	$48,212	$17,226	36%	0	0	0	0%	No	Yes	No
Streetlight Maintenance and LED Conversions	$52,895	$51,706	$1,190	2%	74,607	102,200	-27,593	-27%	No	No	Yes
Substation Emergency Equipment	$21,598	$4,817	$16,781	348%	0	0	0	0%	No	Yes	No
Substation Equipment Replacement Program	$11,806	$29,963	($18,157)	-61%	54	92	-38	-41%	No	Yes	Yes
Substation Tools and Work Equipment	$7,398	$5,763	$1,636	28%	0	0	0	0%	No	No	No
Underground Structure Replacements	$48,247	$75,117	($26,870)	-36%	221	285	-64	-22%	Yes	Yes	Yes
Underground Switch Replacements	$8,594	$13,118	($4,524)	-34%	119	200	-81	-41%	No	No	Yes
Worst Circuit Rehabilitation (WCR)	$75,231	$130,347	($55,116)	-42%	108	350	-242	-69%	Yes	Yes	Yes

3. Variance Explanations

Table VII-8 below provides the variance explanations for those GRC activities that met the established thresholds.

Table VII-8
Distribution Category Expenditure Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanation
SCE-02 Vol: 1 Pt. 1	4 kV Cutovers	$: Yes, %: Yes, Units: Yes	Lower spend primarily due to decreased projects and number of circuits cutover as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 1	4 kV Substation Eliminations	$: No, %: No, Units: Yes	In 2019, SCE executed fewer 4kV Substation eliminations due to reprioritization of resources for wildfire mitigation efforts. SCE recorded higher expenditures despite the lower executed units, because actual unit costs for substation configurations were higher than the unit costs estimated in the 2018 GRC. This occurred in part because soil remediation costs were not included in the 2018 GRC unit cost assumptions.
SCE-02 Vol: 1 Pt. 1	Automatic Reclosers Replacement Program	$: No, %: No, Units: Yes	Lower spend and lesser number of automatic reclosers replacements, primarily as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 1	Cable Life Extension (CLE) Program	$: No, %: Yes, Units: No	Lower spend due to lower cost per and deferral of the Cable Rejuvenation/Injection program, Cable Testing, and Cable in Conduit Replacement Program in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 1	Cable-in-Conduit (CIC) Replacement Program	$: Yes, %: Yes, Units: Yes	Lower spend and number of cable replacements primarily as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 1	Overhead Conductor Program (OCP)	$: Yes, %: Yes, Units: Yes	SCE recorded higher spend in 2019 for OCP due to timing of when the 2018 GRC decision was received. As a result, 2019 variance for OCP was driven primarily by a higher recorded unit cost than projected in the 2018 GRC.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanation
SCE-02 Vol: 1 Pt. 1	PCB Transformer Removal	$: No, %: No, Units: Yes	Higher spend primarily due to 71 more PCB Transformers replaced than the 250 authorized amounts. Additional units were added to 2019 scope during mid-year reassessment, which utilized updated lab results to identify additional PCB transformers for replacement needed to mitigate safety and environmental impacts associated with PCB oil.
SCE-02 Vol: 1 Pt. 1	Streetlight Maintenance and LED Conversions	$: No, %: No, Units: Yes	The recorded 2019 unit cost was higher than the forecast unit cost in the 2018 GRC, due in part to increases in the costs for materials. SCE completed approximately 28,000 fewer units than the authorized amount of approximately 100,000 units in the 2018 GRC. The net result was recorded expense of approximately $1.2M less than the authorized amount of $51.8M.
SCE-02 Vol: 1 Pt. 1	Underground Structure Replacements	$: Yes, %: Yes, Units: Yes	Lower spend and # of units on underground structure replacements primarily as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 1	Underground Switch Replacements	$: No, %: No, Units: Yes	Lower spend and number of underground switch replacements primarily as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 1	Worst Circuit Rehabilitation (WCR)	$: Yes, %: Yes, Units: Yes	Lower spend and number of cable replacements primarily as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 1 Pt. 2	Distribution Claim	$: No, %: Yes, Units: No	Higher spend in 2019 because the amount of damage to the distribution system caused by outside parties turned out to be higher than five-year average. The most common cause of damages is when vehicles collide with poles or other above-ground equipment. A five-year average has been accepted as the most appropriate method to forecast costs for damage claims. These damage incidents are random to a substantial degree, and wholly beyond the control of the utility.
SCE-02 Vol: 1 Pt. 2	Distribution Preventive and Breakdown Capital Maintenance	$: Yes, %: Yes, Units: No	Higher spend occurred in 2019 due to work that was deferred from 2018 being completed in 2019. We also experienced a greater use of contractor resources that operated under time and expense structures rather than unit price-based work. Use of such contractors and premium time was necessary to accomplish this additional scope of work.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanation
SCE-02 Vol: 3	Preventive Maintenance	$: No, %: Yes, Units: No	Overrun driven by various projects including (a) Goleta Substation - Switchgear new emergent project not in the original plan; (b) carryover work for Substation Automation System (SAS hybrid) projects that didn't complete in 2018 due to outage and resource constraints or testing relay issues; (c) Imperial SAS scope increase; (d) Moorpark Substation – emergent project to address undersized equipment.
SCE-02 Vol: 3	Substation Emergency Equipment	$: No, %: Yes, Units: No	Overrun primarily due to purchasing transformer banks to support equipment needs at Mira Loma substation.
SCE-02 Vol: 4 Pt. 1	Automation	$: Yes, %: Yes, Units: No	Recorded expenditures for both Reliability-driven and DER-driven Distribution Automation sub-activities are lower than the Commission-authorized amounts due to a number of challenges. These challenges include the timing of the Test Year 2018 GRC Decision. The late issuance of this decision provided SCE with virtually no ability to modify its deployment activities once the Commission’s guidance was received in mid-2019. Additionally, delays in training associated with deploying new equipment also affected 2018 deployments. Emergent efforts to support wildfire mitigation and the associated reprioritizing of resources to support this work reduced SCE's distribution automation deployments in 2019 due to labor resource limitations.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanation
SCE-02 Vol: 4 Pt. 1	Engineering and Planning Software Tools	$: Yes, %: Yes, Units: No	2019 recorded capital expenditures, although higher than the 2019 authorized amount, are consistent with the amount requested in the 2018 GRC. This variance is attributed to two factors. First, SCE received only partial regulatory funding for Engineering &Planning Tools despite the Commission appearing to accept the justifications for the need (Please refer to D.19-05-020, at pp. 146, 156). Second, the complexity in integrating the various E&P software applications is greater than originally estimated. SCE's 2018 GRC estimates were developed with certain assumptions regarding the availability and deployment of commercial off-the-shelf software products. In a number of cases, these products later proved to be unavailable in the market. Grid Mod Engineering and Planning Tools 2020 GRC forecast is $25.1M. SCE believes that the business case for Engineering and Planning Software Tools remains prudent, and that this effort will deliver value to our customers. SCE will evaluate future spend in this effort against other Grid Mod activities to manage overall spend.
SCE-02 Vol: 4 Pt. 2	4 kV Cutovers - Load Growth Driven	$: No, %: Yes, Units: Yes	Lower spend primarily due to decreased projects as a result of deferring efforts in order to focus on wildfire prevention.
SCE-02 Vol: 4 Pt. 2	Distribution Plant Betterment	$: No, %: Yes, Units: No	The Plant Betterment Program consists of a variety of work, some of which intended to mitigate a potential future reliability or safety concern. This work entails, among other things, mitigating voltage issues, adding automation to lessen customer interruptions, and protecting equipment. In 2019, we saw a higher level of this type of work than anticipated during the development of the forecast in SCE's 2018 GRC
SCE-02 Vol: 4 Pt. 2	Distribution Substation Plan (DSP) Circuits	$: Yes, %: Yes, Units: No	Lower spend primarily due to permitting delays in the Goose project in Chalfant Valley.
SCE-02 Vol: 4 Pt. 2	Distribution Substation Plan Substations	$: Yes, %: Yes, Units: No	Underrun for various substation capacity additions or upgrades to facilities. This includes the Safari operational date being deferred from December 2019 to March 2020, due to delays in Safari Site Acquisition. The majority of the civil, electrical and telecom work was pushed out to Q1 2020.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanation
SCE-02 Vol: 4 Pt. 2	Distribution Volt VAR Control and Capacitor Automation Program	$: No, %: No, Units: Yes	The reduction in scope was largely due to changing inspection practices from using dedicated contract inspectors to having SCE employees perform DVVC inspections. This change began in 2018 and continued into 2019. Since SCE completed the initial inspections in 2016 and 2017, we expected the levels from 2018 to carry through into the future, but such levels did not materialize. Also, the lower spend and number of programmable capacitor controller replacements in 2019 reflected the necessary deferral of certain efforts in order to focus on wildfire prevention.
SCE-02 Vol: 4 Pt. 2	New Capacitors	$: No, %: No, Units: Yes	In 2019, SCE installed more of the higher cost pad-mounted units, resulting in a similar total spend but with less units.
SCE-02 Vol: 4 Pt. 2	Substation Equipment Replacement Program	$: No, %: Yes, Units: Yes	Underrun driven by lower volume of replacement for substation equipment identified to exceed their protection ratings to interrupt fault current. The basis of the forecast is the specific circuit breakers to be replaced and the unit costs per voltage classes.
SCE-02 Vol: 5	Distribution Deteriorated Pole Replacement	$: Yes, %: Yes, Units: No	Higher spend primarily due to higher use of contractor time and expense pay, higher contractor overtime, and more overtime for SCE employees than forecast in the 2018 GRC. These costs are part of the Poles Balancing Account, and subject to a total authorized amount for the period 2018 to 2020 and compliance due dates for pole replacements. Spend is also higher due to changes in regulation that resulted in the acceleration of compliance due dates.
SCE-02 Vol: 5	Distribution Pole Loading Program Pole Replacement	$: Yes, %: Yes, Units: No	Higher spend primarily due to higher use of contractor time and expense pay, and higher contractor overtime and more overtime for SCE employees than forecast in the 2018 GRC. These costs are part of the Poles Balancing Account and are subject to a total authorized amount for the period 2018 to 2020, as well as compliance due dates for pole replacements. Spend is also higher due to changes in regulation that resulted in the acceleration of compliance due dates.

VIII.

TRANSMISSION CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

Table VIII-9 below provides the 2021 GRC testimony location, 2021 GRC activity description and indicates if there are any RAMP activity components associated with that GRC activity for all Transmission expense category activities that are deemed SAR-eligible.

Table VIII-9
Transmission Category Expense Activity Descriptions

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 3	Equipment Washing		Includes the cost of labor, materials used, and expenses incurred in performing the equipment washing activity at distribution and transmission substations.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 3	Monitoring Bulk Power System		Grid Operations - Management and Operation of the Grid Control Center. This 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 the following: executing California Independent System Operator (CAISO) instructions regarding operating the SCE electrical system under CAISO operational control; developing and maintaining switching procedures under CAISO's purview; coordinating planned outages in a manner consistent with CAISO approval; and maintaining situation awareness of grid conditions, incidents, and outages. The activities here also include related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense. Grid Network Solutions is responsible for the overall health and performance of SCE's communications network and Supervisory Control and Data Acquisition (SCADA) systems. These capabilities are critical in monitoring and controlling the company's electric grid, and conducting daily business operations.
SCE-02 Vol : 3	Transformer Inspections and Maintenance		Includes the cost of labor, materials used, and expenses incurred in inspecting and maintaining transformers at distribution and transmission substations.
SCE-02 Vol : 6	Transmission Routine Vegetation Management		The expenses here encompass 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 : 5	Transmission Intrusive Pole Inspections		These are costs incurred for intrusive pole inspections of transmission poles. Intrusive inspections require that inspectors with proper training and experience drill into the exterior of the pole to identify and measure the extent of internal decay. Such internal decay typically cannot be detected by external observation alone. Inspectors also perform a visual inspection of the exterior of the pole to check for damage. *Unit Description*: # of Intrusive Pole Inspections

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 5	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 will be identified and then classified for repair or replacement. This activity also encompasses poles in areas with known local conditions such as high winds or loading challenges. *Unit Description*: # of Pole Loading Assessments
SCE-02 Vol : 5	Transmission Pole Loading Repairs		The cost incurred to repair transmission poles as part of the Pole Loading Program. Repairs include designing, installing, or modifying guy wires. *Unit Description*: # of Pole Loading Repairs
SCE-02 Vol : 5	Transmission Request for Attachment Inspections		Costs for Pre-Inspections and Final Inspections of transmission renter attachments to poles.
SCE-02 Vol : 2	Insulator Washing		Includes the labor costs for proactively maintaining 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 residue. 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. Here, the activity includes related costs such as: transportation expenses, meals, traveling, lodging, and incidental expenses.
SCE-02 Vol : 2	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	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.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol : 2	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	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	Transmission O&M Maintenance		Includes the cost of labor, materials used, and expenses incurred in maintaining 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	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 the Commission's General Order 165. This activity also includes SCE's Underground Service Alert (USA) location requests.
SCE-04 Vol : 6	Wildfire Work Order Related Expense Transmission		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.

2. GRC Activities Variances

Table VIII-10 below provides the authorized, recorded, variance and percentage change values for each Transmission expense 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-10
Transmission Category Expense Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Equipment Washing	$1,353	$1,291	$62	5%	0	0	0	0%	No	No	No
Insulator Washing	$596	$1,285	($689)	-54%	0	0	0	0%	No	No	No
Monitoring Bulk Power System	$50,849	$54,330	($3,481)	-6%	0	0	0	0%	No	No	No
Roads and Rights of Way	$3,363	$3,880	($517)	-13%	0	0	0	0%	No	No	No
Telecommunication Inspection and Maintenance	$2,855	$2,968	($114)	-4%	0	0	0	0%	No	No	No
Transformer Inspections and Maintenance	$1,163	$1,461	($298)	-20%	0	0	0	0%	No	No	No
Transmission Intrusive Pole Inspections	$490	$899	($409)	-45%	11,934	12,000	-66	-1%	No	No	No
Transmission Line Patrols	$2,709	$5,560	($2,851)	-51%	0	0	0	0%	No	No	No
Transmission Line Rating Remediation (TLRR)	$22	$8,062	($8,040)	-100%	0	0	0	0%	No	Yes	No
Transmission O&M Maintenance	$12,440	$8,920	$3,520	39%	0	0	0	0%	No	No	No
Transmission Pole Loading Assessments	$1,910	$2,180	($270)	-12%	10,307	23,000	-12,693	-55%	No	No	Yes

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Transmission Pole Loading Repairs	$159	$360	($202)	-56%	50	182	-132	-73%	No	No	Yes
Transmission Request for Attachment Inspections	$356	$277	$79	29%	0	0	0	0%	No	No	No
Transmission Routine Vegetation Management	$36,360	$10,765	$25,595	238%	0	0	0	0%	Yes	Yes	No
Transmission Underground Structure Inspection	$1,999	$1,349	$650	48%	0	0	0	0%	No	No	No
Wildfire Work Order Related Expense Transmission	$2,218	$0	$2,218	-100%	0	0	0	0%	No	No	No

3. Variance Explanations

Table VIII-11 below provides the variance explanations for those GRC activities that met the established thresholds.

Table VIII-11
Transmission Category Expense Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-2 Vol: 2	Transmission Line Rating Remediation (TLRR)	$: No, % : Yes, Units: No	The TLRR forecast is project-based and driven by anticipated project scope rather than historical costs. Recorded expenses for TLRR were below authorized levels due to delays from permitting, outage restrictions, and resourcing constraints that limited SCE's ability to complete the work as originally forecast. In addition, the time required for governing agencies to review and approve projects has proven to be been longer than originally anticipated.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-2 Vol: 5	Transmission Pole Loading Assessments	$: No, % : No, Units: Yes	Transmission Pole Loading Program assessments were lower than authorized due to prioritizing the completion of high-fire poles early in 2019. This necessarily reduced the overall productivity. Also, SCE forecast that 10% of its assessments would be Transmission poles, but the actual percentage turned out to be significantly lower.
SCE-2 Vol: 5	Transmission Pole Loading Repairs	$: No, % : No, Units: Yes	SCE completed approximately 100 additional repairs that have not been closed in the system. This results in higher recorded costs, but does not show up in the recorded units.
SCE-2 Vol: 6	Transmission Routine Vegetation Management	$: Yes, %: Yes, Units: No	SCE's 2018 GRC request was for routine activity only. Wildfire mitigation efforts accelerated the need to take more aggressive action for routine Transmission Vegetation Management activities.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

For all Transmission category activities that are deemed SAR-eligible, Table VIII-12 below provides the 2021 GRC testimony location, 2021 GRC activity description, and indication of whether there are any RAMP activity components associated with that GRC activity.

Table VIII-12
Transmission Category Expenditure Activity Descriptions

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 2	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	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: (1) regular equipment maintenance cycles; (2) maintenance work identified and prioritized through overhead and underground inspection programs; and (3) maintenance identified through observations by field personnel and other activities.
SCE-02 Vol: 2	Transmission Claim		Captures the expenditures associated with casualty damage to Transmission facilities, such as cars hitting and damaging poles. Claim damage events are essentially 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	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	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.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 2	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: 3	Circuit Breaker Replacement		The Transmission Circuit Breaker Replacement Program replaces circuit breakers that are 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. *Unit Description:* # of Circuit Breakers Replaced
SCE-02 Vol: 3	Monitoring Bulk Power System		[Transmission and Distribution] Grid Operations - 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 executing California Independent System Operator (CAISO) instructions regarding the operations of the SCE electrical system under CAISO operational control; developing and maintaining switching procedures under CAISO purview; coordinating planned outages consistent with CAISO approval; and maintaining situational awareness. This category also includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense. [Informational Technology] 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.
SCE-02 Vol: 3	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

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
			functionality.
SCE-02 Vol: 3	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	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	Substation Transformer Bank Replacement		This activity planned includes preemptively replacing transformers that are approaching the end of their service lives. *Unit Description:* # of Substation Transformers Replaced
SCE-02 Vol: 4 Pt. 2	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	Transmission Substation Plan (TSP)		The Transmission Substation Plan (TSP) consists of the Subtransmission Lines Plan, the A-Bank Plan and the Subtransmission VAR Plan. The Subtransmission Lines Plan provides adequate 66 kV or 115 kV line capacity in each of SCE's subtransmission 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 Subtransmission VAR Plan focuses on SCE's system reactive power need to ensure safe and reliable service to customers.
SCE-02 Vol: 5	Telecommunication Deteriorated Pole Replacement		This activity includes replacing telecommunication poles under the Deteriorate Pole Program, in compliance with GO 95.
SCE-02 Vol: 5	Telecommunication Pole Loading Program Replacement		This activity includes replacing telecommunication poles under the Pole Loading Program.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 5	Transmission Deteriorated Pole Replacement		These are costs incurred for intrusively inspecting 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. *Unit Description:* # of Pole Replacements
SCE-02 Vol: 5	Transmission Pole Loading Program Replacement		Costs incurred for assessing Transmission poles for compliance with safety factors. *Unit Description:* # of Pole Replacements
SCE-04 Vol: 2	Transmission/Substation Storm Response Capital		Repair and replacement performed as part of a storm response on Transmission and Substation facilities.
SCE-04 Vol: 4	NERC Compliance Programs		NERC Compliance Programs represent the costs incurred to bring facilities into compliance with physical security standards of NERC-CIP-14.
SCE-04 Vol: 4	Protection of Grid Infrastructure Assets	Grid Infrastructure Protection - Enhanced	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	Protection of Major Business Functions	Smart Key Program Phase 1 - Listed BR/BIA Critical Sites and CS Tier Sites, Non-Electric Facilities/Protection of Major Business Functions - Enhanced	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.

2. GRC Activities Variances

Table VIII-13 below provides the authorized, recorded, variance and percentage change values for each Transmission 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-13
Transmission Category Expenditure Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Circuit Breaker Replacement	$39,148	$46,417	($7,269)	-16%	203	220	-17	-8%	No	No	No
Grid Reliability Projects	$185,738	$271,939	($86,201)	-32%	0	0	0	0%	Yes	Yes	No
Monitoring Bulk Power System	$51,412	$42,056	$9,355	22%	0	0	0	0%	No	No	No
NERC Compliance Programs	$31,572	$10,083	$21,489	213%	0	0	0	0%	Yes	Yes	No
Protection of Grid Infrastructure Assets	$12,952	$28,406	($15,454)	-54%	0	0	0	0%	No	Yes	No
Protection of Major Business Functions	$9,581	$11,107	($1,526)	-14%	0	0	0	0%	No	No	No
Relays, Protection and Control Replacements	$36,402	$57,542	($21,140)	-37%	0	0	0	0%	Yes	Yes	No
Substation Capital Breakdown Maintenance	$17,259	$8,765	$8,494	97%	0	0	0	0%	No	No	No
Substation Claim	($23)	$962	($985)	-102%	0	0	0	0%	No	No	No
Substation Transformer Bank Replacement	$39,442	$70,234	($30,792)	-44%	22	31	-9	-29%	Yes	Yes	Yes
Telecommunication Deteriorated Pole Replacement	$1,817	$0	$1,817	100%	0	0	0	0%	No	No	No
Telecommunication Inspection and Maintenance	$5,384	$6,688	($1,304)	-19%	0	0	0	0%	No	No	No

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Telecommunication Pole Loading Program Replacement	$1	$0	$1	-100%	0	0	0	0%	No	No	No
Transmission Capital Maintenance	$32,865	$37,646	($4,781)	-13%	0	0	0	0%	No	No	No
Transmission Claim	$4,315	$2,979	$1,336	45%	0	0	0	0%	No	No	No
Transmission Deteriorated Pole Replacement	$88,766	$61,388	$27,378	-5%	3,156	2,558	598	23%	Yes	Yes	Yes
Transmission Emergency Equipment	$0	$110	($110)	-100%	0	0	0	0%	No	No	No
Transmission Line Rating Remediation (TLRR)	$116,321	$166,684	($50,364)	-30%	0	0	0	0%	Yes	Yes	No
Transmission Pole Loading Program Replacement	$41,471	$23,471	$18,001	77%	1,227	989	238	24%	No	Yes	No
Transmission Substation Plan (TSP)	$73,942	$226,656	($152,715)	-67%	0	0	0	0%	Yes	Yes	No
Transmission Tools and Work Equipment	$812	$2,017	($1,205)	-60%	0	0	0	0%	No	No	No
Transmission/Substation Storm Response Capital	$9,555	$6,250	$3,305	53%	0	0	0	0%	No	No	No

3. Variance Explanations

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

Table VIII-14
Transmission Category Expenditure Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-02 Vol: 2	Transmission Line Rating Remediation (TLRR)	$: Yes, %: Yes, Units: No	Underrun primarily occurred due to Devers Red Bluff (DBR) project construction being halted in January 2019 due to bird nesting activity. This project was originally planned for completion in March 2019, but the operational date for DRB is now pushed to 2020.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-02 Vol: 3	Relays, Protection and Control Replacements	$: Yes, %: Yes, Units: No	There was an underrun in costs associated with relays, protection and control replacements. We also saw fewer Substation Automation System projects completed, due to delays caused by outage and engineering constraints. Outage constraints refer to instances when other outages or system condition occur that prevent SCE from undertaking a planned outage. Engineering constraints occurred in 2019 due to other programs requiring more engineering than was anticipated in SCE's 2018 GRC.
SCE-02 Vol: 3	Substation Transformer Bank Replacement	$: Yes, %: Yes, Units: Yes	There was an underrun in recorded costs related to the Pearl substation. Transformers were re-allocated and bundled with future rebuild projects as a cost-efficiency measure. There was also an underrun in costs attributed to the Lugo substation. This project was able to utilize a transformer from the Spare Transformer Exchange Program, thus resulting in a credit to the Spare project. Additionally, the Eagle project was deferred because the planned replacement was preceded by an emergency replacement. Villa Park was deferred from 2019 to 2020 to allow coordination with concurrent construction work being completed.
SCE-02 Vol: 4 Pt. 2	Grid Reliability Projects	$: Yes, %: Yes, Units: No	SCE experienced underruns in large projects in Grid Reliability including the Eldorado Lugo Mohave Upgrade, Mesa and Cerritos Channel Relocation. The majority of the spending for these projects is FERC-jurisdictional. The Eldorado Lugo Mohave experienced delays in the CPCN licensing process. This resulted in deferral of project activities (engineering activities, environmental monitoring, etc.) to future years. The Mesa project experienced delays driven mainly by the delay in the completion of Mechanical Electrical Equipment Room (MEER) Building, which was partially due to inclement weather in the first quarter of 2019, and redesign of the Direct Current (DC) control system. The Cerritos Channel Relocation experienced construction installation delays due to foundation design evaluation for lattice steel towers and tubular steel poles caused by geotechnical concerns.
SCE-02 Vol: 4 Pt. 2	Transmission Substation Plan (TSP)	$: Yes, %: Yes, Units: No	SCE spent below-authorized levels as a result of delays in several projects including the Valley-Ivyglen (VIG) project. The delays were driven by scope changes, delays in onboarding EPC (engineer/procure/construct) contractors, delayed risk assessments, and lower load growth affecting commencement of some Transmission Substation Plan projects.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-02 Vol: 5	Transmission Deteriorated Pole Replacement	$: Yes, %: Yes, Units: No	Higher spend primarily occurred due to higher use of contractor time and expense pay, higher contractor overtime, and more overtime for SCE employees than forecast in the 2018 GRC. These costs are part of the Poles Balancing Account, and subject to a total authorized amount for the period 2018 to 2020 and compliance due dates for pole replacements. Spend is also higher due to changes in regulation that resulted in the acceleration of compliance due dates.
SCE-02 Vol: 5	Transmission Pole Loading Program Replacement	$: No, %: Yes, Units: No	Higher spend primarily due to higher use of contractor time and expense pay, higher contractor overtime, and more overtime for SCE employees than forecast in the 2018 GRC. These costs are part of the Poles Balancing Account, and subject to a total authorized amount for the period 2018 to 2020 and compliance due dates for pole replacements. Spend is also higher due to changes in regulation that resulted in the acceleration of compliance due dates.
SCE-04 Vol: 4	NERC Compliance Programs	$: Yes, %: Yes, Units: No	Overrun compared to authorized occurred as a result of NERC CIP14 Physical Security projects. SCE's original forecast was based on project scope tied to an initial interpretation of applicable standards. The project was originally scheduled for completion in 2018. Following extensive consultation with the Western Electric Coordinating Council (WECC), the scope of work was redesigned to include heightened physical security system enhancements. This resulted in increases to project costs. Due to the refinement in scope, the need for certain re-design activities, and permitting delays with local authorities, the completion of the project was rescheduled to 2021. This resulted in higher costs in 2019 compared to SCE's 2018 GRC forecast.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-04 Vol: 4	Protection of Grid Infrastructure Assets	$: No, %: Yes, Units: No	The ($15.5M) underrun is mainly driven by certain Tier 2 projects within the Tier 2 blanket program being delayed until 2020. The Tier 2 delays occurred because of competing work on NERC CIP 014 (Tier 1) projects.[26] In 2017, SCE identified design concerns related to the Tier 1 facility security enhancement program, which led to a pause in executing the program. Although these issues did not arise during proof of concept testing, the issues surfaced during implementation and included pole loading, security and technology analytics performance, cyber protections, and network design on the edge (new way of generating and processing information that puts less strain on our network and improves data analytics). Subsequently, the Tier 1 program delays resulted in delayed execution of enhancements for Tier 2 facilities. Tier 2 facilities share similar design features with Tier I, since Tier 2 design relies on Tier 1 design.

IX.

GENERATION CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

For all Generation expense category activities that are deemed SAR-eligible, Table IX-15 below provides the 2021 GRC testimony location, 2021 GRC activity description, and indication of whether there are any RAMP activity components associated with that GRC activity.

[26] Additional information on the Tiers can be found in SCE's Test Year 2021 GRC Exhibit SCE-04, Vol. 4, p. 33.

Table IX-15
Generation Category Expense Activity Descriptions

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-05 Vol : 1	Catalina - Diesel		Catalina Generation's O&M expenses are for ongoing operations and maintenance activities necessary to carry out safe and reliable 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 reflect the costs for the SCE employees who work at the Pebbly Beach Generating Station as well as additional support provided to the plant by employees that work 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	Mountainview		The Mountainview Operations Work 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 work activity includes all labor, non-labor, and other expenses (e.g., the GE Contractual Service Agreement (CSA) costs) associated with maintaining and repairing the power island and all general plant maintenance-related expenses.
SCE-05 Vol : 1	Palo Verde		This activity 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	Peakers		Includes costs for the SCE employees who are routinely assigned 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.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-05 Vol : 1	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	Hydro	Spillway Remediation and Improvement, Seismic Retrofit, Seepage Mitigation, Low Level Outlet Improvements, Instrumentation / Communication Enhancements, Dam Surface Protection	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 expenditures 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.

2. GRC Activities Variances

Table IX-16 below provides the authorized, recorded, variance and percentage change values for each Generation expense 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 IX-16
Generation Category Expense Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Catalina - Diesel	$5,083	$4,856	$227	5%	0	0	0	0%	No	No	No
Hydro	$41,634	$43,057	($1,423)	-3%	0	0	0	0%	No	No	No
Mountainview	$17,319	$25,252	($7,933)	-31%	0	0	0	0%	No	Yes	No
Palo Verde	$76,692	$84,545	($7,853)	-9%	0	0	0	0%	No	No	No
Peakers	$6,308	$8,039	($1,732)	-22%	0	0	0	0%	No	No	No
Solar	$1,068	$1,650	($582)	-35%	0	0	0	0%	No	No	No

3. Variance Explanations

Table IX-18 below provides the variance explanations for those GRC activities that met the established thresholds.

Table IX-17
Generation Category Expense Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-05 Vol : 1	Mountainview	$: No, % : Yes, Units: No	Mountainview O&M of $17.3M in 2019 is lower than the 2018 GRC authorized amount of $25.3M by ($7.9M) or -31%. Factors contributing to the ($7.9M) underrun for the Mountainview O&M work activity include the following: • ($3M) underrun due to 2020 Major Inspection Overhaul of $9M requested as a levelized amount ($3M/year) for request/recovery purposes, even though there was no related work expected to occur in 2019; • ($1.2M) underrun due to deferral of Mountainview Filtercake project due to pending city permits; and • ($1M) underrun due to negotiated credits from GE for 2018 equipment outages. The remaining underrun occurred due to an unplanned outage that occurred in 2018 but affected spending in 2019, and due to accelerated Mountainview maintenance work from 2019.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

Table IX-18 below provides the 2021 GRC testimony location, 2021 GRC activity description and indicates if there are any RAMP activity components associated with that GRC activity for all Generation category activities that are deemed SAR-eligible.

Table IX-18
Generation Category Expenditure Activity Descriptions

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-04 Vol: 4	Protection of Generation Assets	Protection of Generation Capabilities	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-05 Vol: 1	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	Hydro - Dams and Waterways		Dams and Waterways projects include rebuilding reservoirs, flowlines, or flumes, installing flow measurement equipment, replacing valves, and installing debris removal equipment or fish screens.
SCE-05 Vol: 1	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.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-05 Vol: 1	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 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.
SCE-05 Vol: 1	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	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	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. It also encompasses work on infrastructure such as roads, bridges, paving, fencing and gates, fire and water systems, and wastewater projects. The major projects in this category are replacing high-pressure piping, completing road and bridge improvements, and installing dam safety video surveillance equipment.
SCE-05 Vol: 1	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.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-05 Vol: 1	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	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	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.

2. GRC Activities Variances

Table IX-19 below provides the authorized, recorded, variance and percentage change values for each Generation 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 IX-19
Generation Expenditure Category Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Catalina - Diesel	$5,186	$463	$4,724	1021%	0	0	0	0%	No	No	No
Hydro - Dams and Waterways	$14,964	$15,462	($498)	-3%	0	0	0	0%	No	No	No
Hydro - Decommissioning	$790	$3,098	($2,308)	-74%	0	0	0	0%	No	No	No
Hydro - Electrical Equipment	$5,501	$5,722	($221)	-4%	0	0	0	0%	No	No	No
Hydro - Prime Movers	$3,086	$24,870	($21,784)	-88%	0	0	0	0%	Yes	Yes	No
Hydro - Relicensing	$7,804	$11,998	($4,195)	-35%	0	0	0	0%	No	No	No
Hydro - Structures and Grounds	$7,123	$1,296	$5,826	450%	0	0	0	0%	No	No	No
Mountainview	$2,992	$330	$2,661	805%	0	0	0	0%	No	No	No
Palo Verde	$37,553	$40,796	($3,243)	-8%	0	0	0	0%	No	No	No
Peakers	$1,244	$2,892	($1,648)	-57%	0	0	0	0%	No	No	No
Protection of Generation Assets	$1,794	$0	$1,794	100%	0	0	0	0%	No	No	No
Solar	$3,878	$207	$3,671	1777%	0	0	0	0%	No	No	No

3. Variance Explanations

Table IX-20 below provides the variance explanations for those GRC activities that met the established thresholds.

Table IX-20
Generation Category Expenditure Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-05 Vol: 1	Hydro - Prime Movers	$: Yes, %: Yes, Units: No	Of the total amount authorized, no meaningful spend occurred for the Eastwood - Excitation/Governor/Soft Start Replacement, Turbine Wicket Gates, Runners and Repowers, and Miscellaneous Prime Movers. Additionally, of the amount requested for Generator Coils and Rewinds, there are a number of projects that have not begun, with only the following projects incurring meaningful spend during 2019: o Big Creek 4 Unit 1 - Generator Rewind and Field Pole Assessment o Poole PH Unit 1 - Stator & Rotor Rewind o Bishop 3 Unit 3 - Stator Replacement o Bishop 3 Unit 1 - Rotor Poles Rewind o Bishop 6 Unit 1 - Stator & Rotor Rewind o Bishop 2 Unit 1 - Generator Rewind Generation utilizes a project approval process to help ensure that quality projects that provide customer value get approved and move on to project execution. The Asset Operations Committee (AOC) and Strategic Investment Committee (SIC) forums oversee the process and vote to approve projects based on their technical merits, risk mitigation, and overall value of the solution. Through this process, projects can be reprioritized across the portfolio of generating assets. Here, it was deemed prudent to reprioritize funds authorized for Hydro – Prime Movers project efforts and instead fund Catalina – Diesel, Mountainview and Hydro - Structures and Grounds and Solar overruns. Reprioritization does not indicate a project is no longer valuable and necessary, but allows us flexibility to accelerate and execute projects to address risks and prudently meet operational needs.

X.

OTHER CATEGORY

A. Expensed Programs

1. GRC Activity and Unit Description Table

Table X-21 below provides the 2021 GRC testimony location, 2021 GRC activity description and indicates if there are any RAMP activity components associated with that GRC activity for all Other expense category activities that are deemed SAR-eligible.

Table X-21
Other Category Expense Activity Descriptions

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol : 3 Pt. 1	Training Seat-Time - Distribution Personnel		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 : 2	Business Planning		Business Planning encompasses functions to build and operationalize integrated, risk-informed planning for the enterprise, and includes strategic planning, business planning and financial planning.
SCE-04 Vol : 1	All Hazards Assessment, Mitigation and Analytics	Seismic Building Safety Program, Climate Adpt & Svr Wthr	Resiliency - All Hazards, Assessment, Mitigation & Analytics - includes costs to assess and mitigate hazards such as seismic, climate change, severe weather and other hazards.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-04 Vol : 1	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 : 5	Asset Reliability Risk Analytics		Resiliency - Asset Reliability Risk Analytics - includes cost for predicting wildfire risk of an asset in order to prioritize work repairs and replacements for purposes of minimizing wildfire ignitions.
SCE-04 Vol : 5	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	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-06 Vol : 4	Employee and Contractor Safety	Safety Culture Transformation (Core Program), Safety Controls, Industrial Ergonomics, Contractor Safety Program	Includes all costs associated with salaries, expenses, and consultant services of personnel engaged of Employee and Contractor Safety activities.
SCE-06 Vol : 4	Environmental Management and Development		Environmental Management and Development - Includes salaries and expenses of personnel engaged in Environmental Services (ES) activities. Activities relate to management and oversight of environmental programs. This includes coordination activities involving public, private, and governmental agencies and organizations on environmental matters and issues that affect company operations, including legislative, regulatory, compliance trends, and policies. This activity involves administrative and general activities such as training employees and supporting and maintaining the ES organization. This activity also includes costs for vehicle fleet maintenance (fuel, direct and indirect costs associated with use of vehicles), equipment maintenance, operation of Environmental

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
			Notification Center (ENC), and other miscellaneous program costs.
SCE-06 Vol : 4	Environmental Programs		Environmental Programs - Includes the labor, materials used, and costs incurred for distribution, transmission, generation, and hazardous waste environmental programs. Examples include environmental programs related to Biological and Natural Resources, Avian Protection, Wetlands Permitting Support, Water and Air Quality, Vegetation Management and Weed Abatement, Hazardous Materials and Waste, and Environmental Engineering. For Transmission and Substation Toxic Waste Disposal, this includes payroll, automotive, and other expenses incurred in inspecting, sampling, testing, and cleaning oil products or polychlorinated biphenyl (PCB) contamination caused by leakage and/or spillage, as well as costs incurred to clean up and dispose of hazardous or toxic waste for distribution equipment. Environmental Programs also include expenses associated with the maintenance and monitoring of the San Dieguito Wetlands and Wheeler North Reef Mitigation Projects.
SCE-06 Vol : 4	Public Safety		Includes all costs associated with salaries, expenses, and consultant services for personnel engaged on Public Safety activities.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol : 4	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	Safety Culture Transformation		Includes all costs associated with salaries, expenses, and consultant services for 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-03 Vol : 4	Customer Contact Center		This activity consists of costs associated with the Customer Contact Center to provide customers with telephone access to a SCE representative covering a full array of routine services and the costs for telephone billings and related expenses.
SCE-03 Vol : 2	External Communications	Public Outreach	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-04 Vol : 3	Cyber Software License and Maintenance	Perimeter Defense, Interior Protection, Data Protection, SCADA Cybersecurity, Grid Modernization Cybersecurity	Expenses incurred for licensing and ongoing maintenance of Cyber Security software.
SCE-04 Vol : 3	Cybersecurity Delivery and IT Compliance		Expenses associated with delivering cybersecurity services and monitoring compliance with key cybersecurity related regulations.
SCE-04 Vol : 3	Grid Mod Cybersecurity	Grid Modernization Cybersecurity	Expenses incurred in providing Cybersecurity capabilities for the Grid Mod program.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol : 6	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 policies instituted by state, federal, and local agencies.
SCE-06 Vol : 6	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 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.
SCE-04 Vol : 2	Distribution Storm Response O&M		Resiliency - 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 natural disasters such as earthquakes and forest fires. The storm costs included in this account are switching, locating and isolating trouble on the system, removing 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	Emergency Preparedness and Response	Emergency Mgmt, Fire Mgmt	Costs incurred to maintain expertise and provide direct support to the company and Service territory for emergency management preparedness, response and recovery operations.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-04 Vol : 2	Enhanced Situational Awareness	Enhanced Situational Awareness	Expenses incurred to support the Situational Awareness Center.
SCE-04 Vol : 2	Telecommunication Storm Response O&M		Resiliency - Telecommunication Storm - 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 natural disasters such as earthquakes and forest fires. The storm costs included in this account are switching, locating and isolating trouble on the system, removing 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	Training, Drills and Exercises	Facility Emergency Management Program, Emergency Mgmt.	Costs incurred for the training of employees, and conducting drills and exercises in connection with the Company's response capabilities for various hazards. Such hazards include earthquakes, wildfires, and cyber-attacks.
SCE-04 Vol : 2	Transmission/Substation Storm Response O&M		Resiliency - Transmission/Substation Storm - 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 natural disasters such as earthquakes and forest fires. The storm costs included in this account are switching, locating and isolating trouble on the system, removing 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.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol : 5	Facility and Land Operations	Fire Life Safety Portfolio Assessment, Electrical Inspections, Office Ergonomics (Core Program)	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. This includes leasing for the SCE facility portfolio. CRE Project Management is 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, and 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 relocating and removing SCE facilities.
SCE-06 Vol : 1 Pt. 2	Logistics, Graphics, and Center of Excellence		The Fixed Price Technology and Maintenance work activity includes non-labor for IT Services provided primarily by SCE's Managed Services Providers (MSPs). This activity also includes SCE labor and employee related expenses to oversee and govern performance of IT processes, MSPs' contractual performance, and sourcing.

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol : 1 Pt. 2	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 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. In addition, this work activity includes SCE labor and non-labor for application refresh activities, which consist of managing, upgrading, maintaining, optimizing, monitoring, and testing IT applications and interfaces through their lifecycle.
SCE-06 Vol : 1 Pt. 2	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	Technology Infrastructure Maintenance and Replacement		The Technology Infrastructure Maintenance and Replacement O&M work activity includes labor to manage performance of Managed Services Providers performing acquisition, configuration, installation of infrastructure hardware/software, as well as troubleshooting activities. It also consists of expenses necessary to maintain the IT infrastructure hardware within SCE's production data centers. The capitalized hardware replacements benefit from purchasing prepaid maintenance agreements, typically over five years. After the five-year period ends, the O&M hardware support expenses are accumulated, tracked, and reported through non-labor expenses in this account. This work activity also includes SCE labor and associated non-labor expenses for monitoring and control of the Managed Services Providers' performance in relation to the Service Desk, management

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
			of the third-party vendor contractual obligations and performance for cellular and wireless, product ordering, printing, audio and visual. Finally, it includes managing cellular devices and monthly plans, printers, software licensing renewals, and computer accessories.
SCE-02 Vol : 2	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-04 Vol : 4	Security Technology Operations and Maintenance	Asset Protection	Security Technology, Operations and Maintenance includes two sub-activities: (1) Project Management Office and (2) Break-fix and Preventive Maintenance. The Project Management Office (PMO) implements standards for managing physical security projects, and tracks and prioritizes physical security projects from initiation through completion. The PMO employs best practices established by the Project Management Institute and other project management resources. 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. Components of these systems include turnstiles, electronic identify badge readers, surveillance cameras, request to exit devices, electronic locks, smart keys, intrusion detection equipment (door contacts), gunshot detection, alarm panels, video recording systems, manual key boxes, and radar technology.
SCE-04 Vol : 4	Work Force Protection/Insider Threat	Insider Threat Program Enhancement & Information Analysis - Base, Asset Protection	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)

GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
			administrative and general functions.
SCE-06 Vol : 3	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	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.

2. GRC Activities Variances

Table X-22 below provides the authorized, recorded, variance and percentage change values for each Other expense 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 X-22
Other Category Expense Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
All Hazards Assessment, Mitigation and Analytics	$8,910	$2,307	$6,603	286%	0	0	0	0%	No	Yes	No
Asset Reliability Risk Analytics	$50	$0	$50	-100%	0	0	0	0%	No	No	No
Business Planning	$35,963	$36,916	($952)	-3%	0	0	0	0%	No	No	No
Customer Contact Center	$41,657	$48,258	($6,601)	-14%	0	0	0	0%	No	No	No
Cyber Software License and Maintenance	$7,100	$3,397	$3,702	109%	0	0	0	0%	No	No	No
Cybersecurity Delivery and IT Compliance	$14,537	$15,894	($1,357)	-9%	0	0	0	0%	No	No	No
Develop and Manage Policy and Initiatives	$15,217	$17,769	($2,552)	-14%	0	0	0	0%	No	No	No
Distribution Storm Response O&M	$2,780	$7,781	($5,001)	-64%	0	0	0	0%	No	Yes	No
Education, Safety and Operations	$7,530	$9,037	($1,507)	-17%	0	0	0	0%	No	No	No
Emergency Preparedness and Response	$4,196	$1,927	$2,268	118%	0	0	0	0%	No	No	No
Employee and Contractor Safety	$5,768	$3,266	$2,503	77%	0	0	0	0%	No	No	No
Enhanced Situational Awareness	$338	$0	$338	-100%	0	0	0	0%	No	No	No
Environmental Management and Development	$11,756	$9,579	$2,177	23%	0	0	0	0%	No	No	No

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Environmental Programs	$20,696	$14,972	$5,724	38%	0	0	0	0%	No	Yes	No
External Communications	$11,248	$10,794	$454	4%	0	0	0	0%	No	No	No
Facility and Land Operations	$55,064	$60,359	($5,295)	-9%	0	0	0	0%	No	No	No
Grid Mod Cybersecurity	$1,008	$0	$1,008	-100%	0	0	0	0%	No	No	No
Logistics, Graphics, and Center of Excellence	$3,844	$4,780	($936)	-20%	0	0	0	0%	No	No	No
Operational Compliance	$0	$443	($443)	-100%	0	0	0	0%	No	No	No
Organizational Support	$1,605	$0	$1,605	-100%	0	0	0	0%	No	No	No
Planning, Continuity and Governance	$851	$1,961	($1,110)	-57%	0	0	0	0%	No	No	No
PSPS Execution	$710	$0	$710	-100%	0	0	0	0%	No	No	No
Public Safety	$1,377	($16)	$1,393	8732%	0	0	0	0%	No	No	No
Safety Activities - Transmission & Distribution	$15,725	$13,401	$2,324	17%	0	0	0	0%	No	No	No
Safety Culture Transformation	$1,892	$2,284	($392)	-17%	0	0	0	0%	No	No	No
Security Technology Operations and Maintenance	$5,710	$4,133	$1,576	38%	0	0	0	0%	No	No	No
Software Maintenance and Replacement	$72,802	$62,906	$9,896	16%	0	0	0	0%	No	No	No
Technology Delivery	$10,191	$37,299	($27,108)	-73%	0	0	0	0%	Yes	Yes	No
Technology Infrastructure Maintenance and Replacement	$22,849	$14,409	$8,440	59%	0	0	0	0%	No	Yes	No
Telecommunication Storm Response O&M	$50	$0	$50	-100%	0	0	0	0%	No	No	No
Training Delivery and Development - Transmission and Distribution	$15,302	$13,621	$1,681	12%	0	0	0	0%	No	No	No
Training Seat-Time - Distribution Personnel	$12	$0	$12	-100%	0	0	0	0%	No	No	No
Training Seat-Time - Transmission and Distribution	$21,702	$26,927	($5,225)	-19%	0	0	0	0%	No	No	No
Training, Drills and Exercises	$2,969	$2,540	$429	17%	0	0	0	0%	No	No	No

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Transmission Pole Loading Work Order Related Expense	$10	$205	($195)	-95%	0	0	0	0%	No	No	No
Transmission/Substation Storm Response O&M	$2,141	$1,640	$501	31%	0	0	0	0%	No	No	No
Work Force Protection/Insider Threat	$15,913	$24,837	($8,925)	-36%	0	0	0	0%	No	Yes	No

3. Variance Explanations

Table X-23 below provides the variance explanations for those GRC activities that met the established thresholds.

Table X-23
Other Category Expense Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-04 Vol : 1	All Hazards Assessment, Mitigation and Analytics	$: No, % : Yes, Units: No	The variance of ($6.6M) is due to the Seismic Mitigation and Assessment related expense portion for Electric Infrastructure seismic retrofits. The variance is attributed to two factors: 1) The basis for the related expense is based on historical O&M to capital ratios. At the time the O&M was authorized, there was a lack of recorded projects to derive related expense forecasts. This was because the Seismic program was just starting. There is an increase in the expense ratio based on more recent historical O&M to Capital ratios for Seismic retrofit projects. This leads to a variance with the authorized amounts. 2) The O&M was inadvertently overstated by ~$1.5M in 2019 recorded. Based on re-evaluating what the expense portion should be for a group of impacted projects, the O&M expense has been reversed in 2020 and is reflected in the 2020 O&M total.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-06 Vol : 4	Environmental Programs	$: No, % : Yes, Units: No	Variance is mainly driven by the following: - $4M increased post-construction restoration costs for the Tehachapi Renewable Transmission Project (TRTP) driven by post-construction requirements. These requirements stem from regulatory drivers and permitting requirements (Final Environmental Impact Report (FEIR)/Final Environmental Impact Statement (FEIS), Biological Opinion (BO), Special Use Permit (SUP), Angeles National Forest Record of Decision (ROD), etc.). - $0.6M San Dieguito Wetlands Inlet Opening maintenance cost to clean, excavate and remove sand and sediment from San Dieguito Wetlands flushing inlet, to keep the wetland functioning. This work was unexpected and had not been budgeted for. -$0.5M Maintenance cost to mitigate impacts to visual resources as a result of Tehachapi Renewable Transmission 4-11 project in order to comply with electric transmission line permit issued by Angeles National Forest (ANF). This work was unexpected and had not been budgeted for. $0.3M Additional costs for renewal of permits required for existing equipment/harboring hazardous materials in facilities to avoid fines/penalties from non-compliance. Permitting fees are required to operate SCE facilities under jurisdiction of local, state and federal environmental agencies (CUPAs, AQMD, EPA, etc.).
SCE-04 Vol : 2	Distribution Storm Response O&M	$: No, % : Yes, Units: No	The variance is due to a decrease in the declaration of storm-related events, driven by the following: 1) Storms are declared when three or more circuits in the same district are interrupted during an event (i.e., rain, wind, fire) As a result of SCE's recent efforts in hardening the grid, the number of declared storms events is decreasing on the capital side. This is leading to a decrease in the O&M side via the related expense process. 2) Due to fewer outages, there are less troubleman charges, leading to the decrease in the direct storm O&M for investigating outages and trying to restore service.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-06 Vol : 1 Pt. 2	Technology Infrastructure Maintenance and Replacement	$: No, % : Yes, Units: No	IT's O&M recorded for Technology Infrastructure Maintenance and Replacement of $22.8M in 2019 is higher than the 2018 GRC authorized amount of $14.4M by $8.4M, or 59%. This GRC activity consists of the sub-work activities Data Center Infrastructure and End User Computing Maintenance, Services & Replacement. End User Computing Maintenance, Services & Replacement: 2019 actual of $14.4M is $10.4M higher than authorized of $4.0M in SCE's 2018 GRC. Approximately $11.3M is driven by an accounting methodology change that occurred in 2017. (This was after SCE filed its Test Year 2018 GRC in 2016.) Here, IT products and services costs that were previously billed and recorded in SCE Operating Units (OUs) are now recording directly to IT O&M. This methodology change simplified a complex and time-consuming process of billing costs to the SCE OUs. This is offset by reduced labor costs of ($0.9M). Data Center Infrastructure: 2019 actuals of $8.4M is (2.0M lower than the authorized amount $10.4M. The lower spend is primarily driven by reduced labor costs of $2.5M. This was offset by higher-than-authorized hardware (HW) maintenance spend of $0.5M, due to a change in accounting treatment. This resulted in HW maintenance costs recording to O&M.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-06 Vol : 1 Pt. 2	Technology Delivery	$: Yes, % : Yes, Units: No	IT recorded $10.2M in 2019 for Technology Delivery. This is less than the 2018 GRC authorized amount of $37.3M by ($27.1M) or -73%. Technology Delivery's ($27.1M) underrun was driven by (1) the labor reduction associated with reassigned personnel from Technology Delivery to various other IT departments or activities as a result of the 2017 & 2019 reorganizations which are discussed in more detail below; (2) lower 2019 recorded for O&M projects; and (3) lower Capital Related Expense due to an accounting rule change that lowered capitalization thresholds ($250K instead of $1.0M) and shared Organizational Change Management (OCM) costs with SCE OUs. Labor & Related Expenses: ($13.4M) lower due primarily to the reassignment of labor that occurred as a result of the 2017 & 2019 IT reorganizations. The 2017 reorganization was undertaken as an improvement measure. The reorganization was driven by the need to implement a more modern Plan, Deliver, Run operating model and further streamline processes and gain efficiencies across the teams. The reorganization included reassigning Technology Delivery labor to IT Plan and Service Management Office and Operations (SMOO) functions, as well as to strategic programs such as Grid Modernization or Customer Service Re-Platform (CSRP) that required delivery management skills and expertise. This is offset by labor reassigned to Technology Delivery from Enterprise Architecture & Planning in the 2019 Enterprise Services reorganization. O&M Projects: ($8.9M) SCE spent less than authorized due to de-prioritizing or deferring selected O&M projects in order to focus on more immediate needs and emergent circumstances. Capital-Related Expense: ($4.8M) less than authorized due to a lower threshold for project capitalization from $1.0M to $250,000 and lower Organizational Change Management (OCM) due to increased sharing of OCM costs with SCE's business lines.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-04 Vol : 4	Work Force Protection/Insider Threat	$: No, % : Yes, Units: No	$149K of Work Force Protection/Insider Threat recorded in 2019 is understated and is not "apples to apples" with 2019 Authorized on work activity basis. Due to mapping error, it omits $15.7M of Work Force Protection/Insider Threat activity which is not aligned with the authorized description for the GRC activity. As a result of this mapping error, an errata is scheduled to be filed on or about June 12, 2020 to correct the mapping. Once $15.7M is transferred from the Security Technology and Operations GRC activity to Work Force Protection/Insider Threat activity, the 2019 recorded will be $15.9M (post-adjustment) which is ($8.9M) or -36% lower than the authorized amount of $24.8M. The variance is primarily due to technology advancements and re-prioritization of security officer services across SCE's service territory to optimize protection services at the most critical and vulnerable facilities. As Corporate Security continues to evaluate the criticality and the vulnerabilities of SCE facilities, we assess the level of security needed. Corporate Security may deploy additional security officer services in the future if necessary, based on further assessments.

B. Capital Expenditure Programs

1. GRC Activity and Unit Description Table

Table X-24 below provides the 2021 GRC testimony location, 2021 GRC activity description and indicates if there are any RAMP activity components associated with that GRC activity for all Other category activities that are deemed SAR-eligible

Table X-24
Other Category Expenditure Activity Descriptions

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol: 5	Air Operations		Aircraft Operations includes capital supporting aircraft components, overhauls, tools and helicopter lease buyouts. Aircraft play a critical role in SCE's system reliability by gathering critical information about electric infrastructure situated in locations that are remote and that present significant challenges for access by traditional means. The use of aircraft also helps mitigate safety risks to workers and damages to vehicles and equipment that would otherwise be employed to inspect infrastructure at such challenging locations.
SCE-06 Vol: 5	CRE Project Management	Office Ergonomics (Core Program), Electrical Inspections	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	Facility Asset Management	Office Ergonomics (Core Program), Fire Life Safety Portfolio Assessment	The Facility Capital Management Program was established to request funds for ongoing expenditures of routine 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).

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol: 5	Fleet Asset Management		The activity, Fleet Asset Management (FAM) includes overseeing the planning and strategy of vehicle replacements, dispositions and additions, and designing and delivering SCE fleet vehicle assets, fleet telematics administration, and vehicle rentals. This includes annual vehicle replacements and additions planned through real-time evaluation of organizational requirements. 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. FAM's Vehicle Acquisition unit oversees purchase order contracts for the fleet, manages the delivery of and in-service protocols for each vehicle, manages a network of rental suppliers, negotiates favorable agreements with the Supply Management team, and processes rental requests. Fleet Planning and Strategy oversees telematics equipment use, manages the relationship with telematics technology vendors, engages with drivers on use of the technology to promote safe and more efficient operation of the vehicles, and analyzes data concerning fleet fuel costs, vehicle usage, and operational issues with the vehicles.
SCE-04 Vol: 1	All Hazards Assessment, Mitigation and Analytics		Resiliency - All Hazards, Assessment, Mitigation & Analytics includes costs to assess and mitigate hazards such as seismic, climate change, severe weather and other hazards.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol: 5	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-02 Vol: 4 Pt. 1	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 third 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 help 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. (4) WAN: The fiber-optic cable that provides the crucial communications link between the FAN, CSP, substations and SCE's operations control centers.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-02 Vol: 4 Pt. 1	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 integrated grid management capabilities. The Advanced Distribution Management System (ADMS), as one of the GMS systems, will provide combined DMS/OMS functionality.
SCE-02 Vol: 4 Pt. 1	Laboratory Operations		The Grid Technology Laboratories allow SCE to safely evaluate, test, and pilot new and emerging 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.
SCE-02 Vol: 3	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	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-05 Vol: 2	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.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-04 Vol: 3	Cybersecurity Delivery and IT Compliance		Provides cybersecurity and monitors compliance with key cybersecurity-related regulations.
SCE-04 Vol: 3	Grid Mod Cybersecurity	Grid Modernization Cybersecurity	Cybersecurity programs related to the implementation of the Grid Mod Program.
SCE-02 Vol: 1 Pt. 2	Technology Solutions	Protection of Generation Capabilities, Non-Electric Facilities/Protection of Major Business Functions - Enhanced, Asset Protection	Costs incurred for Capitalized Software solutions in support of the distribution business planning.
SCE-06 Vol: 4	Environmental Programs		Environmental Programs includes the labor, materials used, and costs incurred for distribution, transmission, generation, and hazardous waste environmental programs. Examples include environmental programs related to Biological and Natural Resources, Avian Protection, Wetlands Permitting Support, Water and Air Quality, Vegetation Management and Weed Abatement, Hazardous Materials and Waste, and Environmental Engineering. For Transmission and Substation Toxic Waste Disposal, this includes payroll, automotive, and other expenses incurred in inspecting, sampling, testing, and cleaning oil products or polychlorinated biphenyl (PCB) contamination caused by leakage and/or spillage, as well as costs incurred to clean-up and dispose of hazardous or toxic waste for distribution equipment. Environmental Programs also include expenses associated with maintaining and monitoring the San Dieguito Wetlands and Wheeler North Reef Mitigation Projects.

2021 - GRC Testimony Location	GRC 2021 Activity	RAMP Control/Mitigation	GRC 2021 Activity Description
SCE-06 Vol: 1 Pt. 2	Software Maintenance and Replacement		The Software Maintenance and Replacement work activity includes SCE labor and non-labor costs required to maintain 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 advantage of the underlying hardware features and functions. In addition, this work activity includes SCE labor and non-labor for application refresh activities, which consist of the management, upgrade, maintenance, optimization, monitoring, and testing of IT applications and interfaces through their lifecycle.
SCE-06 Vol: 1 Pt. 2	Technology Infrastructure Maintenance and Replacement		The Technology Infrastructure Maintenance and Replacement work activity includes labor to manage performance of Managed Services Providers performing acquisition, configuration, installation of infrastructure hardware/software, as well as troubleshooting activities. It also consists of expenses necessary to maintain the IT infrastructure hardware within SCE's production data centers and are provided through support agreements with the respective hardware vendors. The capitalized hardware replacements benefit from purchasing prepaid maintenance agreements, typically over five years. After the five-year period ends, the hardware support expenses are accumulated, tracked, and reported through non-labor expenses in this account. This work activity also includes SCE labor and associated non-labor expenses for monitoring and control of the Managed Services Providers' performance in relation to the Service Desk, management of the third-party vendor contractual obligations and performance for cellular and wireless, product ordering, printing, audio and visual. Finally, it includes managing cellular devices and monthly plans, printers, software licensing renewals, computer accessories, and printers.

2. GRC Activities Variances

Table X-25 below provides the authorized, recorded, variance and percentage change values for each Other 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 X-25
Other Category Expenditure Activity Variance Calculations

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Air Operations	$2,320	$6,513	($4,192)	-64%	0	0	0	0%	No	No	No
All Hazards Assessment, Mitigation and Analytics	$44,981	$35,034	$9,947	28%	0	0	0	0%	No	No	No
Communications	$13,483	$29,273	($15,790)	-54%	0	0	0	0%	No	Yes	No
Communications Equipment	$744	$1,945	($1,200)	-62%	14	75	-61	-81%	No	No	Yes
CRE Project Management	$56,847	$96,790	($39,943)	-41%	0	0	0	0%	Yes	Yes	No
Cybersecurity Delivery and IT Compliance	$44,701	$42,903	$1,798	4%	0	0	0	0%	No	No	No
Environmental Programs	$680	$694	($14)	-2%	24	15	9	60%	No	No	Yes
Facility Asset Management	$58,458	$30,154	$28,304	94%	0	0	0	0%	Yes	Yes	No
Fleet Asset Management	$2,232	$2,404	($172)	-7%	0	0	0	0%	No	No	No
Fleet Operations and Maintenance	$445	$479	($34)	-7%	0	0	0	0%	No	No	No

GRC Activity	Recorded Costs ($000)	Authorized Costs ($000)	Difference ($000)	% Change	Actual Units	Authorized Units	Difference (Units)	% Change (Units)	$ Threshold Variance Explanation	% $ Variance Explanation	Unit Variance Explanation
Grid Management System	$32,217	$40,750	($8,534)	-21%	0	0	0	0%	No	No	No
Grid Mod Cybersecurity	$26,136	$8,341	$17,795	213%	0	0	0	0%	No	Yes	No
Laboratory Operations	$776	$3,683	($2,907)	-79%	0	0	0	0%	No	No	No
Oil Containment Diversion System	$635	$558	$77	14%	0	0	0	0%	No	No	No
Software Maintenance and Replacement	$19,100	$11,671	$7,429	64%	0	0	0	0%	No	No	No
Substation Switchrack Rebuild	$13,382	$19,443	($6,061)	-31%	3	3	0	0%	No	No	No
Technology Infrastructure Maintenance and Replacement	$51,778	$53,706	($1,928)	-4%	0	0	0	0%	No	No	No
Technology Solutions	$99,383	$111,894	($12,510)	-11%	0	0	0	0%	No	No	No

3. Variance Explanations

Table X-26 below provides the variance explanations for those GRC activities that met the established thresholds.

Table X-26
Other Category Expenditure Activity Variance Explanations

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-06 Vol: 5	CRE Project Management	$: Yes, %: Yes, Units: No	Variance is mainly driven by the following: - SCE experienced a $32M Underrun in the T&D Training Facility project, due to a delay in locating a viable site. SCE decided to leverage an existing Rancho Vista property to build the facility in lieu of purchasing a new property. While this pushed the project timeline to the 2020-2022 period, it reduced the project forecast by 51% while still meeting the operational needs and providing a safe training facility in the preferred metro geographic location. - $7M Underrun in Garage Infrastructure Upgrade Program due to postponement of the project to address manufacturer changes for electrified vehicle specifications and to conduct benchmarking and design studies. The Project is currently planned in the 2021 GRC period. - $5M Underrun in Long Beach Regional Office (LBRO) Infrastructure Upgrade project due to cancellation of the project because the planned use of the facility had materially changed. - $3M Underrun in Substation Reliability Program which addresses the needs of aging and poor facility conditions at substation maintenance and test buildings. The decrease is due to delays driven by scope changes, and schedule delays for Rector and Devers maintenance and test buildings. - ($7M) Overrun in all other projects mainly driven by SCE general office workplace upgrades, Ongoing Furniture Modifications, and Ergo Equipment. Business cases for each of the projects were developed and approved to support ongoing SCE operations and work requirements.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-06 Vol: 4	Environmental Programs	$: No, %: No, Units: Yes	Environmental Services decommissioned nine additional wells in early 2019 because these wells were relatively simple to permit and decommission. They were shallow, had small diameter well casing, and were clustered in the same general location.
SCE-06 Vol: 5	Facility Asset Management	$: Yes, %: Yes, Units: No	Variance is mainly driven by: - $19M Overrun due to increased spending on Non-Electric capital maintenance projects including facility capital maintenance ($11M), obsolescence remodels ($7M), and fire life safety ($1M). The increase is driven by growth related to ongoing capital maintenance requirements to maintain the safety and productivity of SCE workplaces, maintain facilities to prevent significant and unplanned facility or building equipment outages, continually address compliance requirements, and provide safe and reliable environments for the SCE workforce and the general public. - $3M Overrun due to increased spending on Substation capital maintenance projects to respond to maintenance incidents as they occur. There was also increased spending in proactive capital maintenance program to repair or replace building systems and components that are damaged, degraded, non-operational, non-compliant, or that have reached their end of useful life. The increase in spending is due to growth in deficient building conditions in terms of roofs, pavement, plumbing, and lighting. The spend was also driven by the need to address lead/asbestos found in walls, ceilings, and floor tiles. - $6M Overrun due to increase in Safety Compliance Operation Reliability (SCOR) Program. This program supports capital project requests from other SCE Operating Units (OU) that require assistance in support of operations driven by Safety, Compliance, Operations, and Reliability. The increase is driven by incremental Fire Life Safety improvements, evolving maintenance requirements, internal customer business requirements, changing conditions, reliability of equipment, and new code requirements. - $1M Overrun due to spending on Arc Flash Compliance Upgrade Program. The program was included in SCE's 2018 Risk Assessment Mitigation Phase Report. The program entails developing and implementing an arc flash avoidance program by

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
			conducting thermal infrared surveys, and making prudent upgrades to the electrical system components for facilities.
SCE-02 Vol: 4 Pt. 1	Communications	$: No, %: Yes, Units: No	SCE adopted a "go slow" strategy in response to the timing impact of the 2018 GRC Decision. This extended project timelines and decreased near-term spend in certain workstreams. Reductions in the Field Area Network (FAN), Fiber and Common Substation Platform (CSP) projects were driven by the ability to mitigate saturation of existing field communications network. This allowed us to defer replacement. Specifically, the FAN project spend shifted to 2021-2023 and the Common Substation Platform (CSP) was paused to align with FAN. Grid Mod Communications 2020 GRC forecast is $15.5M. SCE will evaluate future spend in this effort against other cybersecurity activities to manage overall spend.
SCE-05 Vol: 2	Communications Equipment	$: No, %: No, Units: Yes	The underspend was due to fewer facilities forecast than executed, a slowdown in SCE's RPS procurement activities, and contract terminations. Contract terminations were a result of contracts expiring, sellers failing to develop their project due to permitting or other issues, and other failures to meet their contractual obligations. Unit measurement is based on the historical resource onboarding operations. It also factors in the estimated number of resources that become operational each year as they are used to support the onboarding and equipping of each facility with the required communications technology. When contracts are signed, their commercial operation dates (COD -The date the project starts delivering energy) vary based on multiple factors. Many of these factors are out of SCE's control. Currently, the greatest impact to any project delay is permitting. Based on the amount of time it takes a contractor to meet all permitting requirements, the COD can be delayed. Or, if resources are unable to meet contractual requirements for COD, the project may be terminated.

GRC Testimony Location	GRC 2021 Activity	Variance Threshold Triggers	Variance Explanations
SCE-04 Vol: 3	Grid Mod Cybersecurity	$: No, %: Yes, Units: No	The 2019 recorded expenditures were consistent with SCE's request in the 2018 GRC. However, the variance reflects the CPUC's 2018 GRC approval of approximately 40% of SCE's request. In addition, unanticipated complexities arose with the Grid Modernization Cybersecurity architecture definition and design documentation. This necessitated additional technology support. The Grid Mod Cybersecurity 2020 GRC forecast is $24.9M. SCE believes that the business case for Grid Mod Cybersecurity remains prudent in light of the complex and evolving cybersecurity situation. SCE will evaluate future spend in this effort against other cybersecurity activities to manage overall spend.

XI.

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

A. Background

Consistent with guidance received from Energy Division via an April 2020 letter from Energy Division, we have excluded the balancing and memorandum account costs from the comparison of 2019 authorized and recorded safety, reliability and maintenance capital and O&M costs presented in Sections VII-X.[27] The Spending Accountability Report Letter required SCE to provide, if applicable, the balancing or memorandum account(s) where the spending for each program is recorded, the recorded year balances, and the disposition of any request for cost recovery. Table XI-27 below lists the beginning and ending balances in each relevant balancing and memorandum account and mechanism for disposition; it is followed by a discussion of the costs, broken down between non-wildfire and wildfire-related activities.

[27] April 10, 2020 letter from Energy Division to SCE.

Table XI-27
Balancing and Memorandum Account Balances
($000)

Balancing/Memorandum Account	2019 Beginning Balance	2019 Ending Balance	Mechanism for Disposition
Mobilehome Park Master Meter Balancing Account (MMMBA)	$0	$0	Year-end advice letter, $19,895 transferred to BRRBA in Dec 2019
Grid Safety and Resiliency Program Memorandum Account (GSRPMA)	$0	$29,773	A.18-09-002
Fire Hazard Prevention Memorandum Account(FHPMA)	$31,171	$199,761	Track 2 of the GRC
Wildfire Mitigation Plan Memorandum Account (WMPMA)	$0	$265,639	Track 2 of the GRC
Fire Risk Mitigation Memorandum Account (FRMMA)	$0	$7,502	Track 2 of the GRC
Drought Catastrophic Event Memorandum Account (CEMA)	$79,970 (adjusted beginning balance)	$112,482	Standalone Application
Catastrophic Event Memorandum Account (CEMA) Fires*	$0	$70,926	Standalone Application
*The activity recorded in the CEMA Fires account in 2019 relates to 2017 events, which is the subject of a pending application (A.19-07-021). The incremental costs related to the 2019 events will be recorded in the account at a later date.			

B. Non-Wildfire Activities

SCE has identified one regulatory mechanism that is relevant to non-wildfire activities.

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). The program directs SCE to convert approximately ten percent of the spaces within its service territory over the pilot program's three-year term. This decision authorized the creation of a balancing account for recording actual MHP program costs. On July 9, 2014, SCE filed Advice 3072-E to establish the Mobilehome Park Master Meter Balancing Account (MMMBA). The purpose of this balancing is to record the incremental costs associated with the conversion of the master-metered service. 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. This includes 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 December 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 Letter 4126-E on December 17, 2019 addressing the 2019 operation of the MMMBA. Table X below provides the 2019 recorded O&M and capital expenditures associated with the MHP conversion pilot program. Table XI-28 below summarizes the expense and capital expenditures for 2019 for the MHP conversion pilot program.

Table XI-28
2019 O&M Expense and Capital Expenditures for MHP ($000s)

Activity	O&M Expense	Capital Expenditure	Ratemaking Account
Mobile Home Park	$219	$45,125	MMMBA

C. Wildfire Activities

SCE has identified five regulatory mechanisms that are relevant to wildfire activities. The first four, the Grid Safety and Resiliency Program Memorandum/Balancing Account (GSRPMA/BA), Fire Hazard Prevention Memorandum Account (FHPMA), Wildfire Mitigation Plan Memorandum Account (WMPMA), and Fire Risk Mitigation Memorandum Account (FRMMA), collectively referred to as Fire Mitigation MAs, are related to wildfire mitigation activities. The 2019 costs recorded in the Fire Mitigation MAs are the subject of Track 2 of SCE's 2021 GRC (for reasonableness review and recovery of amounts recorded in the FHPMA,

WMPMA, and FRMMA) and SCE's recently-approved Grid Safety and Resiliency Program (GSRP) Application.

The fifth one is SCE's Catastrophic Event Memorandum Account (CEMA), which tracks the costs of restoring service and repairing apparatus and facilities after a defined catastrophic event (including a catastrophic wildfire event), or the costs of complying with government orders in connection with a catastrophic event. The 2019 costs recorded in SCE's CEMA will be the subject of a cost recovery application. SCE expects to file this application later in 2020.

First, there are costs recorded in the Grid Safety and Resiliency Program Memorandum / Balancing Account (GSRPMA/BA). SCE filed its Grid Safety and Resiliency Program (GSRP) Application on September 10, 2018. This application proposed deploying new wildfire mitigation technologies and activities between September 2018 and December 2020 that were not included in SCE's 2018 GRC. These technologies and activities included SCE's Wildfire Covered Conductor Program (the replacement of standard "bare" overhead conductors with "covered" conductors), the installation of new fuses that activate quickly to reduce the energy transmitted to faults, and additional measures to reduce outage impacts during wildfire and Public Safety Power Shutoff (PSPS) events.

Pursuant to D.19-01-019, SCE tracked these costs in the GSRPMA during the pendency of the proceeding; the incremental amounts spent in 2019 are provided in Table XI-29. Ultimately, these 2019 GSRP expenditures are approved for cost recovery pursuant to D.20-04-013, which authorizes $463.5 million in GSRP capital expenditures and $123.1 million in GSRP O&M.[28] [29]

Second, there are costs recorded in the Fire Hazard Prevention Memorandum Account (FHPMA). In D.17-12-024, issued on December 14, 2017, the Commission adopted new

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[28] Nominal dollars, including 115% reasonableness threshold for the Wildfire Covered Conductor Program. *See* Advice 4197-E

[29] D.20-04-013 also authorizes SCE to record GSRP costs above those authorized in the decision in the GSRPBA for reasonableness review and recovery in Track 3 of SCE's 2021 GRC.

regulations to enhance the fire safety of overhead electric power lines and communication lines in high fire-threat areas. Pursuant to D.17-12-024, SCE is inspecting and pruning trees to meet the Commission's new 48-inch clearance requirement in the expanded Tier 2 and Tier 3 areas. SCE is also increasing the trimming distance to reflect the Commission's new recommended time-of-trim clearances. The incremental costs of these vegetation management activities are being recorded in the FHPMA, and the incremental amounts spent in 2019 are provided in Table XI-29 below. SCE is seeking recovery of its 2019 costs recorded in the FHPMA in Track 2 of its 2021 GRC.

Third, there are costs recorded in the Wildfire Mitigation Plan Memorandum Account (WMPMA). Pursuant to D.19-05-038, the WMPMA is used to record costs that are:

- Incurred to implement SCE's approved WMP that are not currently reflected in other Commission revenue requirements being paid by customers in rates (*e.g.,* in Commission-approved GRC base rates revenue requirements),
- Not pending approval by the Commission via a separate SCE proposal (*e.g.,* in SCE's GSRP application), and
- Not being tracked in an existing Commission-authorized memorandum account (*e.g.,* FHPMA or the Catastrophic Event Memorandum Account described below).

Accordingly, the WMPMA was used to track the incremental costs of activities such as: SCE's Enhanced Overhead Inspection (EOI) program, which inspects all distribution and transmission structures in SCE's High Fire Risk Areas (HFRA) and performs associated necessary remediations, new vegetation management activities in HFRA such as expanded pole brushing and LIDAR inspections, and overall Program Management Office support to manage SCE's suite of wildfire mitigation activities. The incremental amounts spent in 2019 are provided in Table XI-29. In Track 2 of its Test Year 2021 GRC, SCE is seeking to recover its 2019 costs recorded in the WMPMA

Fourth, there are costs recorded in the Fire Risk Mitigation Memorandum Account (FRMMA). Pursuant to Public Utilities Code Section 8386(j), and as described in Advice 3936-

E, the FRMMA is used to record the costs of wildfire mitigation activities that are not found in the approved annual Wildfire Mitigation Plan or otherwise authorized/tracked in another ratemaking account.

Accordingly, the FRMMA was used to the track the incremental costs of activities such as: the public education campaign designed to educate customers about PSPS events, and organizational change management activities such as employee communications and training. The incremental amounts spent in 2019 are provided in Table XI-29 below. SCE is seeking recovery of its 2019 costs recorded in the FRMMA in Track 2 of its 2021 GRC.

Table XI-29
2019 O&M Expense and Capital Expenditures for Wildfire Activities
(Total Company $000s)

2021 GRC Activity	O&M Expenses	Capital Expenditure	Ratemaking Account
Distribution Fault Anticipation	$154	$2,331	WMPMA
Enhanced Overhead Inspections and Remediations	$300,423	$302,928	WMPMA
Enhanced Situational Awareness	$2,748	$5,252	GSRPMA/BA
Fire Science and Advanced Modeling	$2,205	$6,486	GSRPMA/BA
Fusing Mitigation	$258	$69,680	GSRPMA/BA
HFRA Sectionalizing Devices	$419	$11,949	GSRPMA/BA
PSPS Execution	$18,226	$585	GSRPMA/BA / FRMMA
Wildfire Covered Conductor Program	N/A	$249,269	GSRPMA/BA
Distribution Routine Vegetation Management	$2,502	N/A	FHPMA
Fire Hazard Prevention	$167,414	N/A	FHPMA
Grid Resiliency PMO	$35,085	N/A	WMPMA
Organizational Support	$2,371	N/A	WMPMA / FRMMA
Training Delivery and Development - Transmission and Distribution	$716	N/A	WMPMA / FRMMA
Training Seat-Time - Transmission and Distribution	$729	N/A	WMPMA / FRMMA
Transmission Routine Vegetation Management	$2,701	N/A	FHPMA
Wildfire Vegetation Management	$15,271	N/A	WMPMA, GSRPMA/BA
Wildfire Work Order Related Expense Distribution	$213	N/A	WMPMA, GSRPMA/BA
Total	**$551,435**	**$648,480**	**-**

Finally, there are costs reflected in this report that are recorded in the Catastrophic Event Memorandum Account (CEMA) as shown below in Table XI-30. 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 an application in 2020 to seek recovery of costs recorded in the CEMA for the 2019 Drought costs and for 2019 catastrophic Firestorms (Saddleridge, Eagle, Sandalwood, Reche, Wolf, and Tick).

Table XI-30
2019 O&M Expense and Capital Expenditures for CEMA
($000s)

GRC Activity	O&M Expense	Capital Expenditure	Ratemaking Account
Distribution Storm Response	N/A	$25,217	CEMA
Dead, Dying and Diseased Tree Removal	$28,418	N/A	CEMA
Hydro - Structures and Grounds	$2,186	N/A	CEMA
Totals	**$30,604**	**$25,217**	**-**

Appendix 1

RISK MITIGATION MAPPING

WP ON RAMP TO GRC ACTIVITY MAPPING

Business Planning Group	Business Planning Element	SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	RAMP Risk	RAMP ID	RAMP Control / Mitigation Name
Customer Interactions	Communications, Education & Outreach	External Communications	3	2	Contact with Energized Equipment	C2	Public Outreach
Distribution Grid	Infrastructure Replacement	Cable Life Extension (CLE) Program	2	1	Underground Equipment Failure	C2	Cable Replacement Programs (CIC)
Distribution Grid	Infrastructure Replacement	Cable-in-Conduit (CIC) Replacement Program	2	1	Underground Equipment Failure	C2	Cable Replacement Programs (CIC)
Distribution Grid	Infrastructure Replacement	Overhead Conductor Program (OCP)	2	1	Contact with Energized Equipment / Wildfire	C1 / C1a	Overhead Conductor Program (OCP)
Distribution Grid	Infrastructure Replacement	Underground Structure Replacements	2	1	Underground Equipment Failure	M1	Cover Pressure Relief and Restraint (CPRR) Program
Distribution Grid	Infrastructure Replacement	Underground Switch Replacements	2	1	Underground Equipment Failure	C3	UG Oil Switch Replacement Program
Distribution Grid	Infrastructure Replacement	Worst Circuit Rehabilitation (WCR)	2	1	Underground Equipment Failure	C1	Cable Replacement Programs (WCR)
Distribution Grid	Vegetation Management	Wildfire Vegetation Management	2	6	Wildfire	M5	Expanded Vegetation Management
Enterprise Support	Employee Benefits & Programs	Recognition	6	3	Employee, Contractor & Public Safety	C1	Safety Controls
Enterprise Support	Employee Support	Talent Solutions	6	3	Physical Security	C4	Asset Protection
Enterprise Support	Employee Training & Development	Training and Development	6	3	Employee, Contractor & Public Safety	M1a	Safety Culture Transformation (Core Program)
Enterprise Support	Employee Training & Development	Training and Development	6	3	Physical Security	C4	Asset Protection
Enterprise	Employee Training &	Training and	6	3	Physical Security	M1a	Insider Threat Program

Business Planning Group	Business Planning Element	SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	RAMP Risk	RAMP ID	RAMP Control / Mitigation Name
Support	Development	Development					Enhancement & Information Analysis - Base
Enterprise Support	Enterprise Technology	Technology Solutions	6	1. Pt. 2	Physical Security	C2	Protection of Generation Capabilities
Enterprise Support	Enterprise Technology	Technology Solutions	6	1. Pt. 2	Physical Security	C3b	Non-Electric Facilities/Protection of Major Business Functions - Enhanced
Enterprise Support	Facility & Land Operations	Facility & Land Operations	6	5	Building Safety	M1	Fire Life Safety Portfolio Assessment
Enterprise Support	Facility & Land Operations	Facility & Land Operations	6	5	Building Safety	M2	Electrical Inspections
Enterprise Support	Facility & Land Operations	Facility & Land Operations	6	5	Employee, Contractor & Public Safety	M3a	Office Ergonomics (Core Program)
Enterprise Support	Legal	Workers' Compensation	6	2	Employee, Contractor & Public Safety	C1	Safety Controls
Enterprise Support	Safety Programs	Employee and Contractor Safety	6	4	Employee, Contractor & Public Safety	C1	Safety Controls
Enterprise Support	Safety Programs	Employee and Contractor Safety	6	4	Employee, Contractor & Public Safety	C2	Contractor Safety Program
Enterprise Support	Safety Programs	Employee and Contractor Safety	6	4	Employee, Contractor & Public Safety	M1a	Safety Culture Transformation (Core Program)
Enterprise Support	Safety Programs	Employee and Contractor Safety	6	4	Employee, Contractor & Public Safety	M2	Industrial Ergonomics
Generation	Hydro	Hydro	5	1	Hydro Asset Safety	C1	Seismic Retrofit
Generation	Hydro	Hydro	5	1	Hydro Asset Safety	C2	Dam Surface Protection
Generation	Hydro	Hydro	5	1	Hydro Asset Safety	C3	Spillway Remediation and Improvement
Generation	Hydro	Hydro	5	1	Hydro Asset Safety	C4	Low Level Outlet

Business Planning Group	Business Planning Element	SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	RAMP Risk	RAMP ID	RAMP Control / Mitigation Name
							Improvements
Generation	Hydro	Hydro	5	1	Hydro Asset Safety	C5	Seepage Mitigation
Generation	Hydro	Hydro	5	1	Hydro Asset Safety	C6	Instrumentation / Communication Enhancements
Resiliency	Business Continuation	All Hazards Assessment, Mitigation & Analytics	4	1	Building Safety	C1	Seismic Building Safety Program
Resiliency	Business Continuation	All Hazards Assessment, Mitigation & Analytics	4	1	Climate Change	M1	Climate Adpt & Svr Wthr
Resiliency	Cybersecurity	Cyber Delivery	4	3	Cyber Attack	C1a	Perimeter Defense
Resiliency	Cybersecurity	Cyber Delivery	4	3	Cyber Attack	C2a	Interior Protection
Resiliency	Cybersecurity	Cyber Delivery	4	3	Cyber Attack	C3a	Data Protection
Resiliency	Cybersecurity	Cyber Delivery	4	3	Cyber Attack	C4a	SCADA Cybersecurity
Resiliency	Cybersecurity	Cyber Delivery	4	3	Cyber Attack	C5a	Grid Modernization Cybersecurity
Resiliency	Cybersecurity	Cyber Software License & Maint	4	3	Cyber Attack	C1a	Perimeter Defense
Resiliency	Cybersecurity	Cyber Software License & Maint	4	3	Cyber Attack	C2a	Interior Protection
Resiliency	Cybersecurity	Cyber Software License & Maint	4	3	Cyber Attack	C3a	Data Protection
Resiliency	Cybersecurity	Cyber Software License & Maint	4	3	Cyber Attack	C4a	SCADA Cybersecurity
Resiliency	Cybersecurity	Cyber Software License & Maint	4	3	Cyber Attack	C5a	Grid Modernization Cybersecurity
Resiliency	Cybersecurity	Grid Mod Cybersecurity	4	3	Cyber Attack	C5a	Grid Modernization Cybersecurity
Resiliency	Emergency Management	Emergency Preparedness & Response	4	2	Climate Change	C1	Emergency Mgmt
Resiliency	Emergency Management	Emergency Preparedness &	4	2	Climate Change	C2	Fire Mgmt

Business Planning Group	Business Planning Element	SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	RAMP Risk	RAMP ID	RAMP Control / Mitigation Name
		Response					
Resiliency	Emergency Management	Training, Drills and Exercises	4	2	Building Safety	C2	Facility Emergency Management Program
Resiliency	Emergency Management	Training, Drills and Exercises	4	2	Climate Change	C1	Emergency Mgmt
Resiliency	Physical Security	Protection of Generation Assets	4	4	Physical Security	C2	Protection of Generation Capabilities
Resiliency	Physical Security	Protection of Grid Infrastructure Assets	4	4	Physical Security	C1b	Grid Infrastructure Protection - Enhanced
Resiliency	Physical Security	Protection of Major Business Functions	4	4	Physical Security	C3b	Non-Electric Facilities/Protection of Major Business Functions - Enhanced
Resiliency	Physical Security	Protection of Major Business Functions	4	4	Physical Security	M2	Smart Key Program Phase 1 - Listed BR/BIA Critical Sites and CS Tier Sites
Resiliency	Physical Security	Security Technology Operations and Maintenance	4	4	Physical Security	C4	Asset Protection
Resiliency	Physical Security	Workforce Protection and Insider Threat	4	3	Physical Security	C4	Asset Protection
Resiliency	Physical Security	Workforce Protection and Insider Threat	4	4	Physical Security	M1a	Insider Threat Program Enhancement & Information Analysis - Base
Resiliency	Wildfire Management	Fusing Mitigation	4	5	Wildfire	M8	Fusing Mitigation
Resiliency	Wildfire Management	HFRA Sectionalizing Devices	4	5	Wildfire	M2	Remote-Controlled Automatic Reclosers and Fast Curve Settings
Resiliency	Wildfire Management	Infrared Inspections	4	5	Contact with Energized / Wildfire Equipment	M4	Infrared Inspections
Resiliency	Wildfire Management	PSPS Protocol Support Functions	4	5	Wildfire	M3	PSPS Protocol and Support Functions
Resiliency	Wildfire Management	Situational Awareness	4	5	Wildfire / Climate Change	M7 / M2a	Enhanced Situational Awareness

Business Planning Group	Business Planning Element	SCE 2021 GRC Activity	SCE 2021 Exhibit	SCE 2021 Volume	RAMP Risk	RAMP ID	RAMP Control / Mitigation Name
Resiliency	Wildfire Management	Wildfire Covered Conductor Program	4	5	Contact with Energized Equipment / Wildfire	M5 / M1	Wildfire Covered Conductor Program
Resiliency	Wildfire Management	Wildfire Covered Conductor Program	4	5	Wildfire	C2	FR3 Overhead Distribution Transformer
Resiliency	Wildfire Management	Wildfire Covered Conductor Program	4	5	Wildfire	M9	Fire Resistant Poles (M1 Scope)

Appendix 2

GRC ACTIVITY WALKOVER

GRC ACTIVITY WALKOVER TO 2021 GRC ACTIVITY

1. Capital

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
ADDED FACILITIES	Distribution Added Facilities	Y	N	Y	N
ADDED FACILITIES	Transmission/Substation Added Facilities - Customer Financed	Y	N	Y	N
ADDED FACILITIES	Transmission/Substation Added Facilities - SCE Financed	Y	N	Y	N
BREAKDOWN MTCE	Distribution Preventive and Breakdown Capital Maintenance	Y	Y	Y	N
BREAKDOWN MTCE	Substation Capital Breakdown Maintenance	Y	N	Y	N
BREAKDOWN MTCE	Transmission Capital Maintenance	Y	Y	Y	N
CRE	CRE Project Management	Y	N	N	Y
CRE	CRE Project Management	Y	Y	N	N
CRE	Facility Asset Management	Y	Y	Y	N
CRITICAL INFRA SPARE	Substation Emergency Equipment	Y	N	Y	N
CUSTOMER REQ/RELO	Distribution Preventive and Breakdown Capital Maintenance	Y	Y	N	N
CUSTOMER REQ/RELO	Distribution Relocations	Y	Y	Y	N
CUSTOMER REQ/RELO	Transmission Joint Pole Capital Credits	Y	Y	Y	N
CUSTOMER REQ/RELO	WDAT/TO/Gen-Tie - SCE Funded	Y	N	Y	N
Distribution Transformers	Distribution Transformers	Y	N	Y	N
ECS	Telecommunication Inspection and Maintenance	Y	N	N	Y
EHS	Environmental Programs	Y	Y	N	N
ENTERPRISE TECH	Monitoring Bulk Power System	Y	N	N	Y
ENTERPRISE TECH	Technology Solutions	Y	N	N	Y
GRID APPS/COMM	Relays, Protection and Control Replacements	Y	Y	Y	N
GRID MODERNIZATION	4 kV Substation Eliminations	Y	N	N	Y
GRID MODERNIZATION	Communications	Y	N	N	Y
GRID MODERNIZATION	DER-Driven Grid Reinforcement	Y	Y	Y	N
GRID MODERNIZATION	Distribution Circuit Upgrades	Y	Y	N	N
GRID MODERNIZATION	Distribution Substation Plan (DSP) Circuits	Y	N	Y	N
GRID MODERNIZATION	Engineering and Planning Software Tools	Y	N	N	Y
GRID MODERNIZATION	Engineering and Planning Software Tools	Y	Y	Y	N
GRID MODERNIZATION	Grid Management System	Y	Y	Y	N
GRID MODERNIZATION	Substation Equipment Replacement Program	Y	N	Y	N
GRID MODERNIZATION	Substation Transformer Bank Replacement	Y	N	N	Y
GRID MODERNIZATION	Automation	Y	Y	Y	N
HYDRO EAST CORE BASE	Distribution Substation Plan Substations	Y	Y	Y	N
HYDRO EAST CORE BASE	Hydro - Dams and Waterways	Y	Y	Y	N
HYDRO EAST CORE BASE	Hydro - Electrical Equipment	Y	Y	N	N

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
HYDRO EAST CORE BASE	Hydro - Electrical Equipment	Y	Y	Y	N
HYDRO EAST CORE BASE	Hydro - Prime Movers	Y	Y	Y	N
HYDRO EAST CORE BASE	Hydro - Structures and Grounds	Y	Y	N	N
HYDRO EAST CORE BASE	Hydro - Structures and Grounds	Y	Y	Y	N
HYDRO NO CORE BASE	Distribution Substation Plan Substations	Y	Y	Y	N
HYDRO NO CORE BASE	Hydro - Dams and Waterways	Y	Y	N	N
HYDRO NO CORE BASE	Hydro - Dams and Waterways	Y	Y	Y	N
HYDRO NO CORE BASE	Hydro - Electrical Equipment	Y	Y	Y	N
HYDRO NO CORE BASE	Hydro - Prime Movers	Y	Y	Y	N
HYDRO NO CORE BASE	Hydro – Relicensing	Y	Y	N	N
HYDRO NO CORE BASE	Hydro – Relicensing	Y	Y	Y	N
HYDRO NO CORE BASE	Hydro - Structures and Grounds	Y	Y	N	N
HYDRO NO CORE BASE	Hydro - Structures and Grounds	Y	Y	Y	N
HYDRO NO RELICENSG	Hydro - Dams and Waterways	Y	Y	Y	N
HYDRO NO RELICENSG	Hydro – Decommissioning	Y	Y	Y	N
HYDRO NO RELICENSG	Hydro – Relicensing	Y	Y	Y	N
HYDRO NO RELICENSG	Hydro - Structures and Grounds	Y	Y	Y	N
INFRASTRUCTURE REPL	4 kV Cutovers	Y	Y	Y	N
INFRASTRUCTURE REPL	4 kV Substation Eliminations	Y	Y	Y	N
INFRASTRUCTURE REPL	Cable Life Extension (CLE) Program	Y	Y	Y	N
INFRASTRUCTURE REPL	Cable-in-Conduit (CIC) Replacement Program	Y	Y	Y	N
INFRASTRUCTURE REPL	Circuit Breaker Replacement	Y	Y	Y	N
INFRASTRUCTURE REPL	Distribution Deteriorated Pole Replacement	Y	Y	Y	N
INFRASTRUCTURE REPL	Distribution Pole Loading Program Pole Replacement	Y	Y	Y	N
INFRASTRUCTURE REPL	Distribution Preventive and Breakdown Capital Maintenance	Y	Y	Y	N
INFRASTRUCTURE REPL	Distribution Substation Plan Substations	Y	Y	Y	N
INFRASTRUCTURE REPL	NERC Compliance Programs	Y	Y	Y	N
INFRASTRUCTURE REPL	Overhead Conductor Program (OCP)	Y	Y	Y	N
INFRASTRUCTURE REPL	PCB Transformer Removal	Y	Y	N	N
INFRASTRUCTURE REPL	Preventive Maintenance	Y	N	Y	N
INFRASTRUCTURE REPL	Preventive Maintenance	Y	Y	Y	N
INFRASTRUCTURE REPL	Protection of Grid Infrastructure Assets	Y	Y	Y	N
INFRASTRUCTURE REPL	Relays, Protection and Control Replacements	Y	Y	Y	N
INFRASTRUCTURE REPL	Substation Switchrack Rebuild	Y	Y	Y	N
INFRASTRUCTURE REPL	Substation Transformer Bank Replacement	Y	Y	Y	N
INFRASTRUCTURE REPL	Transmission Capital Maintenance	Y	Y	Y	N
INFRASTRUCTURE REPL	Transmission Deteriorated Pole Replacement	Y	Y	Y	N
INFRASTRUCTURE REPL	Transmission Pole Loading Program Replacement	Y	Y	Y	N
INFRASTRUCTURE REPL	Underground Structure Replacements	Y	N	N	Y

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
INFRASTRUCTURE REPL	Underground Switch Replacements	Y	Y	Y	N
INFRASTRUCTURE REPL	Worst Circuit Rehabilitation (WCR)	Y	Y	Y	N
LOAD GROWTH	4 kV Cutovers - Load Growth Driven	Y	Y	Y	N
LOAD GROWTH	Distribution Circuit Upgrades	Y	N	Y	N
LOAD GROWTH	Distribution Plant Betterment	Y	N	N	Y
LOAD GROWTH	Distribution Substation Plan (DSP) Circuits	Y	N	Y	N
LOAD GROWTH	Distribution Substation Plan Substations	Y	N	Y	N
LOAD GROWTH	Substation Equipment Replacement Program	Y	N	Y	N
LOAD GROWTH	Substation Load Information Monitoring System	Y	N	N	Y
LOAD GROWTH	Transmission Substation Plan (TSP)	Y	N	Y	N
LOAD GROWTH	Transmission/Substation Added Facilities - SCE Financed	Y	N	Y	N
METERS	Meter Engineering	Y	N	N	Y
MTNVW CORE BASE	Mountainview	Y	Y	Y	N
MTNVW CORE BASE	NULL	Y	Y	Y	N
NEW SERV CONNECTIONS	Agricultural New Service Connections	Y	N	Y	N
NEW SERV CONNECTIONS	Commercial New Service Connections	Y	N	Y	N
NEW SERV CONNECTIONS	Residential New Service Connections	Y	N	Y	N
NEW SERV CONNECTIONS	Streetlights New Service Connections	Y	N	Y	N
OPERATIONS - IT	4 kV Substation Eliminations	Y	N	N	Y
OPERATIONS - IT	CRE Project Management	Y	N	N	Y
OPERATIONS - IT	Distribution Substation Plan Substations	Y	N	N	Y
OPERATIONS - IT	Grid Reliability Projects	Y	N	N	Y
OPERATIONS - IT	Meter System Maintenance Design	Y	N	N	Y
OPERATIONS - IT	Monitoring Bulk Power System	Y	N	N	Y
OPERATIONS - IT	Preventive Maintenance	Y	N	N	Y
OPERATIONS - IT	Relays, Protection and Control Replacements	Y	N	N	Y
OPERATIONS - IT	Renewable Transmission Projects	Y	N	N	Y
OPERATIONS - IT	Rule 20 B/C Conversions	Y	N	N	Y
OPERATIONS - IT	Rule 20A Conversions	Y	N	N	Y
OPERATIONS - IT	Software Maintenance and Replacement	Y	Y	Y	N
OPERATIONS - IT	Technology Infrastructure Maintenance and Replacement	Y	N	N	Y
OPERATIONS - IT	Technology Infrastructure Maintenance and Replacement	Y	Y	Y	N
OPERATIONS - IT	Technology Solutions	Y	N	N	Y
OPERATIONS - IT	Technology Solutions	Y	Y	Y	N
OPERATIONS - IT	Transmission Substation Plan (TSP)	Y	N	N	Y
OPERATIONS - IT	Transmission/Substation Added Facilities - Customer Financed	Y	N	N	Y
OPERATIONS - IT	WDAT/TO/Gen-Tie - Customer Funded	Y	N	N	Y
OTHER - RP	Transmission Capital Maintenance	Y	Y	Y	N
OTHER - TDBU	Catalina – Diesel	Y	N	Y	N

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
OTHER - TDBU	Distribution Pole Loading Program Pole Replacement	Y	Y	Y	N
OTHER - TDBU	Distribution Transformers	Y	N	Y	N
OTHER - TDBU	Distribution Wood Pole Disposal	Y	Y	Y	N
OTHER - TDBU	Energy Storage	Y	Y	Y	N
OTHER - TDBU	Facility Asset Management	Y	N	Y	N
OTHER - TDBU	Generation Interconnection Remedial Action Scheme	Y	Y	Y	N
OTHER - TDBU	Laboratory Operations	Y	Y	Y	N
OTHER - TDBU	Prefabrication	Y	N	N	Y
OTHER - TDBU	Streetlight Maintenance and LED Conversions	Y	N	Y	N
OTHER - TDBU	Substation Emergency Equipment	Y	N	Y	N
OTHER - TDBU	Substation Tools and Work Equipment	Y	N	Y	N
OTHER - TDBU	Transmission Emergency Equipment	Y	N	Y	N
OTHER - TDBU	Transmission Line Rating Remediation (TLRR)	Y	Y	Y	N
OTHER - TDBU	Transmission Tools and Work Equipment	Y	N	Y	N
OTHER - TDBU	Utility Joint Ownership Obligations	Y	Y	Y	N
PALO VERDE	Palo Verde	Y	N	N	Y
PEAKERS CORE BASE	Mountainview	Y	Y	Y	N
PEAKERS CORE BASE	Peakers	Y	Y	Y	N
PPD SPV	Solar	Y	N	Y	N
PPD SPV	NULL	Y	N	Y	N
SBU	Communications Equipment	Y	N	Y	N
SEISMIC PROGRAM	All Hazards Assessment, Mitigation and Analytics	Y	Y	Y	N
SOLUTION DELIVERY	CS Replatform	Y	Y	Y	N
SOLUTION DELIVERY	Protection of Major Business Functions	Y	Y	Y	N
SOLUTION DELIVERY	Technology Infrastructure Maintenance and Replacement	Y	Y	Y	N
SOLUTION DELIVERY	Technology Solutions	Y	Y	Y	N
SPEC EQUIP	CS Capital	Y	N	N	Y
SPEC EQUIP	Distribution Tools and Work Equipment	Y	N	N	Y
STORM	Distribution Storm Response Capital	Y	Y	Y	N
STORM	Transmission/Substation Storm Response Capital	Y	Y	Y	N
T&D Joint Pole	Transmission Joint Pole Capital Credits	Y	Y	Y	N
TECHNOLOGY & RISK	Cybersecurity Delivery and IT Compliance	Y	Y	Y	N
TRANS PROJECTS	Grid Reliability Projects	Y	N	N	Y
TRANS PROJECTS	Renewable Transmission Projects	Y	N	N	Y
TRANS PROJECTS	Renewable Transmission Projects	Y	N	Y	N

2. O&M

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
401(K) SAVINGS PLAN - 926	401K Savings Plan	No	No	No	No
506.013 MOHAVE	Environmental Management and Development	Yes	No	No	Yes
539 - MISC. HYDRAULIC POWER GENERATION EXPENSES	Energy Procurement	No	No	No	No
561.170 - GRID OPERATIONS - MANAGEMENT AND OPERATION OF THE GRID CONTROL CENTER	Monitoring Bulk Power System	Yes	No	No	No
566.150 - TRANSMISSION - INSPECTION AND OPERATION OF TRANSMISSION LINES AND STRUCTURES	Telecommunication Inspection and Maintenance	Yes	No	No	Yes
566.280 - GRID CONTRACT MANAGEMENT	Interconnection, Added Facilities and Special Contracts	No	No	No	No
566.280 - GRID CONTRACT MANAGEMENT	Transmission/Substation Work Order Related Expense	No	No	No	No
566.281 - TRANSMISSION ACCRUALS AND OTHER COSTS	Reliability Must-Run and Exceptional Dispatch	Yes	No	No	Yes
568.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - SUPERVISION OF TRANSMISSION SUBSTATION MAINTENANCE	Substation Minor Equipment and Supplies	No	No	No	No
570.281 - TRANSMISSION PARTICIPANT SHARE COSTS	Transmission/Substation Work Order Related Expense	No	No	No	No
571.125 - TRANSMISSION POLE REPAIRS AND TRANSMISSION POLE RELATED EXPENSE	Transmission Pole Loading Work Order Related Expense	#N/A	#N/A	#N/A	#N/A
571.150 - TRANSMISSION - LINE, STRUCTURE, ROAD, AND RIGHT-OF-WAY MAINTENANCE	Insulator Washing	Yes	No	No	Yes
571.150 - TRANSMISSION - LINE, STRUCTURE, ROAD, AND RIGHT-OF-WAY MAINTENANCE	Transmission Line Rating Remediation (TLRR)	Yes	Yes	Yes	Yes
571.150 - TRANSMISSION - LINE, STRUCTURE, ROAD, AND RIGHT-OF-WAY MAINTENANCE	Transmission O&M Maintenance	Yes	No	No	Yes
575.281 - MISCELLANEOUS GRID EXPENSE	Fuel and Purchased Power	No	No	No	No
587 - CS CUSTOMER INSTALLATION EXPENSE	Safety Activities - Transmission & Distribution	Yes	Yes	Yes	No
594.120 - DISTRIBUTION OVERHEAD AND UNDERGROUND BREAKDOWN MAINTENANCE	Distribution Preventive and Breakdown O&M Maintenance	Yes	Yes	Yes	Yes
596.170 - GRID OPERATIONS - STREET LIGHT MAINTENANCE	Streetlight Operations, Inspections, and Maintenance	Yes	Yes	Yes	Yes
903.200 - CREDIT AND PAYMENT SERVICES	Field Meter Reading	No	No	No	No
905.900 MARKETING, EDUCATION AND COMMUNICATION	Corporate Citizenship	No	No	No	No
905.900 MARKETING, EDUCATION AND COMMUNICATION	Customer Communications, Education and Outreach	No	No	No	No
905.900 MARKETING, EDUCATION AND COMMUNICATION	Customer Experience Management	No	No	No	No
905.900 MARKETING, EDUCATION AND COMMUNICATION	Customer Programs Management	No	No	No	No
907.600 - OPERATING UNIT MANAGEMENT & SUPPORT	Billing	No	No	No	No
907.600 - OPERATING UNIT MANAGEMENT & SUPPORT	Business Account Management	No	No	No	No
907.600 - OPERATING UNIT MANAGEMENT & SUPPORT	Business Planning	Yes	Yes	Yes	Yes
907.600 - OPERATING UNIT MANAGEMENT & SUPPORT	Customer Programs Management	No	No	No	No
907.600 - OPERATING UNIT MANAGEMENT & SUPPORT	Facility and Land Operations	Yes	Yes	Yes	Yes
908 - MISCELLANEOUS BALANCING	Develop and Manage Policy and	Yes	Yes	Yes	No

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
ACCOUNTS	Initiatives				
908 - MISCELLANEOUS BALANCING ACCOUNTS	Miscellaneous Balancing Accounts	No	No	No	No
908.600 - BUSINESS ACCOUNT SERVICES	Business Account Management	No	No	No	No
908.600 - BUSINESS ACCOUNT SERVICES	Business Account Management Services	No	No	No	No
908.600 - BUSINESS ACCOUNT SERVICES	Customer Communications, Education and Outreach	No	No	No	No
909 - MISCELLANEOUS BALANCING ACCOUNTS	Miscellaneous Balancing Accounts	No	No	No	No
912.100 - ELECTRIC TRANSPORTATION MISCELLANEOUS EXPENSE	Customer Programs Management	No	No	No	No
912.100 - ELECTRIC TRANSPORTATION MISCELLANEOUS EXPENSE	Transportation Services Allocation Residual	No	No	No	No
920.220 - REAL PROPERTIES	Distribution Support Activities	No	No	No	No
920.220 - REAL PROPERTIES	Distribution Work Order Write-Off	No	No	No	No
920.220 - REAL PROPERTIES	Facility and Land Operations	Yes	Yes	Yes	Yes
920.220 - REAL PROPERTIES	Recognition - Distribution Personnel	No	No	No	No
920.220 - REAL PROPERTIES	Training Seat-Time - Transmission and Distribution	Yes	Yes	Yes	Yes
920.220 - REAL PROPERTIES	Unclassified O&M Expenses	No	No	No	No
Accessibility Issues	Credit and Payment	No	No	No	No
Accessibility Issues	Ethics and Compliance	No	No	No	No
Accessibility Issues	External Communications	Yes	Yes	Yes	Yes
Accessibility Issues	Facility and Land Operations	Yes	Yes	Yes	Yes
Accessibility Issues	Software Maintenance and Replacement	Yes	No	No	Yes
ADJUSTMENT for SHAREHOLDER P&B - 925	Business Planning	Yes	Yes	Yes	Yes
ADJUSTMENT for SHAREHOLDER P&B - 925	Claims	No	No	No	No
ADJUSTMENT for SHAREHOLDER P&B - 925	Employee and Contractor Safety	Yes	Yes	Yes	No
ADJUSTMENT for SHAREHOLDER P&B - 925	Law	No	No	No	No
ADJUSTMENT for SHAREHOLDER P&B - 925	Public Safety	Yes	Yes	Yes	No
ADJUSTMENT for SHAREHOLDER P&B - 925	Safety Culture Transformation	Yes	Yes	Yes	No
ADJUSTMENT for SHAREHOLDER P&B - 925	Workers' Compensation	No	No	No	No
ADJUSTMENT for SHAREHOLDER P&B - 926	Disability Management	No	No	No	No
ADJUSTMENT for SHAREHOLDER P&B - 926	Executive Compensation	No	No	No	No
ADJUSTMENT for SHAREHOLDER P&B - 926	OU Support Services	No	No	No	No
AUDIT SERVICES - 920-921	Audits	No	No	No	No
BUSINESS INTEGRATION & DELIVERY - 920/921	Business Planning	Yes	Yes	Yes	Yes
BUSINESS INTEGRATION & DELIVERY - 920/921	Corporate Services	No	No	No	No
BUSINESS INTEGRATION & DELIVERY - 920/921	Cybersecurity Delivery and IT Compliance	Yes	No	No	Yes
BUSINESS INTEGRATION & DELIVERY - 920/921	Distribution Support Activities	No	No	No	No
BUSINESS INTEGRATION & DELIVERY - 920/921	IT Project Support	No	No	No	No
BUSINESS INTEGRATION & DELIVERY - 920/921	Software Maintenance and Replacement	Yes	No	No	Yes

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
BUSINESS INTEGRATION & DELIVERY - 920/921	SONGS	Yes	Yes	Yes	Yes
BUSINESS INTEGRATION & DELIVERY - 920/921	Technology Delivery	Yes	Yes	Yes	No
BUSINESS INTEGRATION & DELIVERY - 920/921	Technology Infrastructure Maintenance and Replacement	Yes	No	No	Yes
BUSINESS INTEGRATION & DELIVERY - 920/921	Technology Planning, Design and Support	No	No	No	No
BUSINESS INTEGRATION & DELIVERY - 920/921	Transmission Support Activities	No	No	No	No
BUSINESS INTEGRATION & DELIVERY - 920/921	Unclassified O&M Expenses	No	No	No	No
BUSINESS RESILIENCY - 920-921	All Hazards Assessment, Mitigation and Analytics	Yes	Yes	Yes	No
BUSINESS RESILIENCY - 920-921	Emergency Preparedness and Response	Yes	Yes	Yes	No
BUSINESS RESILIENCY - 920-921	Planning, Continuity and Governance	Yes	Yes	Yes	No
BUSINESS RESILIENCY - 920-921	Training, Drills and Exercises	Yes	Yes	Yes	No
CAPITALIZED A&G EXPENSE - 922	Capitalized A&G Expense	No	No	No	No
CAPITALIZED P&B EXPENSE - 926	Capitalized P&B Expense	No	No	No	No
CLAIMS - 920-921-924	Claims - Administration	No	No	No	No
CLAIMS RESERVES - 925	Claims - Injuries & Other Damages	No	No	No	No
CLAIMS RESERVES - 925	Law - Outside Counsel	No	No	No	No
CLAIMS RESERVES - 925	Miscellaneous Balancing Accounts	No	No	No	No
COMPLIANCE OPERATIONAL EXCELLENCE – 920921	Ethics and Compliance	No	No	No	No
COMPLIANCE, POLICY & IG - 920921	Ethics and Compliance	No	No	No	No
COMPLIANCE, POLICY & IG - 923	Ethics and Compliance	No	No	No	No
CORP LIABILITY INSURANCE - 925	Liability Insurance (Non-Wildfire)	No	No	No	No
CORP MEMBERSHIP DUES AND FEES - 930	Professional Development and Education	No	No	No	No
CORP PROPERTY INSURANCE - 924	Property Insurance	No	No	No	No
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	Business Planning	Yes	Yes	Yes	Yes
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	Distribution Support Activities	No	No	No	No
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	Education, Safety and Operations	Yes	Yes	Yes	No
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	External Communications	Yes	Yes	Yes	Yes
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	Logistics, Graphics, and Center of Excellence	Yes	No	No	Yes
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	OU Support Services	No	No	No	No
CORPORATE COMMUNICATIONS - 920-921 - COMMUNICATIONS OPERATIONS	SONGS	Yes	Yes	Yes	Yes
CORPORATE COMMUNICATIONS - 923 - OUTSIDE SERVICES	External Communications	Yes	Yes	Yes	Yes
CORPORATE COMMUNICATIONS - 923 - OUTSIDE SERVICES	Policy and External Engagement	No	No	No	No
CORPORATE COMMUNICATIONS - 930 - COMMUNICATIONS PRODUCTS	External Communications	Yes	Yes	Yes	Yes
CORPORATE ENVIRONMENTAL SERVICES - 920-921	Environmental Management and Development	Yes	No	No	Yes
CORPORATE ENVIRONMENTAL SERVICES - 920-921	Environmental Programs	Yes	Yes	Yes	No
CORPORATE HEALTH & SAFETY - 925	Business Planning	Yes	Yes	Yes	Yes

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
CORPORATE HEALTH & SAFETY - 925	Employee and Contractor Safety	Yes	Yes	Yes	No
CORPORATE HEALTH & SAFETY - 925	Public Safety	Yes	Yes	Yes	No
CORPORATE HEALTH & SAFETY - 925	Safety Activities - Transmission & Distribution	Yes	Yes	Yes	No
CORPORATE HEALTH & SAFETY - 925	Safety Culture Transformation	Yes	Yes	Yes	No
CORPORATE REAL ESTATE - 920-921	Distribution Support Activities	No	No	No	No
CORPORATE REAL ESTATE - 920-921	Facility and Land Operations	Yes	Yes	Yes	Yes
CORPORATE REAL ESTATE - 931	Facility and Land Operations	Yes	Yes	Yes	Yes
CORPORATE REAL ESTATE - 935	Facility and Land Operations	Yes	Yes	Yes	Yes
CORPORATE SECURITY 920-921-923	Develop and Manage Policy and Initiatives	Yes	Yes	Yes	No
CORPORATE SECURITY 920-921-923	Security Technology Operations and Maintenance	Yes	No	No	Yes
CORPORATE SECURITY 920-921-923	Software Maintenance and Replacement	Yes	No	No	Yes
CORPORATE SECURITY 920-921-923	Technology Delivery	Yes	Yes	Yes	No
CORPORATE SECURITY 920-921-923	Work Force Protection/Insider Threat	Yes	Yes	Yes	No
CYBERSECURITY & COMPLIANCE 920-921	Cyber Software License and Maintenance	Yes	No	No	Yes
CYBERSECURITY & COMPLIANCE 920-921	Cybersecurity Delivery and IT Compliance	Yes	No	No	Yes
CYBERSECURITY & COMPLIANCE 920-921	IT Project Support	No	No	No	No
CYBERSECURITY & COMPLIANCE 920-921	Technology Delivery	Yes	Yes	Yes	No
CYBERSECURITY & COMPLIANCE 923	Technology Delivery	Yes	Yes	Yes	No
DENTAL PLANS - 926	Dental Plans	No	No	No	No
DISABILITY ADMINISTRATION 926	Disability Management - Administration	No	No	No	No
DISABILITY PROGRAMS - 926	Disability Management - Programs	No	No	No	No
ENTERPRISE ARCHITECTURE & STRATEGY - 920/921	Business Planning	Yes	Yes	Yes	Yes
ENTERPRISE ARCHITECTURE & STRATEGY - 920/921	Technology Delivery	Yes	Yes	Yes	No
ENTERPRISE ARCHITECTURE & STRATEGY - 920/921	Technology Planning, Design and Support	No	No	No	No
ENVIRONMENTAL OPERATIONAL EXCELLENCE – 920921	Environmental Programs	Yes	Yes	Yes	No
EXECUTIVE OFFICERS - 920-921	Business Planning	Yes	Yes	Yes	Yes
EXECUTIVE OFFICERS - 920-921	Executive Compensation	No	No	No	No
EXECUTIVE OFFICERS - 920-921	OU Support Services	No	No	No	No
EXECUTIVE OFFICERS - 923	Executive Compensation	No	No	No	No
EXECUTIVES BENEFITS - 926	Executive Benefits (Service)	No	No	No	No
FINANCIAL SERVICES - 920-921	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
FINANCIAL SERVICES - 920-921	Business Planning	Yes	Yes	Yes	Yes
FINANCIAL SERVICES - 920-921	Corporate Services	No	No	No	No
FINANCIAL SERVICES - 920-921	Digital and Process Transformation	No	No	No	No
FINANCIAL SERVICES - 920-921	Grid Engineering	No	No	No	No
FINANCIAL SERVICES - 920-921	OU Support Services	No	No	No	No
FINANCIAL SERVICES - 920-921	Technology Delivery	Yes	Yes	Yes	No

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
FINANCIAL SERVICES - 920-921	Vendor Discount and Other Miscellaneous Payments	No	No	No	No
FINANCIAL SERVICES - 923-930	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
FINANCIAL SERVICES - 923-930	Business Planning	Yes	Yes	Yes	Yes
FINANCIAL SERVICES - 923-930	Corporate Services	No	No	No	No
FINANCIAL SERVICES - 923-930	Executive Compensation	No	No	No	No
FINANCIAL SERVICES - 923-930	Vendor Discount and Other Miscellaneous Payments	No	No	No	No
FINANCIAL SERVICES - 926	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
FINANCIAL SERVICES - 926	Digital and Process Transformation	No	No	No	No
FINANCIAL SERVICES MISCELLANEOUS EXPENSES - 930	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
FINANCIAL SERVICES MISCELLANEOUS EXPENSES - 930	Strategy and Planning	No	No	No	No
FRANCHISE REQUIREMENT - 927.000	Franchise Fees	No	No	No	No
Gains/Losses On Sale of Property	Gains/Losses On Sale of Property	No	No	No	No
GENERATION REGULATORY - 549	Environmental Programs	Yes	Yes	Yes	No
GRID SERVICES - 920/921	IT Project Support	No	No	No	No
GRID SERVICES - 920/921	Monitoring Bulk Power System	Yes	No	No	No
GRID SERVICES - 920/921	SONGS	Yes	Yes	Yes	Yes
GRID SERVICES - 920/921	Technology Infrastructure Maintenance and Replacement	Yes	No	No	Yes
GRID SERVICES - NETWORK RENTS - 931	Monitoring Bulk Power System	Yes	No	No	No
GRID SERVICES - NETWORK RENTS - 931	Telecommunication Line Rents	No	No	No	No
GROUP LIFE INSURANCE - 926	Group Life Insurance	No	No	No	No
HUMAN RESOURCES - 923	Executive Compensation	No	No	No	No
HUMAN RESOURCES - 923	OU Support Services	No	No	No	No
HUMAN RESOURCES - 923	Talent Solutions	No	No	No	No
HUMAN RESOURCES - 923	Training and Development	No	No	No	No
HUMAN RESOURCES - 926	Executive Compensation	No	No	No	No
HUMAN RESOURCES - 926	OU Support Services	No	No	No	No
HUMAN RESOURCES - 920-921	Business Planning	Yes	Yes	Yes	Yes
HUMAN RESOURCES - 920-921	OU Support Services	No	No	No	No
HUMAN RESOURCES - 920-921	Talent Solutions	No	No	No	No
HUMAN RESOURCES - 920-921	Training and Development	No	No	No	No
INFORMATION TECHNOLOGY - 930	Technology Assessment	No	No	No	No
INFORMATION TECHNOLOGY OPERATIONAL EXCELLENCE - 920/921	Software Maintenance and Replacement	Yes	No	No	Yes
Interest Offset on Customer Deposits	Other Revenue Generating	No	No	No	No
LAW – 928	Implement Pricing and Ratemaking	No	No	No	No
LAW - CORPORATE GOVERNANCE AND MISCELLANEOUS - 930	Law - Corporate Governance and Miscellaneous	No	No	No	No
LAW - IN-HOUSE LEGAL RESOURCES & CORPORATE GOVERNANCE & MISC - 920-921	Law - In-house Legal Resources & Corporate Governance & Misc	No	No	No	No
LAW - OUTSIDE COUNSEL - 923-925-928	Law - Outside Counsel	No	No	No	No

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
LOCAL PUBLIC AFFAIRS - 920-921	Education, Safety and Operations	Yes	Yes	Yes	No
LOCAL PUBLIC AFFAIRS - 920-921	Implement Pricing and Ratemaking	No	No	No	No
LONG TERM INCENTIVES	Long-term Incentives	No	No	No	No
MEDICAL PROGRAMS - 926	Medical Programs	No	No	No	No
MEDICAL PROGRAMS - 926	Miscellaneous Benefit Programs	No	No	No	No
MEDICAL PROGRAMS - 926	OU Support Services	No	No	No	No
MEDICAL PROGRAMS - 926	PBOP Costs (Service)	No	No	No	No
MISCELLANEOUS BENEFIT PROGRAMS - 926	Audits	No	No	No	No
MISCELLANEOUS BENEFIT PROGRAMS - 926	Business Planning	Yes	Yes	Yes	Yes
MISCELLANEOUS BENEFIT PROGRAMS - 926	Distribution Intrusive Pole Inspections	Yes	Yes	Yes	No
MISCELLANEOUS BENEFIT PROGRAMS - 926	Distribution Pole Loading Assessments	Yes	Yes	Yes	No
MISCELLANEOUS BENEFIT PROGRAMS - 926	Distribution Routine Vegetation Management	Yes	Yes	Yes	Yes
MISCELLANEOUS BENEFIT PROGRAMS - 926	Hydro	Yes	Yes	Yes	Yes
MISCELLANEOUS BENEFIT PROGRAMS - 926	Miscellaneous Benefit Programs	No	No	No	No
MISCELLANEOUS BENEFIT PROGRAMS - 926	Recognition	No	No	No	No
MISCELLANEOUS BENEFIT PROGRAMS - 926	Transmission Routine Vegetation Management	Yes	Yes	Yes	No
NERC COMPLIANCE PROGRAM - 920921	Ethics and Compliance	No	No	No	No
NUCLEAR FUEL -518	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
NUCLEAR SUPPORT - 524	Spent Nuclear Fuel Storage	No	No	No	No
OTHER A&G - 930	Technology Assessment	No	No	No	No
OTHER A&G - 935	Monitoring and Operating Substations	Yes	No	No	No
PALO VERDE - 524	Palo Verde	Yes	No	No	Yes
PARTICIPANT CREDITS - 926	3rd-Party Non-Energy Billing and Decommissioning Credits	No	No	No	No
PARTICIPANT CREDITS - 926	Corporate Services	No	No	No	No
PARTICIPANT CREDITS - 926	Miscellaneous Benefit Programs	No	No	No	No
PARTICIPANT CREDITS - 926	Participant Credits and Charges - 926	No	No	No	No
PARTICIPANT CREDITS - 930	3rd-Party Non-Energy Billing and Decommissioning Credits	No	No	No	No
PARTICIPANT CREDITS - 930	Participant Credits and Charges - 930	No	No	No	No
PBOP Costs (Non-Service) - 926	PBOP Costs (Non-Service)	No	No	No	No
PBOP Costs (Service) - 926	PBOP Costs (Service)	No	No	No	No
Pension Costs (Non-Service) - 926	Pension Costs (Non-Service)	No	No	No	No
Pension Costs (Service) - 926	Pension Costs (Service)	No	No	No	No
POWER PROCUREMENT - 557	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
POWER PROCUREMENT - 557	Energy Procurement	No	No	No	No
POWER PROCUREMENT - 557	Four Corners	No	No	No	No
PURCHASED POWER EXPENSES	Accounting, Financial Compliance and Financial Reporting	No	No	No	No
Reduction in A&G For Catalina	Fixed Price Technology and Maintenance	No	No	No	No
Reduction in A&G For Catalina	Software Maintenance and Replacement	Yes	No	No	Yes

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
REGULATORY AFFAIRS - 920-921	Develop and Manage Policy and Initiatives	Yes	Yes	Yes	No
REGULATORY AFFAIRS - 920-921	Electric Vehicle Readiness	No	No	No	No
REGULATORY AFFAIRS - 920-921	Implement Pricing and Ratemaking	No	No	No	No
REGULATORY AFFAIRS - 920-921	Law - In-house Legal Resources & Corporate Governance & Misc	No	No	No	No
REGULATORY AFFAIRS - 920-921	Transportation Electrification Priority Review Projects	No	No	No	No
REGULATORY AFFAIRS - 920-921	Unclassified O&M Expenses	No	No	No	No
REGULATORY AFFAIRS - INTEGRATED PLANNING POWER PROCUREMENT REGULATORY SUPPORT - 557	Business Planning	Yes	Yes	Yes	Yes
REGULATORY AFFAIRS - INTEGRATED PLANNING POWER PROCUREMENT REGULATORY SUPPORT - 557	Develop and Manage Policy and Initiatives	Yes	Yes	Yes	No
REGULATORY AFFAIRS - INTEGRATED PLANNING POWER PROCUREMENT REGULATORY SUPPORT - 557	Implement Pricing and Ratemaking	No	No	No	No
REGULATORY AFFAIRS - INTEGRATED PLANNING POWER PROCUREMENT REGULATORY SUPPORT - 557	Modeling, Analysis and Forecasting	No	No	No	No
REGULATORY COMPLIANCE - 920921	Ethics and Compliance	No	No	No	No
SAN DIEGUITO WETLANDS AND WHEELER NORTH REEF - 920921	Environmental Programs	Yes	Yes	Yes	No
SEISMIC MITIGATION - 935	All Hazards Assessment, Mitigation and Analytics	Yes	Yes	Yes	No
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	Fixed Price Technology and Maintenance	No	No	No	No
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	Monitoring Bulk Power System	Yes	No	No	No
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	Software Maintenance and Replacement	Yes	No	No	Yes
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	SONGS	Yes	Yes	Yes	Yes
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	Technology Delivery	Yes	Yes	Yes	No
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	Technology Infrastructure Maintenance and Replacement	Yes	No	No	Yes
SERVICE MANAGEMENT OFFICE & OPERATIONS - 920/921	Technology Planning, Design and Support	No	No	No	No
SERVICE MANAGEMENT OFFICE & OPERATIONS - HW/SW LICENSE MAINTENANCE - 920/921	Software Maintenance and Replacement	Yes	No	No	Yes
SERVICE MANAGEMENT OFFICE & OPERATIONS - HW/SW LICENSE MAINTENANCE - 920/921	Technology Infrastructure Maintenance and Replacement	Yes	No	No	Yes
SHORT-TERM INCENTIVE PROGRAM - A&G - 920-921	Short-Term Incentive Program	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - A&G - 920-921	Short-Term Incentive Program - A&G	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - CUSTOMER SERVICE - 905	Short-Term Incentive Program	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - CUSTOMER SERVICE - 905	Short-Term Incentive Program - Customer Service	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - GENERATION - 500	Short-Term Incentive Program	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - GENERATION - 500	Short-Term Incentive Program - Generation	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - TRANSMISSION & DISTRIBUTION - 588	Short-Term Incentive Program	No	No	No	No
SHORT-TERM INCENTIVE PROGRAM - TRANSMISSION & DISTRIBUTION - 588	Short-Term Incentive Program - Transmission & Distribution	No	No	No	No

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
SONGS DECOMMISSIONING CREDITS - 920921	3rd-Party Non-Energy Billing and Decommissioning Credits	No	No	No	No
SUPPLIER DIVERSITY AND DEVELOPMENT - 920-921	Logistics, Graphics, and Center of Excellence	Yes	No	No	Yes
SUPPLIER DIVERSITY AND DEVELOPMENT - 920-921	Supplier Diversity and Development	No	No	No	No
SUPPLIER DIVERSITY AND DEVELOPMENT - 923	Supplier Diversity and Development	No	No	No	No
SUPPLY MANAGEMENT - 920-921	Facility and Land Operations	Yes	Yes	Yes	Yes
SUPPLY MANAGEMENT - 920-921	Logistics, Graphics, and Center of Excellence	Yes	No	No	Yes
SUPPLY MANAGEMENT - 920-921	Supply Chain Allocation Residual	No	No	No	No
VISION SERVICE PLAN - 926	Vision Service Plan	No	No	No	No
WORKERS' COMPENSATION - 925	Workers' Compensation - Administration	No	No	No	No
WORKERS' COMPENSATION RESERVE - 925	Participant Credits and Charges - 925	No	No	No	No
WORKERS' COMPENSATION RESERVE - 925	Workers' Compensation - Injuries & Damages	No	No	No	No
593.120 - PLANNED MAINTENANCE OF DISTRIBUTION OVERHEAD AND UNDERGROUND LINES AND EQUIPMENT; VEGETATION MANAGEMENT; AND APPARATUS INSPECTION AND MAINTENANCE	Dead, Dying and Diseased Tree Removal	Yes	Yes	Yes	Yes
593.120 - PLANNED MAINTENANCE OF DISTRIBUTION OVERHEAD AND UNDERGROUND LINES AND EQUIPMENT; VEGETATION MANAGEMENT; AND APPARATUS INSPECTION AND MAINTENANCE	Distribution Apparatus Inspection and Maintenance	Yes	No	No	Yes
593.120 - PLANNED MAINTENANCE OF DISTRIBUTION OVERHEAD AND UNDERGROUND LINES AND EQUIPMENT; VEGETATION MANAGEMENT; AND APPARATUS INSPECTION AND MAINTENANCE	Distribution Preventive and Breakdown O&M Maintenance	Yes	Yes	Yes	Yes
593.120 - PLANNED MAINTENANCE OF DISTRIBUTION OVERHEAD AND UNDERGROUND LINES AND EQUIPMENT; VEGETATION MANAGEMENT; AND APPARATUS INSPECTION AND MAINTENANCE	Distribution Routine Vegetation Management	Yes	Yes	Yes	Yes
593.120 - PLANNED MAINTENANCE OF DISTRIBUTION OVERHEAD AND UNDERGROUND LINES AND EQUIPMENT; VEGETATION MANAGEMENT; AND APPARATUS INSPECTION AND MAINTENANCE	Insulator Washing	Yes	No	No	Yes
582.150 - SUBSTATION INSPECTION AND MAINTENANCE - INSPECTIONS AND MAINTENANCE ACTIVITIES PERFORMED AT SCE-OWNED GENERATING FACILITIES	Substation - Inspections and Maintenance	Yes	No	No	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Circuit Breaker Inspections and Maintenance	Yes	No	No	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Distribution Apparatus Inspection and Maintenance	Yes	No	No	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Distribution Support Activities	No	No	No	No
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Equipment Washing	Yes	No	No	Yes

2018 GRC Activity	2021 GRC Activity	SAR-Eligible	Safety	Reliability	Maintenance
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Other Substation Equipment Inspections and Maintenance	Yes	No	No	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Relay Inspections and Maintenance	Yes	No	No	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Substation Maintenance Oversight	No	No	No	No
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Substation Minor Equipment and Supplies	No	No	No	No
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Substation O&M Breakdown Maintenance	Yes	Yes	Yes	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Transformer Inspections and Maintenance	Yes	Yes	Yes	Yes
592.150 - SUBSTATION CONSTRUCTION & MAINTENANCE - INSPECTION AND MAINTENANCE OF DISTRIBUTION SUBSTATION EQUIPMENT	Unclassified O&M Expenses	No	No	No	No
562.150 - SUBSTATION INSPECTION AND MAINTENANCE - INSPECTIONS AND MAINTENANCE ACTIVITIES PERFORMED AT SCE-OWNED GENERATING FACILITIES	Substation - Inspections and Maintenance	Yes	No	No	Yes

Appendix 3

NEW, CANCELLED AND DEFERRED PROJECTS

A. New Projects[1]

List of Projects that were not presented in the 2018 GRC but were taken up

(Nominal, $000)

Funding Source	Program	PIN	Project Name	Project Description	Safety	Reliability	Maintenance	2019 Recorded
Capital:								
DSP SUBSTATIONS		5032	Soquel 66/12 - Increase capacity from 56 to 84 MVA with 4.8 MVAR cap addition	Load Growth DSP Substation is projected to be loaded to 100.1% of PLL with the inability to transfer additional load to Chino, Peyton, or Kimball Substations. In order to remediate the overload, the following components are being installed at Soquel 66/12 kV Substation: (1) 28 MVA Transformer Bank Unit; (2) Second Operating Bus; (3) Replacement of existing Busses to 3.5 inches; and (4) 4.8 MVAR Capacitor Bank.	Yes	Yes	No	$15,543.0
Transmission Project, Reliability		6414	Devers-Coachella Valley 220 kV Loop-in Project	In 2010, the load growth in Mirage area will result in load serving deficiencies under the double contingency of Ramon-Mirage and Devers-Mirage 230-kV lines. Potential voltage collapse and post transient voltage violations in Mirage area are the results of the load serving deficiencies. The Devers-Coachella 220 kV loop-in project (OD 6/1/2010) will mitigate possible system voltage collapse and post transient voltage violations until summer 2012. The project will also improve operational flexibility.	Yes	Yes	No	$10,479.0
Total Capital:								**$26,236.7**

[1] This list includes any project that had $10M or more in recorded expenditures (CPUC and FERC-jurisdictional) in 2019 but were not presented in the 2018 GRC and are SAR-eligible.

B. List of Cancelled and Deferred Projects[2]

Program	Project Name	2018 GRC Operating Date	Safety/ Reliability/ Maintenance	Current Operating Date	2018 – 2020 Authorized
TRANSMISSION					
	SCE-03, Vol. 03 - Grid Reliability Projects				
TRANS PROJ RELIAB	Chino: equip 1A pos with CBs	6/1/2019	Yes	12/31/2020	38,557
TRANS PROJ RELIAB	Upgrade Lugo-Mohave 500 kV T/L Series Cap and Terminal Equipment at Mohave	6/1/2019	Yes	10/19/2020	52,374
	SCE-03, Vol. 03 - Transmission System Generation Interconnection				
TRANS PROJ RENEWABLE	Colorado River - Install 2nd AA Bank and expansion of the CRC RAS including N-1 of AA Bank	12/1/2019	No	9/7/2021	67,559
	SCE-03, Vol. 03 - Other-Work by Operating Agent				
MISC EQUIP	LADWP Sylmar Sub: AC/DC Filter Replacement	5/1/2019	Yes	12/1/2020	75,742
	SCE-02, Vol. 03, Ch.IV, Part B - Transmission Substation Plan (TSP) - Subtransmission Lines Plan				
TSP PROJECTS	Elizabeth Lake-Pitchgen 66kV: Reconductor	6/1/2019	Yes	6/1/2022	11,012
	SCE-02, Vol. 03, Ch.IV, Part B - Distribution Substation Plan (DSP) - Substation Expansion Projects				
DSP SUBSTATIONS	DSP Project 2019	6/1/2019	Yes	N/A (Placeholder)	14,685
Other					
	SCE-04, Vol. 02 - Solution Planning & Delivery Capital Software Projects				
CAP SOFT 5YR	Scheduling Refresh Release 2	3/1/2019	Yes	12/1/2022	10,847
	SCE-05, Vol. 03 - Hydro O&M and Capital				
HYDRO NO RELICENSG	Jackass Meadow-Campgroud & Fish Platform	12/1/2019	Yes	12/1/2021	10,847
	SCE-06, Vol. 05 - Enterprise Operations				
BLDGRENNOVATION	Vehicle Maintenance Facility	12/1/2020	Yes	Cancelled	22,612

[2] List represents projects authorized in the 2018 GRC and are known to have been deferred or cancelled subject to a $10M dollar authorization threshold from 2018 – 2020.

Program	Project Name	2018 GRC Operating Date	Safety/ Reliability/ Maintenance	Current Operating Date	2018 – 2020 Authorized
BLDGRENNOVATION	Long Beach Regional Office	12/1/2018	Yes	Cancelled	16,152
Notes:					
* Inclusive of FERC- & CPUC-Jurisdictional Costs and Customer Contributions					
- Exceed $10M Authorized in 2018-2020 period					