

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

Order Instituting Investigation into the November  
2018 Submission of Southern California Edison  
Risk Assessment and Mitigation Phase

I.18-11-006

**SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) INTERIM RISK  
SPENDING ACCOUNTABILITY REPORT FOR 2016 AND 2017**

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Dated: **March 14, 2019**

**SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) INTERIM RISK SPENDING  
ACCOUNTABILITY REPORT FOR 2016 AND 2017**

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SPENDING ACCOUNTABILITY REPORT FOR 2016 AND 2017**

Pursuant to and in compliance with the guidance provided in the January 3, 2019 letter from the Director of the Energy Division of the California Public Utilities Commission, Southern California Edison Company respectfully submits the attached interim Risk Spending Accountability Report for 2016 and 2017.

Respectfully submitted,

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March 14, 2019

**Attachment A**

**Southern California Edison Company's**

**Interim Risk Spending Accountability Report for 2016 and 2017**

**Southern California Edison Company's Interim Risk  
Spending Accountability Report for 2016 and 2017**

**March 14, 2019**

## INTRODUCTION

Southern California Edison Company's (SCE's) Interim Risk Spending Accountability Report for 2016 and 2017 is organized into six sections and three appendices. The six sections are organized as follows: First, the Background section summarizes the regulatory background giving rise to the report, including Energy Division's guidance to SCE about the contents and format of this report. Second, SCE presents graphs of the recorded aggregate operations and maintenance (O&M) expenses and capital expenditures for 2016 and 2017 relative to what was authorized in the 2015 General Rate Case (GRC) for the safety, reliability and maintenance activities covered in this report. Together with the graphs, SCE offers a high-level summary explaining certain drivers for the variances.

Third, SCE offers important context that applies where, as here, the variance analysis involves multi-year rate cases using forecast-based ratemaking. Fourth, SCE describes how it chose the activities 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. Finally, the last section covers considerations specific to balancing and memo accounts.

The three appendices provide the following:

- Appendix 1 contains the required variance explanation for (a) expense activities with a difference of at least \$10 million (or a percentage difference of at least 20%) subject to a minimum difference of \$5 million; and (b) capital expenditures with a difference of at least \$20 million (or a percentage difference of at least 20%) subject to a minimum difference of \$10 million.<sup>1</sup>

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<sup>1</sup> For these activities meeting the materiality thresholds, the Energy Division also directed that SCE provide (a) a description of the programs, (b) location in 2015 and 2018 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. Items (a) and (b) are in Appendix 2 where the balance of programs (even those not meeting the materiality threshold) are listed; item (c) is in Appendix 3. Item (d) is not applicable given that SCE ultimately sought authorization to recover costs for two new relevant programs—the Overhead Conductor Program and Grid Modernization—in the 2018 GRC.

- Appendix 2 contains *all* applicable activities, regardless of the materiality threshold.
- Appendix 3 lists all activities from Appendix 1 that were canceled or deferred.

During 2016 and 2017, 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. At times, SCE appropriately varied from what the Commission authorized when circumstances changed, needs emerged, or new and better solutions later appeared.

In addition, over the last seven years SCE has undertaken several initiatives to improve the effectiveness and efficiency of its work processes. This has helped SCE temper cost increases despite increasing workload. For example, SCE’s GRC operating expense request in the 2018 GRC (for year 2018) was nearly \$130 million lower than what was previously authorized for 2015, even though costs have increased in areas such as pension and benefits and IT license renewals.<sup>2</sup>

## I.

### **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.”<sup>3</sup> The Energy Division was given the responsibility to develop the requirements and, ultimately, to review the filed reports.

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<sup>2</sup> See A.16-09-001, Exhibit SCE-01, pp. 7-8 (testimony of SCE CEO Kevin Payne).

<sup>3</sup> D.14-12-025, p. 43.



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<sup>4</sup> covering years 2016 and 2017 (“Spending Accountability Report Letter,” or “Letter”).<sup>5</sup> In addition to showing authorized versus actual spending for the record year (expressed in terms of dollars and percentages), the Spending Accountability Report Letter asks SCE to include a derivation of authorized amounts,<sup>6</sup> and to discuss (where applicable) related balancing or memorandum accounts.<sup>7</sup>

The Letter attached a suggested template for presenting tables and other information in the interim reports. SCE has adhered to the general structure of the suggested template. For example, the tables found in the appendices are organized by functional area (generation, transmission, distribution, and other),<sup>8</sup> for both O&M and Capital separated by years (2016 and 2017). The material contained in the appendices, as described above, provides the various categories of information requested by the Energy Division.

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<sup>4</sup> 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.”

<sup>5</sup> The Energy Division directed that the interim Spending Accountability Report be filed and served by February 28th, 2019. On February 22nd, SCE requested an extension of two weeks to file the Interim Report. The request was duly granted by Ms. Alice Stebbins, Executive Director of the Commission, on February 26.

<sup>6</sup> See Section V. below.

<sup>7</sup> See Section VI. below.

<sup>8</sup> SCE uses the category of “other” because that terminology is found in Attachment A of the Spending Accountability Report Letter.

## II.

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

#### A. O&M

For 2016 and 2017, SCE spent approximately \$95 million and \$85 million, respectively, less than authorized on O&M for the applicable safety, reliability and maintenance activities, as show in the table below.

*Table II-1  
O&M Spending Accountability Report Variances by Function*

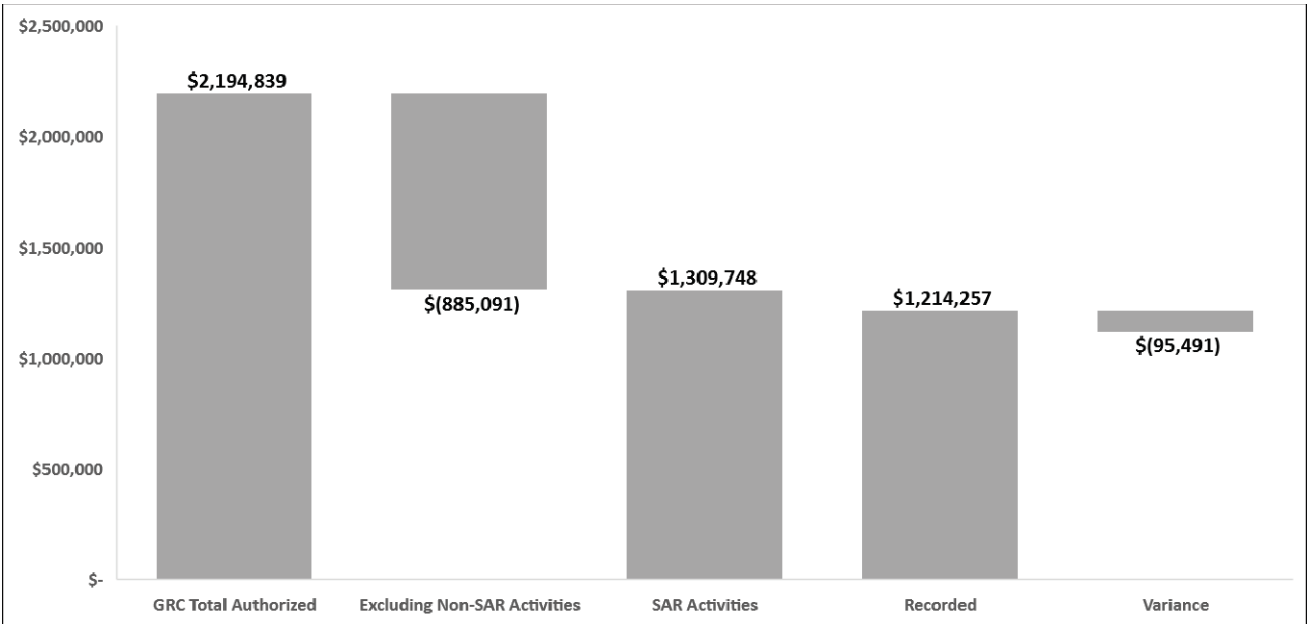
Function	2016			2017		
	Authorized	Recorded	Variance	Authorized	Recorded	Variance
Distribution	\$458,064	\$448,447	(\$9,617)	\$463,790	\$460,653	(\$3,137)
Generation	\$245,481	\$192,824	(\$52,657)	\$249,866	\$193,193	(\$56,673)
Other	\$432,218	\$414,249	(\$17,969)	\$440,592	\$438,707	(\$1,885)
Transmission	\$173,985	\$158,737	(\$15,248)	\$176,307	\$152,507	(\$23,800)
Grand Total	<b>\$1,309,748</b>	<b>\$1,214,257</b>	<b>(\$95,491)</b>	<b>\$1,330,555</b>	<b>\$1,245,060</b>	<b>(\$85,495)</b>

The figures below depict the same information within the context of the “total company authorized spending for each record year.”<sup>9</sup>

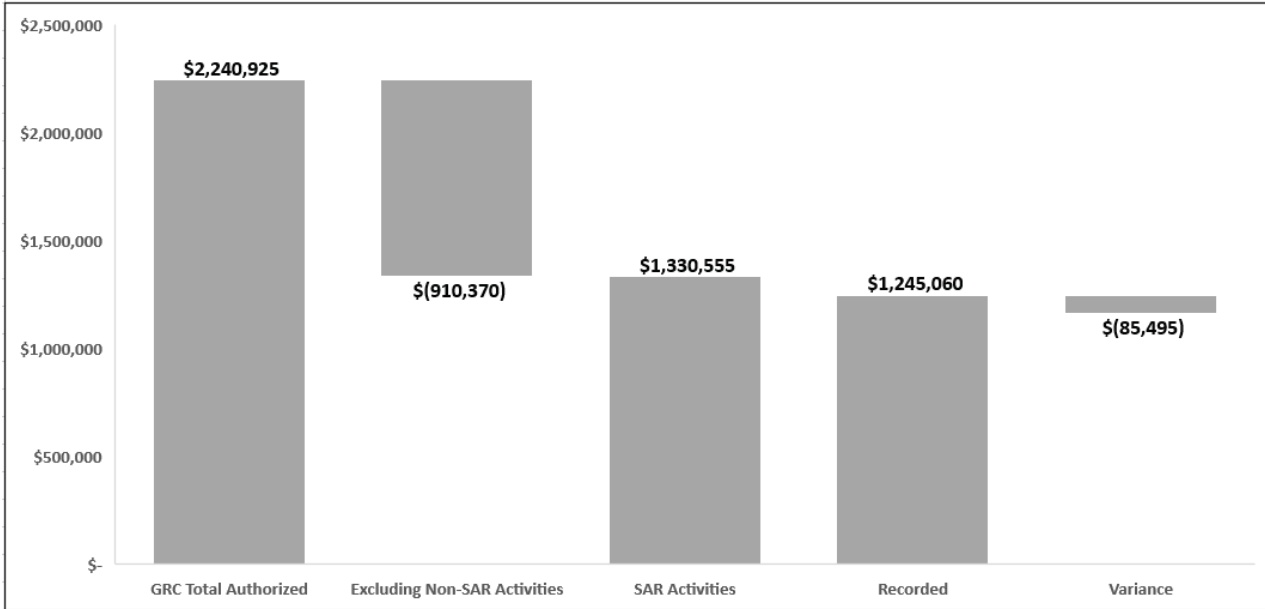
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<sup>9</sup> Letter, p. 2.

**Figure II-1**  
**2016 O&M GRC Authorized vs. Recorded**



**Figure II-2**  
**2017 O&M GRC Authorized vs. Recorded**



SCE experienced the above-illustrated levels of O&M underspend in large part due to savings it obtained through Operational Excellence and similar initiatives that increased efficiency. Some of these items are described below. The Commission recognized and encouraged this result when it established the post-test year ratemaking mechanism for SCE’s 2015 GRC (i.e., the authorized spending for 2016 and 2017): “When deciding on an appropriate PTYR mechanism to use, we target a mechanism that is simple; accurately aligns with how costs are incurred for the utility; and gives the utility an incentive to manage costs while enhancing productivity.”<sup>10</sup>

Although the aggregate O&M spending was lower than authorized, SCE notes that it did overspend in vegetation management (as described in Section II.A.3(a) below). Examples of some O&M variances are below:

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<sup>10</sup> See D.15-11-021, p. 390.

1. **Generation**

a) **Mountainview**

SCE renegotiated a General Electric contract service agreement in 2015, resulting in lower operating costs. These savings of approximately \$27 million in 2016 and \$22 million in 2017 were material, because contract service agreement costs have historically represented a significant percentage of the plant's total annual O&M expense.

b) **Power Procurement**

Energy Procurement Management (EPM) labor expenses were approximately \$13 million and \$18 million below authorized for 2016-2017, respectively, due to employee attrition, a delay in filling vacancies, and reduced staffing relative to the authorized level owing to SCE's continuing effort to manage costs.<sup>11</sup> Non-labor expenses were less than authorized due to centralizing corporate functions, reducing use of contractors and consulting services, and incurring less employee travel and related training.

2. **Transmission**

a) **Substation Construction & Maintenance**

The O&M for substation construction and maintenance was approximately \$6 million below authorized for each of 2016 and 2017, primarily due to the reduced scope of Shop Services and Instrumentation Division functions at the switchyard near SONGS, as well as lower costs from overhead organizations support.

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<sup>11</sup> Also, recorded labor was lower than the authorized level due to recategorizing costs and assigning them to various other SCE organizations such as Finance, IT, HR and Regulatory Affairs.

b) **Transmission – Line, Structure, Road, and Right-of-Way Maintenance**

SCE underspent approximately \$10 million for 2016 and \$4 million for 2017. This occurred in part because in 2015 we moved away from a “calendar-based” wash schedule for insulators to a “condition-based” wash program. The change was intended to make our insulator maintenance program more effective by restricting the washing activity to insulators that visually indicated an undesirable degree of contamination. This helped reduce unnecessary washing activity. The new program requires first visually inspecting a circuit for contamination or signs of imminent failure before any hot-washing is conducted.

3. **Distribution**

a) **Inspection of Distribution Overhead and Underground Lines and Equipment**

The variance analysis shows an ostensible underspend of approximately \$12 million in 2017.<sup>12</sup> This account includes both the cost of the work being done, *offset by* credits from third parties. The Commission authorized a forecast of approximately \$2 million of credits. But SCE realized a total of \$9 million of credits. The additional \$7 million of credits necessarily reduces the total costs that are mapped to this activity. Thus, in the context of this report, the level of work in inspecting distribution lines and equipment can appear to be lower *than the actual level of work SCE performed*. When this \$7 million delta is accounted for, the overall O&M variance for this activity decreases to approximately \$5 million. However, that \$5 million variance does not actually represent an underspend. Because of the way costs have been mapped in this report, the costs are simply reflected in a different account—Distribution

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<sup>12</sup> The variance in 2016 did not meet the specified threshold for this report.

Intrusive Pole Inspections.<sup>13</sup> In 2017, SCE continued to maintain compliance with General Order 165 inspection requirements.<sup>14</sup>

b) **Vegetation Management and Other Planned Maintenance of Distribution Overhead and Underground Lines and Equipment (Accounts 593.120 and 588.261)**

On planned maintenance activities, SCE overspent almost \$25 million in 2016, and \$38 million in 2017. Specifically, SCE overspent in vegetation management by approximately \$35 million and \$45 million in 2016 and 2017, respectively.<sup>15</sup> SCE underspent approximately \$10 million in 2016 and \$7 million in 2017 on other planned maintenance of distribution overhead and underground lines and equipment. That is because SCE's forecast assumed a certain level of follow-up maintenance work that would result from inspections and field observations. However, the recorded costs in 2016 reflect a somewhat lower volume of maintenance items found during inspections. Moreover, SCE realized lower cost-pers because of operational efficiencies.

4. **Other**

a) **Corporate Security**

The \$16 million and \$18 million underspend in 2016 and 2017, respectively, was primarily driven by SCE's decision not to proceed with implementing the workplace security and grid protection improvements project. This project would have involved adding metal detectors and X-ray scanning devices at multiple SCE locations. The decision not

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<sup>13</sup> Please refer to the variance analysis in Appendix 1 for Account 583.120 (Inspection of Distribution Overhead and Underground Lines and Equipment). As indicated there, the costs are reflected in the account for Distribution Intrusive Pole Inspections.

<sup>14</sup> See, e.g., Southern California Edison's Annual Report of 2017 Distribution Inspections Filed Pursuant to General Order No. 165 (filed July 2, 2018 in R.96-11-004).

<sup>15</sup> The Commission approved recovery of 2016 overspend in the D.19-01-006 adopting SCE's Catastrophic Events Memorandum Account application for 2015-2016.

to proceed was due to the negative impact on worker morale and significant operational adjustments required (e.g., staggered work schedules). Also, it appeared the measures ultimately may not materially alleviate threats.

**B. Capital**

With respect to capital spending in 2016-2017, SCE underspent on the covered safety, reliability and maintenance activities by approximately \$121 million in 2016, and then overspent by approximately \$77 million in 2017. Please refer to the table below.

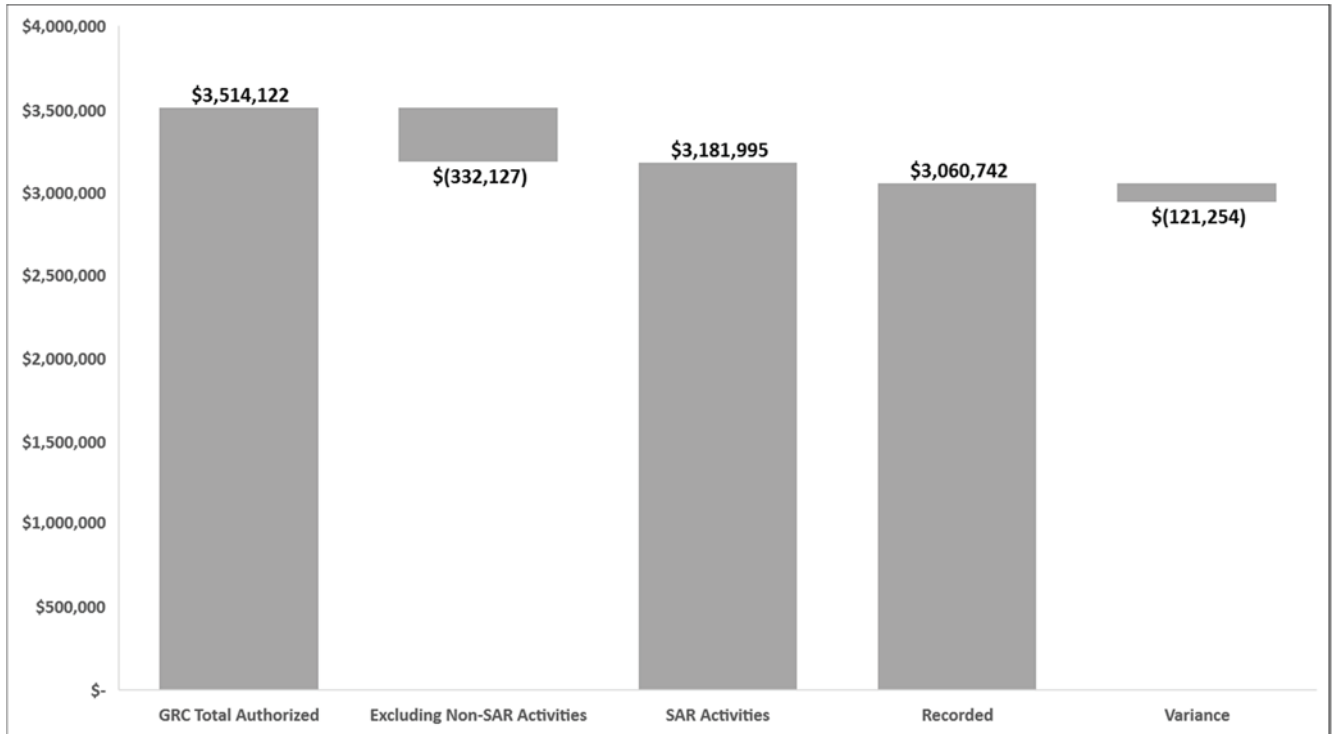
**Table II-2**  
**Capital Spending Accountability Report Variances by GRC Category**

Function	2016			2017		
	Authorized	Recorded	Variance	Authorized	Recorded	Variance
Distribution	\$1,604,773	\$1,690,681	\$85,335	\$1,636,869	\$1,680,681	\$43,813
Generation	\$127,541	\$123,700	(\$3,841)	\$130,092	\$88,424	(\$41,668)
Other	\$460,219	\$405,975	(\$54,244)	\$469,423	\$576,664	\$107,241
Transmission	\$989,462	\$840,959	(\$148,504)	\$1,009,252	\$976,950	(\$32,302)
Grand Total	\$3,181,995	\$3,060,742	(\$121,254)	\$3,245,635	\$3,322,719	\$77,084

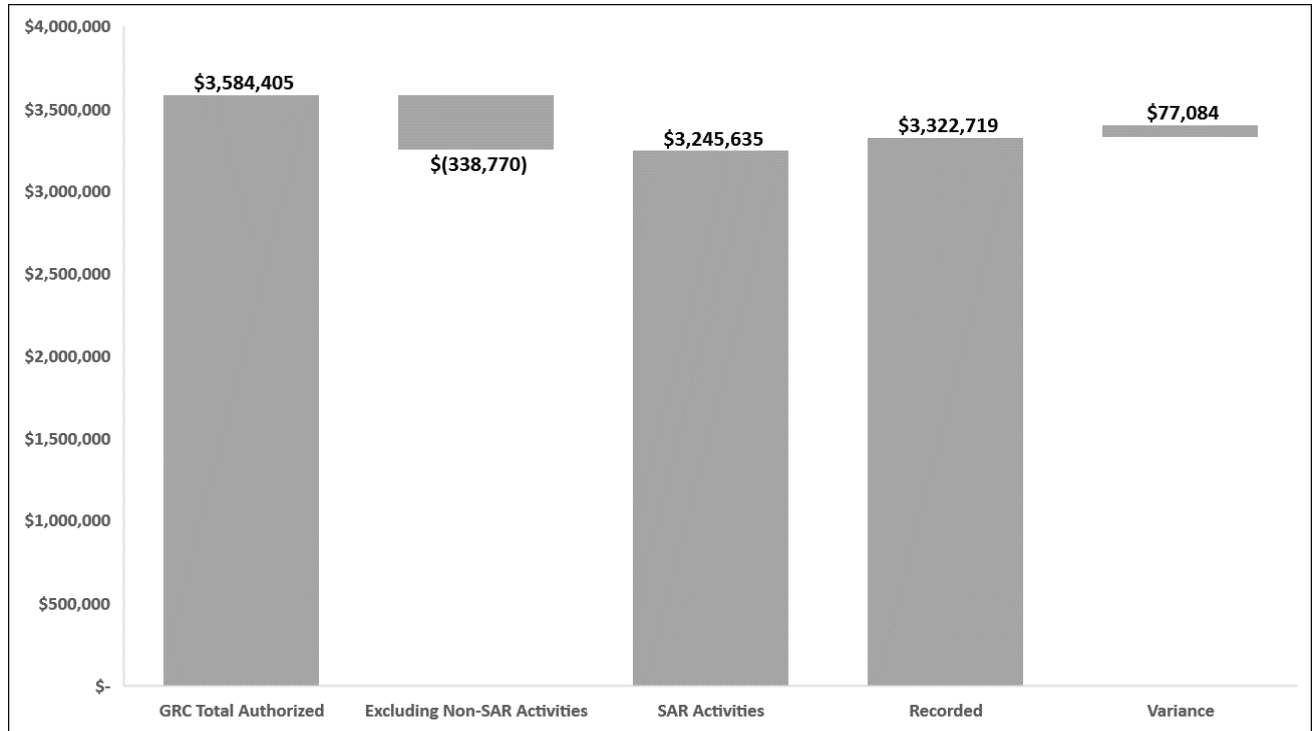
The graphs below present the same information within the context of the total company GRC-authorized spending for each record year.



**Figure II-3**  
**2016 Capital GRC Authorized vs. Recorded**



**Figure II-4  
2017 Capital GRC Authorized vs. Recorded**



*Below are examples of some variances by function.*

**1. Generation**

For 2016, SCE’s overall spend on generation activities is within \$4 million of what was authorized. For 2017, SCE deferred several hydro projects, resulting in underspend of approximately \$42 million.

**2. Transmission**

For 2016-2017 combined, SCE recorded approximately \$181 million less than authorized for all safety, reliability and maintenance activities covered in this report (not just

those meeting the materiality threshold). Although SCE significantly underspent in the large construction programs (Transmission System Planning and Distribution System Planning), this was partially offset by significant spending above authorized for transformers, circuit-breakers, and maintenance for the transmission line rating remediation program, and planned and reactive maintenance for transmission and substation facilities.

### **3. Distribution**

For 2016-2017 combined, SCE recorded approximately \$129 million more than authorized for all safety, reliability and maintenance activities covered in this report (not just those meeting the materiality threshold). It should be noted that SCE spent approximately \$236 million on SCE's overhead conductor program (OCP), a new safety program undertaken in between SCE's 2015 and 2018 GRCs.

OCP aims to mitigate the substantial public safety risks associated with energized downed wires. This program was not included in SCE's 2015 GRC, and thus was not a part of authorized spend. But SCE felt strongly that it needed to undertake the safety-based program in light of the analysis that SCE performed as it moved to risk-informed decision making. This is an example of SCE using management discretion to prudently undertake safety programs whenever needed, even if it means pivoting from prior plans and re-allocating authorized GRC funding from one area to another.

## **III.**

### **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 2015 GRC forecasts. 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.<sup>16</sup>

SCE's 2015 GRC encompassed test year 2015, and attrition years 2016 and 2017. SCE followed the schedule established by the Commission and presented its forecasts in 2013. The Commission issued its final GRC decision in November 2015.<sup>17</sup> 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 more than two years old. By the time SCE actually recorded spend for years 2016 and 2017, the forecasts were, respectively, three years and four years old. In the intervening years, conditions changed, new opportunities to improve operations and gain efficiencies were found, and additional needs emerged, as depicted in a few of the examples provided above.

In addition, this Spending Accountability Report covers years 2016 and 2017, the attrition years in SCE's 2015 GRC cycle. The authorized spending for those years was established through an overall attrition year adjustment, rather than a detailed examination and decision regarding the individual forecasts for those years.<sup>18</sup>

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.<sup>19</sup> In providing guidance on spending accountability reports, the Energy Division has confirmed that "a utility is allowed the flexibility to reprioritize the authorized

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<sup>16</sup> 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.").

<sup>17</sup> D.15-11-021.

<sup>18</sup> See D. 15-11-021, p. 2 ("This decision also authorizes attrition rate adjustments of \$209 million (4.04%) for 2016 and an additional \$272 million (5.04%) for 2017 ...").

<sup>19</sup> 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.

funds in order to ensure safe and reliable operations.”<sup>20</sup> 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.”<sup>21</sup> 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.”<sup>22</sup>

Lastly, the Energy Division itself has noted that it is requesting an “interim” report, and has confirmed that this is an evolving area for the Energy Division.<sup>23</sup>

#### IV.

#### **APPLICABLE SAFETY, RELIABILITY, AND MAINTENANCE-RELATED PROGRAMS**

The Spending Accountability Report Letter directed that SCE include a list of all 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, as well as programs with a maintenance activity.”

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<sup>20</sup> 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](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/SCESafety-RelatedSpending.pdf)

<sup>21</sup> CPUC Resolution E-4464 (May 10, 2012) at p. 7.

<sup>22</sup> D.11-05-018, at p. 27.

<sup>23</sup> See Spending Accountability Report Letter (“The Energy Division continues to refine its proposal for the outline and template for these reports. Meanwhile, the Energy Division endeavors to prepare SCE to comply with the risk spending verification requirements of the new GRC framework by directing SCE, via this letter, to file annual ‘interim’ Risk Spending Accountability Reports for the years between the Energy Division’s Safety Action Plan report covering 2015 and the first Risk Spending Accountability Report covering 2021.” )

In referring to SCE's 2018 GRC, the Energy Division appears to be pointing to the risk mapping of GRC activities to risk events, outcomes and impacts, as shown by SCE in A.16-09-001.<sup>24</sup>

This mapping:

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

This mapping served as the 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. SCE faced two challenges in utilizing the Risk Mapping from A.16-09-001 for purposes of the Spending Accountability Report. These two challenges are described below.

**A. Change in Criteria**

First, SCE had previously identified the appropriate safety-related programs by selecting any activity that scored in the Safety Impact dimension. For the Spending Accountability Report, SCE expanded this criteria to include programs that scored in the Reliability Impact Dimension. However, because there is not a Maintenance Impact dimension, SCE had to conduct a manual review of all programs that had not scored as either Safety- or Reliability-related. SCE included in the Spending Accountability Report any program that met the criteria specified by the Spending Accountability Report Letter.

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<sup>24</sup> See A.16-09-001, p. 37 (sub-section regarding workpaper).

**B. Timing Issues**

The second challenge SCE encountered was a matter of timing. Authorized amounts for 2016 were determined by the 2015 GRC Decision (D.15-11-021), which in turn were derived in some measure from SCE's presentation of GRC activities in SCE's Test Year 2015 GRC application. But as discussed above, activities qualifying for the Spending Accountability Report were based on the risk modeling of GRC activities as presented in the 2018 GRC. SCE had necessarily made certain changes to its GRC presentation between the two GRC applications. In some cases, this resulted in an imperfect match of authorized numbers to recorded numbers for the 2018 GRC activities. SCE attempted to reconcile these items by matching GRC accounts as closely as possible.

**V.**

**DERIVATION OF AUTHORIZED DOLLARS**

On November 12, 2013, SCE filed Application (A.)13-11-003 requesting, among other things, an increase in its base revenue requirements for the Test Year 2015 and Post-Test Years 2016 and 2017.<sup>25</sup>

The Commission issued the 2015 SCE GRC Decision (D.15-11-021) on November 5, 2015. The GRC Decision adopted, among other things, a Post-Test Year Ratemaking (PTYR) mechanism that escalates the adopted 2015 CPUC-jurisdictional capital additions in 2016, and again in 2017. SCE derived the 2016 and 2017 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. The 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, mobile home park capital investments, and

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<sup>25</sup> 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.

Aliso Canyon. The Spending Accountability Report does, however, include FERC-jurisdictional capital and O&M reviewed in the GRC.

For operations and maintenance (O&M) related expenses, the Energy Division approved SCE Advice Letter (AL) 3314-E (as supplemented by 3314-E-A and 3314-E-B), for the 2016 GRC PTYR Revenue Requirement (with an effective date of November 1, 2016), as well as SCE AL 3514-E for the authorization of the 2017 PTYR Revenue Requirement (with an effective date of December 20, 2016). This was in accordance with the 2015 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.

## VI.

### **PROGRAMS RECORDED IN BALANCING OR MEMORANDUM ACCOUNTS**

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. SCE has identified three regulatory mechanisms that are relevant.

First, in SCE's 2015 GRC decision, the Commission adopted the Pole Loading and Deteriorated Pole Balancing Account (PLDPBA).<sup>26</sup> This account covers certain, but not all, pole-related activities. The balancing account is subject to a cap of 15% above authorized revenue requirement for the cumulative total over the years 2016 and 2017. Because activity variances are expressed in direct dollars rather than revenue requirements, this aspect of the PLDPBA directly impacts how the variances for the PLDPBA activities can be interpreted. SCE is not managing to the individual activities, but both O&M expense and capital expenditures recorded

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<sup>26</sup> See D.15-11-021, pp. 143-144.



to the PLDPBA on that two-year, cumulative revenue requirement basis. The table below outlines the activity recorded in the PLDPBA for both years.

**Table VI-3**  
***Pole Loading & Deteriorated Pole Balancing Accounts***

<b>Pole Loading &amp; Deteriorated Pole Balancing Accounts</b>							
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
	<b>Beginning Balance</b>	<b>Transfer To Base Bal Account</b>	<b>Authorized</b>	<b>Recorded 1/ Under Collection</b>	<b>(Over)/ Under Collection A+B+C+D</b>	<b>Interest</b>	<b>Ending Balance E+F</b>
Year 2016	(36,181)	36,181	(8,668)	(34,663)	(43,331)	(162)	(43,493)
Year 2017	(43,493)	43,493	(35,612)	38,311	2,699	(82)	2,617

1/ Includes any prior year adjustments

Second, in SCE’s 2015 GRC decision the Commission also adopted a Safety Reliability Investment Incentive Mechanism (SRIIM).<sup>27</sup> The aspect of this mechanism that is relevant here is the capital expenditures for seven key activities covering major safety and reliability-related expenditures. Under the SRIIM, the revenue requirement resulting from any underspending of the capital expenditures on a cumulative basis (cumulative across all three years of the rate case cycle and across all seven activities) will be refunded. Again, this aspect of the mechanism impacts how the variances for those activities can be interpreted. On the one hand, the variances are in direct dollars, and for the calendar years 2016 and 2017. On the other hand, SCE managed to the total expenditure target across all seven activities, and across the cumulative expenditures over the years 2015-2017. While certain other features of the SRIIM allow exceptions to this refunding aspect of the mechanism, none of those exceptions were invoked for the 2015-2017 cycle.<sup>28</sup>

Third, there are costs reflected in this report that are recorded in the Catastrophic Event Memorandum Account (CEMA). 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

<sup>27</sup> See D.15-11-021, pp. 39-41.

<sup>28</sup> See Advice Letter 3775-E, and subsequent approval dated May 16, 2018.  
<https://www1.sce.com/NR/sc3/tm2/pdf/3775-E.pdf>

to its customers; (2) repairing, replacing, or restoring damaged utility facilities; and (3) complying with governmental agency orders from declared disasters. In A.18-03-004, SCE filed an application to seek recovery of costs recorded in the CEMA for the 2015-2016 Drought costs and for 2016 catastrophic Firestorms (Erskine, Sand, and Blue Cut). The Commission in D.19-01-006 authorized SCE recovery of approximately \$46.7 million of drought-related vegetation management in 2015 and 2016 and found \$17.6 million of capital reasonable. This capital was associated with restoring power following wildfires that occurred in 2016.<sup>29</sup>

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<sup>29</sup> SCE has not yet filed for recovery of amounts recorded in 2017.

**Appendix 1 to Attachment A**

**Spending Accountability Report Variances for Activities Meeting Variance Thresholds**

## Generation 2016 O&M

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
554 – Mountainview	42,268	15,593	(26,675)	(63%)	Variance due to underspend for GE Contract Services Agreement (CSA), which was re-negotiated in 2015. CSA costs have historically been a significant percentage of the plant's total annual O&M expense.
557 - Power Procurement	43,745	30,457	(13,288)	(30%)	Energy Procurement Management (EPM) labor expenses were below authorized due to employee attrition, a delay in filling vacancies, and reduced staffing relative to the authorized level as part of our continuing effort to manage costs. Also, recorded labor was lower than the authorized level due to transfer of costs to various other SCE organizations - Finance, IT, HR and Regulatory Affairs. Non-labor expenses were less than authorized due to centralizing corporate functions, reducing use of contractors and consulting services, and incurring less employee travel and related training.
545 - Maintenance Of Misc. Hydraulic Plant	17,333	9,805	(7,528)	(43%)	The main factors contributing to the lower-than-adopted recorded expense were the ongoing California drought. Starting in approximately 2012, the ongoing drought has significantly reduced the generation output of SCE's Hydro fleet, compared to historical average levels. The lower generation output has also decreased the need for and frequency of equipment-breakdown repairs; this reduced expenses for repair parts, lowered overtime labor costs for maintenance personnel, and shrunk other related costs (e.g., contract expense).

## Generation 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
554 - Mountainview	42,631	20,737	(21,894)	(51%)	Variance due to underspend for GE Contract Services Agreement (CSA), which was re-negotiated in 2015. The re-negotiation efforts led to better contract pricing for SCE. CSA costs have historically made up a significant percentage of the plant's total annual O&M expense.
557 - Power Procurement	44,756	26,532	(18,224)	(41%)	Energy Procurement Management (EPM) labor expenses were below authorized due to employee attrition, a delay in filling vacancies, and reduced staffing relative to the authorized level as part of our continuing efforts to manage costs. Also, recorded labor was lower than the authorized level due to transfer of costs to various other SCE organizations - Finance, IT, HR and Regulatory Affairs. Non-labor expenses were less than authorized due to centralizing corporate functions, reducing use of contractors and consulting services, and incurring less employee travel and related training.
539 - Misc. Hydraulic Power Generation Expenses	34,310	24,831	(9,479)	(28%)	Starting in approximately 2012, the ongoing drought has significantly reduced the generation output of SCE's Hydro fleet compared to historical average levels. Lower generation output has reduced operating expenses. These operating expenses include overtime labor costs for operating personnel, as well as items such as cleaning supplies and office supplies. Operational efficiency improvements were achieved by centralizing former SCE Hydro and Generation employees into other SCE organizations (e.g., Human Resources, IT and Finance) and other Hydro staffing reductions that occurred in late 2012, and again in late 2013.

### Generation 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
					These improvements further contributed to the variance between forecast and recorded expenses.

## Generation 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Hydro Capital – Misc Electrical	32,926	1,815	(31,111)	(94%)	Lower-than-forecast CAPEX occurred because Hydro capital projects originally forecast to occur were deferred to later years. Includes Sub-Station Refurbishment - Lee Vining and Minaret were postponed.
Dams and Waterways	18,588	3,538	(15,050)	(81%)	Lower-than-forecast CAPEX occurred because Hydro capital projects originally forecast to occur were deferred to later years. Includes Rush Creek Projects (Dam Updates, Agnew Tram & Powerline).
Mountain View -- Specific	0	62,256	62,256	N/A	Advanced Gas Path and Dry Low Nox (AGP/DLN) Combustion Turbine (CT) upgrades were incorporated into the new GE CSA.
Mountain View – Blanket	1,154	(23,928)	(25,082)	(2174%)	Materials were charged to Mountainview Spare Parts WBS in 2015 but were corrected to Advanced Gas Path and Dry Low Nox upgrade in 2016.
Hydro Capital – Specific NHD	11,784	(532)	(12,316)	(105%)	Lower-than-forecast CAPEX occurred because Hydro capital projects originally forecast to occur were deferred to later years. Includes Hydro Re-licensing - Mammoth Pool HB Valve and Big Creek.
Hydro Capital – Blanket Division	0	10,244	10,244	N/A	Actual costs related to Advanced Gas Path and Dry Low Nox (AGP/DLN) Combustion Turbine (CT) upgrades were inadvertently charged to this WBS. Correction was made in 2017 to transfers costs from Hydro Capital to AGP/DLN.

## Generation 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Hydro Capital – Misc Electrical	33,584	4,799	(28,785)	(86%)	Lower-than-forecast CAPEX occurred because Hydro capital projects originally forecast to occur were deferred to later years. Includes Sub-Station Refurbishment - Lee Vining and Minaret - transferred to T&D and postponed.
Hydro Capital – Specific NHD	12,020	126	(11,894)	(99%)	Lower-than-forecast CAPEX occurred because Hydro capital projects originally forecast to occur were deferred to later years. Includes Hydro Re-licensing - Mammoth Pool HB Valve and Big Creek.



## Transmission 2016 O&M

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
571.150 - Transmission Line, Structure, Road, and Right-Of-Way Maintenance	31,327	21,764	(9,563)	(31%)	In 2015, SCE moved away from a “calendar based” wash schedule to a “condition based” wash program. The change was intended to improve the effectiveness of our insulator maintenance program by limiting the washing activity to insulators that visually indicated an undesirable degree of contamination. This would help eliminate unnecessary washing activity. The new program requires visually inspecting a circuit for contamination or signs of imminent failure before any hot-washing is conducted. Road and Right-of-Way Maintenance saw less grading requirements compared to the historical average.
568.150 – Substation Construction & Maintenance – Supervision of Transmission Substation Maintenance	16,632	10,381	(6,251)	(38%)	Underrun primarily occurred due to the reduced scope of Shop Services Instrumentation Division (SSID) functions at the switchyard near SONGS, as well as lower costs associated with overhead organizational support.

## Transmission 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
568.150 – Substation Construction & Maintenance – Supervision of Transmission Substation Maintenance	16,958	11,341	(5,617)	(33%)	Underrun primarily occurred due to the reduced scope of Shop Services Instrumentation Division (SSID) functions at the switchyard near SONGS, as well as lower costs associated with overhead organizational support.

## Transmission 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
TSP Projects	232,311	76,943	(155,368)	(67%)	Underrun primarily due to licensing and contractor/construction delays. An example of licensing delays is Alberhill/Valley-Ivyglen (VIG). Examples of contractor/construction delays are Santa Barbara & Moorpark-Newbury.
DSP Substations	145,199	60,599	(84,600)	(58%)	Underrun driven by local permitting and construction delays to major projects.
Circuit Breakers	24,863	49,849	24,986	100%	Installed more circuit breakers than originally planned in order to maintain grid reliability through circuit automation.
Transformer Banks	67,961	104,905	36,944	54%	Higher material expenses and additional engineering and project support costs than previously forecast. Greater demand and load on the system requires larger transformer banks which are more expensive. The addition of solar power with customers generating power into the distribution system also requires more robust and expensive transformers in order to maintain voltage balance and system reliability.

## Transmission 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Trans Mtce Planned	6,347	27,888	21,541	339%	Due to the age and condition of our transmission infrastructure, SCE implemented a new planned capital maintenance approach in 2013 that increased the number of maintenance items addressed in the planned capital maintenance category. Prior to 2013, SCE's planned capital maintenance primarily focused on items that needed immediate replacement. Increased maintenance drove recorded costs to exceed authorized values.
Misc Equip	25,884	67,065	41,181	159%	Transmission Substation Misc Equipment variance due to increased requirements concerning Substation Physical Security. Expenditures represent spending to enhance power feeds for security equipment and lighting, provide ballistic barriers around critical equipment, install concealment measures, and replace or modify substation fences and gates against copper theft.
Spare Parts	2,695	13,496	10,801	401%	Overrun driven primarily by 'AA' (500/220 kV) Bank Transformer purchase (100% FERC-jurisdictional).
Projects (TLRR)	29,146	58,231	29,085	100%	SCE committed to a change in program strategy to achieve compliance with GO 95 requirements by 2025. This required substantial investment in Transmission Line Rating Remediation (TLRR), which is reflected in our 2016 recorded costs (~87% FERC-jurisdictional).
Operational Facilities	5,864	16,342	10,478	179%	Overrun primarily driven by Control Building Modernization upgrade at Mira Loma, Eldorado, Vincent & Devers substations. (FERC-jurisdictional).

## Transmission 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Circuit Breakers	25,360	44,179	18,818	74%	Installed more circuit breakers than originally planned in order to maintain grid reliability through circuit automation.
DSP Substations	148,103	73,193	(74,910)	(51%)	Underrun driven by licensing delays and changes in load growth forecasts.
LADWP & PV	45,565	22,251	(23,314)	(51%)	Underrun primarily driven by LADWP DC Electrode Replacement project delay (100% FERC-Jurisdictional).

## Transmission 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Trans Mtce PL	6,474	32,677	26,203	405%	Due to the age and condition of our transmission infrastructure, SCE implemented a new planned capital maintenance approach in 2013. This new approach increased the number of maintenance items addressed in the planned capital maintenance category. Prior to 2013, SCE's planned capital maintenance primarily focused on items that needed immediate replacement. Increased maintenance drove recorded costs to exceed authorized.
Projects (TLRR)	29,729	117,438	87,709	295%	SCE committed to a change in program strategy to achieve compliance with GO 95 requirements by 2025. This required substantial investment in Transmission Line Rating Remediation (TLRR). The change is reflected in our 2017 recorded costs (~87% FERC-jurisdictional).
TSP Projects	236,957	88,158	(148,799)	(63%)	Underrun primarily due to lower load growth Transmission Substation Project (TSP) program as a result of projects that were delayed into the 2018-2020 timeframe and beyond. The lower capital expenditures result from various factors, including delays in required licensing.
WDAT/TO SCE Funded	10,404	317	(10,087)	(97%)	Program underrun compared to authorized because of reductions to scope of projects such as Willow Springs Solar.

## Distribution 2016 O&M

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
588.261 - Consolidated Mobile Solutions Benefits					
593.120 - Planned Maintenance of Distribution Overhead & Underground Lines/Equipment, Vegetation Management Apparatus Inspection & Maintenance	137,547	162,077	24,530	18%	Drought-related vegetation management exceeded authorized by \$35M due to historic drought conditions. Overrun is partially offset by underruns associated with lower maintenance items than assumed in GRC forecast from inspections and field observations. Also, reduced cost pers resulted from gaining operational efficiencies in DIMP (Distribution Inspection Maintenance Program) and implementing Consolidated Mobile Solutions (CMS).
593.125 - Distribution Pole Repairs and Related Expense	10,587	3,242	(7,345)	(69%)	Actual percentage of assessed poles requiring repairs was lower than forecast.

## Distribution 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
583.120 - Inspection of Distribution Overhead and Underground Lines and Equipment	<i>cost of work</i> 25,479	20,255	(5,224)		The variance analysis shows an ostensible underspend of approximately \$12 million in 2017. This account includes both the cost of the work being done <i>offset by</i> credits from third parties. The Commission authorized a forecast of approximately \$2 million of credits, but SCE realized a total of \$9 million of credits. When accounting for this \$7 million delta, the overall remaining O&M variance for this activity decreases to approximately \$5 million. However, that \$5 million variance does not actually represent an underspend. Because of the use of the 2018 GRC mapping of costs in this report, approximately \$5 million spent for distribution pole inspections is mapped to Account 583.125 (Distribution Intrusive Pole Inspections). <sup>30</sup>
	<i>credits</i> <u>(2,087)</u>	<u>(9,253)</u>	<u>(7,166)</u>		
	<i>net</i> 23,392	11,002	(12,390)	(53%)	
580.260 - Distribution Grid Technology	19,872	12,193	(7,679)	(39%)	
588.261 - Consolidated Mobile Solutions Benefits					Drought-related vegetation management exceeded authorized by \$46M due to historic drought conditions. Overrun is partially offset by underruns associated with lower maintenance items than assumed in GRC forecast from inspections and field observations as well as reduced cost per resulted from gaining operational efficiencies in DIMP (Distribution Inspection Maintenance Program) and implementing Consolidated Mobile Solutions (CMS).
593.120 - Planned Maintenance of Distribution	138,334	176,081	37,747	27%	

<sup>30</sup> Account 583.125 is found in Appendix 2.



## Distribution 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Overhead & Underground Lines/Equipment, Vegetation Management Apparatus Inspection & Maintenance					
593.125 - Distribution Pole Repairs and Related Expense	10,744	3,494	(7,250)	(67%)	Actual percentage of assessed poles requiring repairs was lower than forecast.

## Distribution 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Poles <sup>31</sup>	346,959	393,907	46,948	14%	Poles program higher as a result of a higher cost per unit. The higher costs are primarily driven by environmental and overhead costs, as well as more complex pole replacements. There was an additional increase in costs associated with poles not installed in 2016.
Overhead Conductor Program (OCP)	0	97,330	97,330	N/A	The 2015 GRC did not include the OCP capital program, which means there were no dollars authorized for this program in the 2015 GRC decision. SCE first requested this program in the 2018 GRC to address public safety concerns associated with wire-down events.
Distribution - Storm	43,964	64,865	20,901	48%	These costs are based on a rolling 5-year average. More severe storm activity, including brush and wildfires, has caused increases in costs associated with restoring service to customers, repairing or replacing facilities. The recorded amounts include total storm costs, including those recorded in our Catastrophic Event Memorandum Account.
4 kV Substation Elimination	87,267	107,452	20,185	23%	Overrun due to accelerated construction activity on Metro East, North Coast, and Desert Region. This is due to aging 4kV system and as determined by inspections and engineering analysis. This program also enables higher penetration levels of distributed energy resources.

<sup>31</sup> The majority is distribution, but approximately 10% is transmission.

## Distribution 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
New Service Connections	321,231	225,100	(96,131)	(30%)	This forecast is based on economic analysis and expected growth in new construction in various areas. Less demand materialized than expected in the GRC forecast.

## Distribution 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
UG Structure Replacement	58,905	76,014	17,109	29%	Variance driven by increase in unit cost associated with changing to a “shoo-fly” work method employed to minimize the overall outage impact on our customers and to reduce worker safety risk associated with working with live equipment in confined spaces. Additionally, utilizing a shoo-fly method allows crews to simultaneously replace other equipment, such as transformers, switches and cable that needs to be replaced without burdening our customers with additional outages.
Plant Betterment	8,114	23,289	15,175	187%	Overrun mainly due to an increased amount of upgrades identified to meet load-related system needs or requested by district personnel based on regional grid needs.
Prefab (395)	26,553	13,659	(12,894)	(49%)	In 2012, SCE implemented several process improvements and other work management efficiencies gained through our Distribution Field Program. We have been able to streamline the material and staging activities in our districts, which is reflected in the declining level of expenditures for Prefabrication.

## Distribution 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
4 kV Substation Elimination	89,012	107,349	18,337	21%	Overrun due to accelerated construction activity on Metro East, North Coast, and Desert Region. This accelerated activity was due to aging 4kV system and as determined by inspections and engineering analyses. This program also enables higher penetration levels of distributed energy resources.
Overhead Conductor Program (OCP)	0	138,714	138,714	N/A	The 2015 GRC did not include the OCP capital program, which means there were no dollars authorized for this program in the 2015 GRC. SCE first requested this program in the 2018 GRC to address public safety concerns associated with wire down events.
New Service Connections	327,656	213,018	(114,637)	(35%)	This forecast is based on economic analysis and expected growth in new construction in various areas. Less demand materialized than expected in the GRC forecast.
Plant Betterment	8,276	21,614	13,338	161%	Overrun mainly due to an increased amount of upgrades needed to meet load related system needs or identified by district personnel based on regional needs.
Prefab (395)	27,084	15,183	(11,902)	(44%)	In 2012, SCE implemented several process improvements and other work management efficiencies gained through our Distribution Field Program. We have been able to streamline the material and staging activities in our districts; this is reflected in the declining level of expenditures for Prefabrication.

## Distribution 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Distribution – Storm	44,843	88,778	43,935	98%	These costs are based on a rolling 5-year average. More severe storm activity including brush and wild fires has caused increases in costs associated with restoring service to customers, repairing or replacing facilities. The recorded amounts include total storm costs even those recorded in our Catastrophic Event Memorandum Account.

## Other 2016 O&M

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Corporate Security - 920-921	43,417	27,053	(16,364)	(38%)	The variance is primarily driven by SCE's decision not to proceed with implementing the workplace security and grid protection improvements project, involving adding metal detectors and X-ray scanning devices at multiple SCE locations. The decision not to proceed was due to the negative impact on worker morale and significant operational adjustments required (e.g., staggered work schedules); also, it appeared the measures may not materially alleviate threats.
903.800 - CCC And Phone Bills	52,410	42,248	(10,162)	(19%)	The variance is primarily driven by operational services excellence savings that resulted in less call representatives and supervisors needed. This included reduced hours of operation for SCE contact center, reduced numbers of calls due to improved IVR (interactive voice response), increased call outsourcing to vendors, and call deflection.
Corporate Real Estate - 920-921	26,452	18,315	(8,137)	(31%)	The variance was driven by Corporate Real Estate's reduction in force. The organization utilized a new operating model that relies heavily on an external service provider rather than internal resources.
Local Public Affairs - 920-921	14,112	6,458	(7,654)	(54%)	The variance is due to focusing on core public affairs work, improving business processes, adopting new technology/new tools, and reorganizing our team to be more efficient.

## Other 2016 O&M

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Infrastructure Technology Services - 920-921 Incremental O&M For New Software Projects – 920-921	125,751	181,634	55,883	44%	The higher costs result from IT outsourcing work that had previously been handled internally. The work was transferred to third-party vendors (Managed Service Provider recorded costs \$66M). This led to reductions in labor expenses (headcount reductions) to streamline the organization. In turn, this resulted in lower costs in the Client Services & Planning, Enterprise Information Management & Architecture, Infrastructure Technology Services & Technology Delivery & Maintenance 2015 GRC activities.
Technology Delivery & Maintenance – 920-921	52,841	29,615	(23,226)	(44%)	The lower costs resulted from the IT transformation that occurred after the 2015 GRC. This involved combining the Business Integration & Delivery groups into one IT group responsible for implementing IT SW solutions, eliminating duplicative resources, and utilizing a managed service provided (MSP) to perform application development and maintenance work.
903.500 - Billing	23,754	30,701	6,947	29%	CSOD performed pre CS Replatform work, including building the business case, as-is and to-be analysis, and set up PMO. In addition, Mailing Operations moved from IT to CS Billing.



## Other 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Technology Delivery & Maintenance – 920-921	53,963	34,282	(19,681)	(36%)	The lower costs resulted from the IT transformation that occurred after the 2015 GRC. The transformation involved combining the Business Integration & Delivery groups into one IT group responsible for implementing IT SW solutions, eliminating duplicative resources, and utilizing a managed service provided (MSP) to perform application development and maintenance work.
Corporate Security – 920-921	43,912	25,801	(18,111)	(41%)	The variance is primarily driven by SCE’s decision not to proceed with implementing the workplace security and grid protection improvements project. That project would have added metal detectors and X-ray scanning devices at multiple SCE locations.
Infrastructure Technology Services – 920-921 Incremental O&M For New Software Projects - 920-921	127,958	200,185	72,227	56%	The higher costs result from IT outsourcing work that had previously been handled internally. The work was transferred to third-party vendors (Managed Service Providers costs \$70M). This led to reduced labor expenses (headcount reductions) to streamline the organization. In turn, this resulted in lower costs in the Client Services & Planning, Enterprise Information Management & Architecture, Infrastructure Technology Services & Technology Delivery & Maintenance 2015 GRC activities.
Client Services & Planning - 920-921	19,993	9642	(10,351)	(52%)	The lower costs resulted from the IT transformation that occurred after the 2015 GRC. The transformation involved organizational changes to centralize IT work and resources, reductions in labor expenses (headcount reductions) to eliminate duplicative resources, and additional labor

## Other 2017 O&M

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Local Public Affairs - 920-921	14,460	6,491	(7,969)	(55%)	<p>reductions as work previously performed internally were shifted to a third-party vendor (Managed Service Provider).</p> <p>The variance is due to focusing on core public affairs work, improving business processes, adopting new technology/new tools and reorganizing our team to be more efficient.</p>

## Other 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Capitalized Software - CCI	16,532	0	(16,532)	(100%)	Cybersecurity Legislation in this Program Group (\$6M) - program cancelled; Enterprise Platform Core Refresh was authorized here but was not started until 2017 (\$5M).
Capitalized Software- Arch. Engrg	26,029	4,543	(21,486)	(83%)	Mobile Radio System Replacement (\$14M) - project was winding down in 2016 after majority of spend occurred in 2013 - 2015; Grid Control Center operational bus (\$3M) - project cancelled; SAP Business Warehouse HANA (high-performance analytic appliance) Enterprise Data Warehouse (\$2M) - project cancelled.
Information Technology - Service Management	9,311	21,121	11,811	127%	Transmission and Distribution (TDBU) Refresh for Ruggedized Laptops was \$8M over authorized. The overrun in ruggedized laptops occurred as a result of the Consolidated Mobile Solutions program in T&D. This \$60M+ program consolidated several T&D field systems for distribution, substation, and transmission. The program allows mobile access for field employees to receive, process, complete and return data on assignments while in the field. At the time of implementation, we learned our standard computing devices could not provide the performance, computing power, or durability necessary for field employees. As a result, additional ruggedized laptops were deployed to successfully remediate these challenges. PC's - CDE (Common Desktop Environment) were \$3M over authorized. The increase occurred because we had a large backlog of devices that were failing and unsupported. This ultimately led to server performance issues in a changing application environment. Under the direction of

## Other 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Capitalized Software – Project Management	120,307	93,377	(26,930)	(22%)	IT leadership, we increased refresh rate to remove aging and outmoded inventory.  SCE underspent its authorized levels for Operating Unit capitalized software. This was largely due to deferring Customer Data Warehouse project from its originally planned date. SCE found synergies in merging this investment with our efforts to migrate to HANA (high-performance analytic appliance) Hadoop technology in the future.
Capitalized Software – Risk Management	27,396	20,392	(7,004)	(26%)	There was a delay in 2016 Capital spend due to unavailability of resources to start some of the work we originally anticipated. We have since found the necessary resources, and shifted spend to 2017.

## Other 2016 Capital

Activity	2016 Authorized (\$000)	2016 Recorded (\$000)	2016 Variance (\$000)	2016 Variance (%)	Variance Explanation
Bldg. Renovation – Operational services	18,500	53,124	34,623	187%	<p>Overrun variance in 2016 was mainly driven by emergent projects which were not included in the GRC original ask. These projects became business necessities and received approvals through SCE capital governance process. The projects are:</p> <ul style="list-style-type: none"> <li>- General Office 2/General Office 3 IT Space Optimization \$16M</li> <li>- General Office 2 Cybersecurity \$8M</li> <li>- Emergency and security operations center for Irvine operation center Backup \$1M</li> <li>- Mira Loma Substation Street Widening \$2M</li> <li>- Fenwick Advanced Technology Lab Expansion \$4M</li> <li>- General Office 1 1st Floor Lobbies Remodel \$2M.</li> </ul>
New Asset CRE – Operational Services	38,528	7,546	(30,982)	(80%)	<p>Underrun variance in 2016 was mainly driven by:</p> <ul style="list-style-type: none"> <li>- Delaying Alhambra Master Plan for further development until 2019, \$10M.</li> <li>- Cancelling Metro East Parking Structure Project \$9M.</li> <li>- Cancelling General Office 5 food service project \$2M.</li> <li>- Delaying Alhambra service center related renovations to future years \$5M.</li> <li>- Changing design and scope of New Emergency Operations Center which resulted in underrun of \$2M.</li> <li>- Changing design and scope of Metro East Office Building which resulted in an underrun of \$2M.</li> </ul>

## Other 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Capitalized Software-Arch. Engrg	26,550	547	(26,003)	(98%)	Mobile Radio System Replacement (\$14M) - project was winding down in 2016 and had minimal spend in 2017. Majority of spend occurred in 2013 – 2015. Grid Control Center operational bus (\$3M) - project cancelled; SAP Business Warehouse HANA (high-performance analytic appliance) Enterprise Data Warehouse (\$2M) - project cancelled.
Capitalized Software-Project Management	122,713	105,752	(16,961)	(14%)	SCE underspent its authorized levels for Operating Unit capitalized software. This was largely due to deferring the Customer Data Warehouse project from its originally planned date. SCE found synergies in merging this investment with our efforts to migrate to HANA (high-performance analytic appliance) Hadoop technology in the future.
Capitalized Software-Risk Management	27,944	52,644	24,700	88%	There was a delay in 2016 Capital spend due to unavailability of resources to start some of the work originally slated for 2016. The necessary resources were brought on and costs in 2017 were higher than authorized due to shift of spend from 2016 to 2017. Perimeter Defense (\$12M), Grid Cybersecurity (\$11M) and Data protection (\$5M) were all over authorized.

## Other 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Information Technology -Service Management	9,497	18,391	8,895	94%	PC's - CDE (Common Desktop Environment) were \$6M over authorized. We had a large backlog of devices that were failing and unsupported. This ultimately led to server performance issues in a changing application environment. Under the direction of IT leadership, we increased refresh rate to remove aging inventory in our environment. Transmission and Distribution (TDBU) Refresh for Ruggedized Laptops was \$3M over authorized. The overrun in ruggedized laptops was a result of the Consolidated Mobile Solutions program in T&D. This \$60M+ program consolidated several T&D field systems for distribution, substation, and transmission. The program allows mobile access for field employees to receive, process, complete and return data on assignments while in the field. At the time of implementation, we learned that our standard computing devices could not provide the performance, computing power, or durability necessary for field employees. Accordingly, additional ruggedized laptops were deployed to successfully remediate these challenges.

## Other 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
Bldg Renovation—Operational Services	18,870	50,549	31,679	168%	<p>Overrun variance in 2017 was mainly driven by emergent projects that were not included when the GRC application showing was prepared in 2013. These projects became business necessities and received approvals through SCE’s capital governance process. The projects are:</p> <ul style="list-style-type: none"> <li>- General Office 2/General Office 3 IT Space Optimization \$3M</li> <li>- General Office 2 Cybersecurity \$3M</li> <li>- Fenwick Advanced Technology Lab Expansion \$3M</li> <li>- Passenger Electric Vehicle Workplace Chargers \$2M</li> <li>- Rio Hondo Substation Laydown \$1M</li> <li>- General Office 1 Workplace Upgrade \$8M</li> <li>- Alhambra Data Center Build-Out \$5M.</li> <li>- Irvine Operation Center upgrades overspend \$5M.</li> </ul>
Maintenance Asset Mgmt – Operational Services	19,687	45,959	26,272	133%	<p>Overrun variance in 2017 is mainly driven by substation capital maintenance. This work activity was part of T&amp;D prior to 2017 and was transitioned to Corporate Real Estate (CRE) in 2017. The 2015 CRE GRC showing did not include this request for capital maintenance; the work activity was requested in T&amp;D testimony.</p>
Energy Efficiency – Operational Services	2,461	14,415	11,954	486%	<p>Overrun variance in 2017 was mainly driven by seismic-related work that was not part of the authorized amount. This seismic-related work accounted for a \$12M variance compared to authorized. The actual energy efficiency 2017 recorded amount was \$2,375, which drives only 3% variance.</p>
New Asset CRE—Operational Services	39,299	372	(38,927)	(99%)	<p>Underrun variance in 2017 was mainly driven by:</p> <ul style="list-style-type: none"> <li>- Deferring Alhambra Master Plan until 2019 for further development-\$18M.</li> <li>- Cancelling Westminster Admin Building renovation-\$7M.</li> </ul>



## Other 2017 Capital

Activity	2017 Authorized (\$000)	2017 Recorded (\$000)	2017 Variance (\$000)	2017 Variance (%)	Variance Explanation
					<ul style="list-style-type: none"> <li>- Cancelling Alhambra Regional Operating Facility Secure Storage project-\$6M.</li> <li>- Delaying Alhambra service center-related renovations to future years-\$6M.</li> </ul>

**Appendix 2 to Attachment A**

**Variances for All O&M and Capital Activities, Regardless of Threshold**

**2016 – 2017 O&M**



er. Procurement costs associated with departmental responsibility for performing the necessary functions needed to provide safe, reliable and affordable delivery of power to customers. Activities include: Planning for procurement of conventional, renewable and cogeneration resources to meet system load; Procuring energy and capacity via contracts and from the market in accordance with resource plans to meet daily and long-term power needs in SCE's service territory; Selling surplus electricity, capacity, and renewable energy credits into the market and through contracts; administering contracts from conventional, cogeneration, renewable, and alternative resources; Scheduling SCE's generation and contracted resources with the California Independent System Operator (CAISO) to meet SCE's system needs; Settling all power procurement transactions; Aggregating, tracking and reporting meter data to regulators; Managing the development of business processes; Developing and advocating policy positions on matters related to energy policies to the extent they are considered at federal, state and local levels, and; Providing administrative services to Power Procurement and other limited areas within the Power Supply Operating Unit.	SCE-2, Vol. 4	SCE-05, Vol. 02	43,745	30,457	(13,288)	-30%	44,756	26,532	(18,224)	-41%	n	Y
mission Grid Engineering and Technology - Includes the cost of labor, materials used other expenses incurred to perform engineering studies, including facility studies, for transmission grid; load dispatching operations pertaining to the transmission of electricity, including costs incurred to perform transmission system studies; cellaneous costs incurred in managing major transmission projects and communications activities; management of grid interconnections; and purchases and maintenance of shop tools for Shop Services and Instrumentation Division. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 2	SCE-02, Vol. 03	18,840	20,476	1,636	9%	19,166	18,444	(722)	-4%	Y	Y
ability Standards and Compliance group.	SCE-3, Vol. 2	SCE-02, Vol. 13	2,816	1,276	(1,540)	-55%	2,880	(15)	(2,895)	-101%	Y	Y
mission Grid Engineering and Technology - Includes the cost of labor, materials used other expenses incurred to perform engineering studies, including facility studies, for transmission grid; load dispatching operations pertaining to the transmission of electricity, including costs incurred to perform transmission system studies; cellaneous costs incurred in managing major transmission projects and communications activities; management of grid interconnections; and purchases and maintenance of shop tools for Shop Services and Instrumentation Division. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 2	SCE-02, Vol. 11	3,704	1,822	(1,882)	-51%	3,777	1,499	(2,278)	-60%	Y	Y
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: execution of California Independent System Operator (CAISO) instructions regarding the operations of the SCE electrical system under CAISO operational control; develop and maintain switching procedures under CAISO purview; coordinate planned changes consistent with CAISO approval; and maintaining situation awareness. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 7	SCE-02, Vol. 06	9,611	9,877	266	3%	9,805	10,205	400	4%	Y	Y
station Inspection and Maintenance - Inspections and Maintenance Activities performed at SCE-Owned Generating Facilities - Includes the cost of labor, materials used expenses incurred in operating transmission substations and switching stations. Includes labor incurred for activities such as: supervising station operation; adjusting and calibrating station equipment for the purpose of checking its performance; doing 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.	SCE-3, Vol. 8	SCE-02, Vol. 06	1,356	967	(389)	-29%	1,370	810	(560)	-41%	Y	Y
Operations - Operating Transmission Stations - Includes the cost of labor, materials, expenses incurred in operating 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;	SCE-3, Vol. 7	SCE-03, Vol. 05	20,244	10,877	(9,367)	-46%	20,522	17,590	(2,932)	-14%	Y	Y



Transmission - Line, Structure, Road, and Right-of-Way Maintenance - Includes the costs of labor, materials, and expenses incurred in performing the following activities: reactive maintenance of poles, towers, conductors, and underground lines and structures; insulator washing; transmission roads and right-of-way maintenance; and transmission capital related expense. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 8	SCE-02, Vol. 07	31,327	21,764	(9,563)	-31%	31,630	27,168	(4,462)	-14%	Y	Y
Operations - Transmission and Substation Storm Expense - Includes the costs to repair and repair storm related damages and toxic waste disposal for transmission lines and facilities. Storm damage can be the result of severe weather conditions such as wind, lightning, and by natural disasters such as earthquakes and forest fires. The storm costs included in this account are: switching, locating and isolating trouble on the line, removal of debris from lines or equipment, and securing damaged sites until repairs have been completed. Costs for toxic waste disposal include cleaning up hazardous waste dumped on SCE's transmission property and disposal of oil from electrical equipment. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 7	SCE-02, Vol. 07	1,615	3,536	1,921	119%	1,628	2,960	1,332	82%	Y	Y
Transmission and Substation Toxic Waste Disposal - Includes payroll, automotive, and other expenses incurred in the inspection, sampling, testing, and cleaning of oil products polychlorinated biphenyl (PCB) contamination caused by leakage and/or spillage. Also includes the costs incurred to clean-up and dispose of hazardous or toxic waste for distribution equipment.	SCE-3, Vol. 9	SCE-02, Vol. 12	412	189	(223)	-54%	415	13	(402)	-97%	Y	n
The activity records costs for meter strategy and meter technology deployment. The primary activities of this group include: research of new metering technologies, performance of cost-benefit analysis, project management, and infrastructure maintenance planning. These activities are driven by the increased role of metering in demand response programs, the higher rate of obsolescence of new metering products, and the increased complexity of new metering products. In addition, this activity consists of costs associated with Customer Service Safety & Environmental Health which oversees direction, management and maintenance of infrastructure and resources critical to effectiveness of CS's safety program. The Field Operations and Support & Training organizations record expenses associated with the following program elements to this activity: safety compliance; program development, communication, and accountability; hazard assessment and correction; accident investigations; training and instruction; and record keeping.	SCE-4, Vol. 2	SCE-03, Vol. 01	7,078	5,062	(2,016)	-28%	7,256	3,017	(4,239)	-58%	n	n
Distribution Grid Technology - Includes the cost of labor, materials used, and expenses incurred to identify, evaluate, test, and integrate advanced technologies that advance smart grid at the distribution level. Includes the costs for services provided by other operating units. The operating units providing services include, but are not limited to Information Technology, Operations Services, and Transportation Services department. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 2	SCE-02, Vol. 11	19,676	16,329	(3,347)	-17%	19,872	12,193	(7,679)	-39%	Y	Y
Facility Maintenance - Corporate Real Estate - Includes the labor, material used and expenses incurred by SCE's Operations Support for maintaining distribution buildings and funds.	SCE-3, Vol. 10	SCE-07, Vol. 03	11,218	10,275	(943)	-8%	11,220	9,825	(1,395)	-12%	Y	Y
Inspection and Maintenance - Inspections and Maintenance Activities performed at SCE-Owned Generating Facilities - Includes the cost of labor, materials used and expenses incurred in operating distribution substations. Labor activities include: supervising station operation; inspecting, testing and calibrating station equipment for purpose of checking its performance; and keeping station log and records and preparing reports on station operation. 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.	SCE-3, Vol. 8	SCE-02, Vol. 06	178	134	(44)	-25%	181	107	(74)	-41%	Y	Y
Operations - Supervising and Operating Distribution Stations - Includes the cost of labor, materials, and expenses incurred in operating distribution 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-3, Vol. 7	SCE-03, Vol. 05	28,525	28,265	(260)	-1%	28,044	25,402	(2,642)	-9%	Y	Y

ty and Environmental Programs - Includes the labor, materials used, and costs incurred for distribution environmental and safety programs. Environmental programs include: hazardous waste management, hazardous materials business emergency plans, storm water management, and chemical management. Safety programs include: safety environmental performance and analysis reporting, safety and environmental communications, facility safety and environmental assessments, and corporate compliance program implementation and audit/inspection support. Includes related expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 9	SCE-02, Vol. 12	2,490	2,149	(341)	-14%	2,535	5,035	2,500	99%	n	y
ection of Distribution Overhead and Underground Lines and Equipment - Includes cost of labor, materials used and expenses incurred in performing annual grid patrols, routine pole inspections, and overhead and underground detail inspections. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 6	SCE-02, Vol. 04	23,027	18,840	(4,187)	-18%	23,392	11,002	(12,390)	-53%	y	y
tribution Pole Assessments - Includes the cost of labor, materials used and expenses incurred in performing pole loading assessments on distribution poles, including pole loading calculations.	SCE-3, Vol 6	SCE-02, Vol. 09	24,154	27,430	3,276	14%	24,552	27,831	3,279	13%	y	y
Operations - Troublemens Patrol, Locate, and Repair Activities - Includes the costs incurred by troublemen when patrolling distribution lines to locate trouble at the request of the system operators or as the result of a customer reported problem. Activities include: patrolling, switching, locating the cause of the reported problem, and inspecting equipment installed on customer's property, and repairs to the system to correct reported problem. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 7	SCE-02, Vol. 05	35,630	32,194	(3,436)	-10%	36,313	35,440	(873)	-2%	y	y
Operations - Street Light Operations and Maintenance - Includes the cost of labor, materials used and expenses incurred in: the operation of street lighting and signal arm equipment. Labor costs include activities for: supervising street lighting and electrical systems operation; replacing lamps and incidental cleaning of glassware and fixtures; routine patrolling for lamp outages, extraneous nuisances or encroachments; and line and equipment; maintenance of street lighting and signal system assets; and twilight mapping. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 7	SCE-02, Vol. 05	9,419	5,984	(3,435)	-36%	9,534	11,122	1,588	17%	y	n
ign Construction & Maintenance - Set, Remove, and Relocate Meters - Includes the cost of labor, materials used and expenses incurred to set new meters, remove meters, change the location of meters at a customer's premise. Labor includes the costs for connecting and reconnecting; removing and reinstalling; sealing and unsealing meters; other metering equipment in connection with initiating or terminating services. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; supply and tool expense; and meter seals.	SCE-3, Vol. 5	SCE-02, Vol. 05	12,276	10,022	(2,254)	-18%	12,447	9,173	(3,274)	-26%	n	n
activity consists of costs associated with the labor and non-labor expense for the metering; inspection; testing of meters and associated metering equipment; and for the maintenance of meters and ancillary metering equipment.	SCE-4, Vol. 2	SCE-03, Vol. 01	18,108	14,650	(3,458)	-19%	18,505	15,254	(3,251)	-18%	n	n
ign Construction & Maintenance - Construction Support Activities - Includes the cost of labor, materials used and expenses incurred by Transmission and Distribution Design and Maintenance organization for stand-by time; distribution line rents; utility inventory Mapping; Field Accounting; Joint Pole organization; civil inspections; warranty inspections; switching; and supervision of field service representative in Rural Districts.	SCE-3, Vol. 5	SCE-02, Vol. 05	7,537	5,876	(1,661)	-22%	7,637	6,384	(1,253)	-16%	y	y
Operations - Miscellaneous Operating Expenses - Includes the costs to create and maintain circuit maps and to perform outage data management for reporting to the Commission pursuant to D.96-09.045. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.	SCE-3, Vol. 7	SCE-02, Vol. 05	2,946	1,874	(1,072)	-36%	3,003	1,660	(1,343)	-45%	y	y



<p>Distribution Grid Engineering and Technology - Includes the costs incurred by Shop Services and Instrumentation Division for daily operations of facilities, management of and workforces, facility maintenance, and internal services; engineering, planning, development of long-term system upgrades and modifications necessary to meet demand; and work on customer installations in inspecting premises and in rendering services to customers. Types of work performed on customer installations include radio, vision and similar interference work including erection of new aerials on customers' premises and patrolling of lines, testing of lightning arresters, inspection of pole hardware, etc., and examination on or off premises of customers' appliances, wiring, or equipment to locate cause of interference. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.</p>	SCE-3, Vol. 2	SCE-02, Vol. 03	4,110	2,539	(1,571)	-38%	4,176	2,147	(2,029)	-49%	Y
<p>Planning and Safety Delivery and Seat-Time for Distribution Personnel - Includes the cost of labor, materials used, and expenses incurred to develop and deliver training and programs to distribution personnel. The costs for maintaining distribution buildings and grounds and employee recognition are included in this account. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.</p>	SCE-3, Vol. 9	SCE-02, Vol. 12	42,079	44,293	2,214	5%	42,835	45,957	3,122	7%	Y
<p>Modernization and Support Activities - Includes the cost of labor, materials used, expenses for activities to support grid modernization and other related programs. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; and division overhead.</p>	SCE-3, Vol. 2	SCE-02, Vol. 10	4,724	4,168	(556)	-12%	4,735	2,228	(2,507)	-53%	Y
<p>Solidated Mobile Solutions Benefits - This activity forecasts benefits associated with solidated Mobile Solutions (CMS).</p>											
<p>Planned Maintenance of Distribution Overhead and Underground Lines and Equipment; Station Management; and Apparatus Inspection and Maintenance - Includes the cost of labor, materials used and expenses incurred in the maintenance of overhead and underground distribution line facilities, distribution transformers, vegetation management, graffiti removal, apparatus inspections, and apparatus maintenance. Includes costs for activities such as: readjusting and changing position of guys or braces; painting and straightening poles, cross-arms, braces, pins, racks, brackets, and other fixtures; tree-trimming; brush clearance; repairing pole supported platform; maintaining pole signs, stencils, tags, etc.; repairing line oil circuit breakers and associated relays and control wiring; repairing grounds; cleaning ducts, manholes, and meter connections; moving or changing position of conduit or pipe; repairing circuit breakers, switches, cutouts, network protectors, and associated relays and control wiring. Includes costs for the inspection and maintenance of overhead and underground distribution apparatus are included in this account. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; division overhead; and supply and tool expense.</p>	SCE-3, Vol. 2 SCE-3, Vol. 6		137,547	162,077	24,530	18%	138,334	176,081	37,747	27%	Y
<p>Productivity Benefits - This activity forecasts benefits associated with Wires Investment Strategy Efficiency Review (WISER) and Consolidated Mobile Solutions (CMS).</p>	SCE-3, Vol. 5		(2,884)	-	2,884	-100%	(2,876)	-	2,876	-100%	Y
<p>Sign Construction &amp; Maintenance - Distribution Line Rents - Includes rents of property others used, occupied, or operated in connection with the distribution system. Includes payments to the United States and others for the use and occupancy of public lands and reservations for distribution line rights of way. This activity package has zero transfers; all costs have been transferred to 588.281.</p>	SCE-3, Vol. 5	SCE-02, Vol. 13	-	-	-	-	-	-	-	n	n
<p>Distribution Operational Excellence (OPEX) Savings - This account includes savings resulting from the consolidation of finance functions attributable to distribution expenses.</p>	SCE-3, Vol. 10		(3,379)	-	3,379	-100%	(3,408)	-	3,408	-100%	Y
<p>Station Construction &amp; Maintenance - Supervision of Distribution Substation Maintenance - Includes the cost of labor and expenses incurred in the general supervision and direction of maintenance of distribution substation. This activity package has zero dollars; all costs have been transferred to 592.150.</p>	SCE-3, Vol. 8	SCE-02, Vol. 06	14,867	13,462	(1,405)	-9%	15,128	14,358	(770)	-5%	Y
<p>Includes the cost of labor, materials used and expenses incurred to make repairs to distribution poles as part of the Pole Loading Program or related to capital work in support of the Pole Loading Program. Examples include: installing or removing additional clamps or strain insulators on guys; readjusting and changing position of guys (braces); relocating crossarms, racks, brackets, and other fixtures on poles; and supporting fixtures and conductors and transferring them to new pole during poles</p>	SCE-3, Vol. 6	SCE-03, Vol. 09	10,587	2,743	(7,745)	60%	10,744	2,404	(7,250)	57%	Y

Operations - Distribution Storm - Includes the costs to patrol for and repair storm-damaged 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, removal of debris from lines or equipment, and securing damaged sites until repairs have been completed. Costs for toxic waste disposal include cleaning up hazardous waste dumped on SCE's distribution property and disposal of oil from electrical equipment. Includes related costs such as: transportation expenses; meals, traveling, lodging, and incidental expenses; union overhead; and supply and tool expense.	SCE-3, Vol. 7	SCE-02, Vol. 05	13,242	10,766	(2,476)	-19%	13,346	11,930	(1,416)	-11%	Y	Y
Distribution Toxic Waste Disposal - Includes payroll, automotive, and other expenses incurred in the inspection, sampling, testing, and cleaning of oil products or polychlorinated biphenyl (PCB) contamination caused by leakage and/or spillage. Also includes the costs incurred to clean-up and dispose of hazardous or toxic waste for emission/substation equipment.	SCE-3, Vol. 9	SCE-02, Vol. 12	5,365	3,929	(1,436)	-27%	5,364	2,590	(2,774)	-52%	Y	Y
Actuals - Includes the costs incurred for period-ending accruals of recognized expenses. There is no forecast expense for this activity.	SCE-3, Vol. 10	SCE-02, Vol. 13	-	-	-	-	-	-	-	-	n	n
Activity is used by the Application Services Division to record costs associated with application development and maintenance of Customer Services applications. Costs in activity have been transferred to FERC Accounts 920-921.	SCE-4, Vol. 2	SCE-03, Vol. 01	23,754	30,701	6,947	29%	24,352	25,422	1,070	4%	n	n
Activity consists of costs associated with maintaining ongoing business relationships with Energy Service Providers (ESPs) who serve customers in our service territory. This ESP business relationship is primarily achieved through an account management approach whereby a Customer Choice Services (CCS) representative is assigned to each CCS. CCS is also responsible for developing and providing information to ESPs on how to do business with SCE, facilitating the enrollment process, completing necessary forms and agreements, establishing ESP contracts and accounts in the SCE system, and providing ongoing administration and contract management. Finally, the CCS activity is ongoing, daily operational assistance to ESPs on the relocations, assignments and switches allowed under the DA tariffs, and implements the on-going regulatory provisions related to ESPs and DA service. This activity package has zero dollars; all costs are transferred to other activities.	SCE-4, Vol. 2	SCE-03, Vol. 01	-	279	279	100%	-	319	319	100%	n	n
Activity consists of costs associated with the Customer Contact Center to provide our customers with 24-hour telephone access to a SCE representative covering a full array of telephone services and the costs for telephone billings and related expenses.	SCE-4, Vol. 2	SCE-03, Vol. 01	52,410	42,248	(10,162)	-19%	53,609	47,340	(6,269)	-12%	n	Y
IP Properties - Includes salaries and miscellaneous expenses incurred for management, supervision and staff engaged in real estate planning, appraisal, negotiation and sales activities.	SCE-3, Vol. 2	SCE-02, Vol. 13	7,408	3,442	(3,966)	-54%	7,582	8,499	917	12%	n	Y
IP or non-labor to support efforts related to integrating information technologies in SCE organizational units	SCE-5, Vol. 1	SCE-04, Vol. 01	19,509	16,833	(2,676)	-14%	19,993	9,642	(10,351)	-52%	Y	Y
Labor and non-labor expenses associated with Corporate Communications are recorded in FERC Account 920/921. Corporate Communications activities help customers and the public stay safe around electrical infrastructure and to understand company and regulatory actions that affect them directly. Corporate Communications also oversees internal communications to ensure that employees have the information they need to work effectively and with purpose.	SCE-9, Vol. 1	SCE-08, Vol. 02	8,051	6,993	(1,058)	-13%	8,238	6,426	(1,812)	-22%	Y	n
Account 923 includes non-labor expenses for the outside vendors contracted by Corporate Communications, such as public relations agencies specializing in ethnic media for communication measurement services. This account also includes outside services associated with the Communications Quality Assurance program managed by the department.	SCE-9, Vol. 1	SCE-08, Vol. 02	911	4,132	3,221	354%	922	3,201	2,279	247%	Y	n
Corporate Communications records expenses to FERC Account 930 for: (1) the publication of the SEC-required annual report; (2) the design, production, and implementation of public safety education programs, including the development of related communications materials produced in multiple languages; and (3) costs for the Public Safety Around Electricity public education advertising campaign.	SCE-9, Vol. 1	SCE-08, Vol. 02	7,896	4,855	(3,041)	-39%	7,986	5,718	(2,268)	-28%	Y	n
Corporate Real Estate's costs in Accounts 920/921 include salaries and miscellaneous expenses incurred for management, supervision and clerical staff, general architectural, engineering, facility planning and design, fire protection services, and long-range training support. Also included are expenses incurred for janitorial and landscape care at facilities throughout our 50,000 square mile service territory, and costs for operational activities and removal activities for the operations and services of	SCE-9, Vol. 1	SCE-08, Vol. 02	7,896	4,855	(3,041)	-39%	7,986	5,718	(2,268)	-28%	Y	n

<p>udes salaries and expenses of personnel engaged in Business Resiliency activities. Business Resiliency's two fundamental responsibilities have been supporting the continuity of critical internal processes under abnormal conditions, and helping manage emergency planning and response – to avoid or minimize service disruptions, harm to individuals, and damage to assets. Several watershed events in recent years, however, have taught us that we need to fundamentally alter the mission of our organization by opening our focus and broadening our scope to mitigate the impact of extreme emergencies on the company and the communities we serve.</p>	SCE-7, Vol. 4	SCE-07, Vol. 01	4,397	6,071	1,674	38%	4,573	6,664	2,091	46%	Y	Y
<p>operate Security is to support the reliability of the electric system by physically protecting SCE's workforce, customers, facilities, and infrastructure from threats, disruptions, intrusions, theft, and property damage. Our team of security professionals is committed to assessing and responding to the security needs of SCE's workforce and customers, working cooperatively to design and provide innovative, economical, and progressive security solutions for safe and secure work spaces and customer service areas, preventing unauthorized access to critical grid assets, control systems, equipment information, and complying with regulatory mandates.</p>	SCE-7, Vol. 4	SCE-07, Vol. 05	43,417	27,053	(16,364)	-38%	43,912	25,801	(18,111)	-41%	Y	Y
<p>Coordinate Security costs recorded to FERC account 923 are for background investigations performed by external service providers.</p>	SCE-7, Vol. 4	SCE-07, Vol. 05	162	353	191	118%	164	175	11	7%	Y	Y
<p>activity is used to record costs associated with maintenance activities provided by Powersecurity &amp; Compliance. Costs recording in FERC Accounts 920-921 are SCE labor, office supplies, travel, training, and software licenses.</p>	SCE-5, Vol. 1	SCE-04, Vol. 01	18,950	15,939	(3,011)	-16%	19,294	16,916	(2,378)	-12%	n	Y
<p>regulated utility, SCE is subject to oversight by various state, federal, and local agencies including the California Public Utilities Commission, the California Energy Commission (CEC), and the Federal Energy Regulatory Commission (FERC). The Regulatory Affairs department has the primary responsibility for managing and directing all of SCE's regulatory activities before these agencies. These activities include serving as the company's interface with the CPUC and FERC in developing and supporting tariffs that cover the Company's costs of providing utility service. The department is also responsible for maintaining liaisons and coordinating Company contacts with these regulatory agencies, as well as managing Company responses to their investigations and findings related to broad issues of regulatory policy. Regulatory Affairs contributes to Company's regulatory compliance activities. Additionally, Regulatory Affairs manages missions and contacts with many other regulatory agencies in its efforts to obtain regulatory, legislative, and environmental approvals. These agencies include the CAISO, California Environmental Protection Agency, plus many other governmental and non-governmental organizations. This group also manages Exempt Projects, Permits to Construct (PTC), and Certificate of Public Convenience and Necessity (CPCN) applications for new transmission or sub-transmission facilities.</p>	SCE-9, Vol. 1	SCE-08, Vol. 02	3,257	1,543	(1,714)	-53%	3,325	1,215	(2,110)	-63%	n	n
<p>to support network rents</p>	SCE-5, Vol. 1	SCE-04, Vol. 01	4,420	3,243	(1,177)	-27%	4,470	2,176	(2,294)	-51%	n	Y
<p>or costs for contracted workers in support of Server Management/Hardware management.</p>	SCE-5, Vol. 1	SCE-04, Vol. 01	125,751	181,634	55,883	44%	127,958	200,185	72,227	56%	n	Y
<p>C Account 920/921 captures salaries and expenses of the Local Public Affairs (LPA) department that provides communication with customers, local governments and communities in support of electrical safety education, storm and emergency response coordination with local governments, transmission system expansion and relocation, distribution system upgrades, operational issues impacting communities, and community education on state mandated policy initiatives. LPA conducts community outreach via local governments, non-profit organizations, neighborhood groups, government associations, chambers of commerce and various community based organizations. LPA supports the utility's operations by working directly with 206 franchisees and the governments of 186 cities, 15 counties, 15 Native American tribes (13 federally recognized and two state recognized tribes), and 14 municipal utilities. LPA manages the community outreach related to siting and licensing of all new non-exempt transmission substation projects that require a Certificate of Public Convenience and Necessity (CPCN) or a Permit to Construct (PTC) from the CPUC and federal licenses for transmission projects that cross federal land. LPA supports Transmission &amp; Distribution in the construction of distribution projects including the installation of new, replacement, and underground substations and distribution facilities.</p>	SCE-9, Vol. 1	SCE-08, Vol. 02	14,412	6,459	(7,953)	-54%	14,460	6,401	(8,059)	-55%	n	Y

**2016 – 2017 Capital**















**Appendix 3 to Attachment A**

**Programs from Appendix 1 Canceled or Deferred**

**List of projects that were canceled or deferred within each program**  
(Nominal \$000)

Program	Project Name	2015 GRC Operating Date	Safety/Reliability/Maintenance	Current Operating Date	Total Authorized
<b><u>GENERATION</u></b>					
<b>Exhibit No.: SCE-02, Volume 7, Part 2 - Hydro Capital</b>					
<b>HYDRO EAST CORE BASE</b>					
DAMS AND WTRWYS-HE	Rush Meadows Dam- Seismic Upgrade	12/1/2017	Yes	Beyond 2020	12,700
<b>HYDRO NO CORE BASE</b>					
MISC ELECTRICAL-HN	HL Dam 1 power & controls	6/1/2017	Yes	Beyond 2020	12,100
SPECIFIC NHD	Mammoth Pool - Replace HB Valve	12/1/2017	Yes	Beyond 2020	28,253
<b><u>TRANSMISSION</u></b>					
<b>Exhibit No.: SCE-03, Vol. 03 - System Planning Capital Projects</b>					
<b>Load Growth Planning Projects (SCE-03, Vol. 03, Ch.I, Part F):</b>					
<b>Transmission Substation Plan (TSP) - A Bank Plan</b>					
TSP PROJECTS	Valley AB 500/115 kV Substation	3/1/2016	Yes	6/16/2017	31,065
TSP PROJECTS	Chino 220/66 kV Substation	6/1/2016	Yes	12/1/2019	44,988
TSP PROJECTS	La Fresa A 220/66 kV Substation	12/31/2014	Yes	12/1/2019	47,530
TSP PROJECTS	Saugus 220/66 kV Substation	6/1/2017	Yes	3/30/2018	68,695
TSP PROJECTS	Vestal 220/66 kV Substation	6/1/2015	Yes	8/31/2017	18,593
TSP PROJECTS	Alberhill 500/115 kV Substation	6/1/2017	Yes	Beyond 2020	386,203
<b>Transmission Substation Plan (TSP) - Subtransmission Lines Plan</b>					
TSP PROJECTS	Santa Barbara County Reliability Project (SBCRP)	6/1/2016	Yes	12/1/2019	67,328
TSP PROJECTS	Moorpark-Newbury 66 kV	6/1/2016	Yes	7/31/2017	23,058
TSP PROJECTS	Valley-Ivyglen 115 kV (VIG)	12/31/2015	Yes	Beyond 2020	111,821
<b>Transmission System Generation Interconnection</b>					
TRANS PROJ RENEWABLE	Whirlwind #2AA and #3AA Bank Upgrades	12/1/2016	Yes	4/28/2017	88,150
TRANS PROJ RENEWABLE	Jasper 220 kV Substation	10/1/2015	Yes	Beyond 2020	57,005
<b><u>DISTRIBUTION</u></b>					
<b>Exhibit No.: SCE-03, Vol. 03 - System Planning Capital Projects</b>					
<b>Distribution Substation Plan (DSP) - New Substations</b>					
DSP SUBSTATIONS	Downs 115/12 kV Substation	6/1/2014	Yes	7/26/2016	32,256
DSP SUBSTATIONS	Falcon Ridge 66/12 kV Substation	12/31/2016	Yes	2/22/2019	83,554
DSP SUBSTATIONS	Safari 33/12 kV Substation	6/1/2016	Yes	12/1/2019	46,787
DSP SUBSTATIONS	Banducci 66/12 kV Substation	6/1/2016	Yes	12/1/2018	42,105
DSP SUBSTATIONS	Yokohl 66/12 kV Substation	6/1/2016	Yes	Cancelled	88,034
DSP SUBSTATIONS	Circle City 66/12 kV Substation	6/1/2016	Yes	Beyond 2020	25,198
<b>Added Facilities Projects (SCE-03, Vol. 03, Ch.I, Part I):</b>					
A/F CUST FUNDED	Natural 66/12 kV Substation	12/1/2015	Yes	6/23/2016	55,307
<b><u>OTHER</u></b>					
<b>Exhibit No.: SCE-03, Vol. 02 - Engineering and Grid Technology</b>					
<b>Operational Process Engineering</b>					
BPTI	Comprehensive Geographical Information System (CGIS) Phase 2	12/1/2014	Yes	12/17/2015	10,547
<b>Exhibit No.: SCE-03, Vol. 02 - Engineering and Grid Technology</b>					
<b>SOLUTION DELIVERY</b>					
PROJECT MANAGEMENT	Phasor Advanced Analytics	1/1/2016	Yes	Cancelled	13,100
<b>Exhibit No.: SCE-05, Vol. 1 - Information Technology</b>					
<b>ENTERPRISE TECH</b>					
ARCH ENGRG	Mobile Radio System Replacement	12/1/2015	Yes	1/1/2017	57,900
<b>Exhibit No.: SCE-05, Vol. 2, Part 1 - Capitalized Software</b>					
<b>SOLUTION DELIVERY</b>					
PROJECT MANAGEMENT	SAM - CSBU Customer Data Warehouse	12/1/2016	Yes	Cancelled	28,000
PROJECT MANAGEMENT	GIS Improvements	9/1/2017	Yes	12/1/2019	11,000

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

Order Instituting Investigation Into the  
November 2018 Submission of Southern  
California Edison Risk Assessment and  
Mitigation Phase.

I.18-11-006

**CERTIFICATE OF SERVICE**

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of **SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) INTERIM RISK SPENDING ACCOUNTABILITY REPORT FOR 2016 AND 2017** on all parties identified on the attached service list(s) for I.18-11-006, and A.16-09-001. Service was effected by one or more means indicated below:

- Transmitting the copies via e-mail to all parties who have provided an e-mail address.
- Placing the copies in sealed envelopes and causing such envelopes to be delivered by US Mail to the offices of the ALJ(s) or other addresses(s).

**ALJ Eric Wildgrube  
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505 Van Ness Avenue  
San Francisco, CA 94102**

Executed **March 14, 2019**, at Rosemead, California.

*/s/ Alejandra Arzola*

---

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