

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

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| Application of San Diego Gas & Electric Company (U902M) for Authority, Among Other Things to Update its Electric and Gas Revenue Requirement and Base Rates Effective on January 1, 2019. | Application 17-10-007 (Filed October 6, 2017) |
| And Related Matter. | Application 17-10-008 (Filed October 6, 2017) (Consolidated) |
| (NOT CONSOLIDATED) | |
| Application of San Diego Gas & Electric Company (U 902 M) to Submit Its 2021 Risk Assessment and Mitigation Phase Report. | Application 21-05-011 (Filed May 17, 2021) |
| Application of Southern California Gas Company (U 904 G) to Submit Its 2021 Risk Assessment and Mitigation Phase Report. | Application 21-05-014 (Filed May 17, 2021) (Consolidated) |
| (NOT CONSOLIDATED) | |
| Application of Southern California Gas Company (U 902 M) for Authority, Among Other Things, to Update its Gas Revenue Requirement and Base Rates Effective on January 1, 2024. | Application 22-05-015 (Filed May 16, 2022) |
| And Related Matter. | Application 22-05-016 (Filed May 16, 2022) (Consolidated) |

**RISK SPENDING ACCOUNTABILITY REPORT OF
SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M) AND
SOUTHERN CALIFORNIA GAS COMPANY (U 904 G) FOR 2021**

LAURA M. EARL
8330 Century Park Court, CP32D
San Diego, CA 92123
Telephone: (858) 654-1541
Facsimile: (619) 699-5027
Email: learl@sdge.com

ELLIOTT S. HENRY
555 West Fifth Street, Suite 1400
Los Angeles, CA 90013
Telephone: (213) 244-8234
Facsimile: (213) 629-9620
Email: ehenry@socalgas.com

Counsel for San Diego Gas & Electric Company and Southern California Gas Company

July 29, 2022

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| (NOT CONSOLIDATED) | |
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| And Related Matter. | Application 22-05-016 (Filed May 16, 2022) (Consolidated) |

**RISK SPENDING ACCOUNTABILITY REPORT OF
SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M) AND
SOUTHERN CALIFORNIA GAS COMPANY (U 904 G) FOR 2021**

In compliance with Decision (“D.”) 19-04-020, Safety Model Assessment Proceeding Phase Two Decision Adopting Risk Spending Accountability Report Requirements and Safety Performance Metrics For Investor-Owned Utilities, San Diego Gas & Electric Company (“SDG&E”) and Southern California Gas Company (“SoCalGas”) submit this 2021 Risk Spending Accountability Report (“2021 RSAR”). The 2021 RSAR covers spend authorized in the Test Year 2019 General Rate Case cycle for activities that address safety, reliability, and/or maintenance, consistent with California Public Utilities Code Section 591(a). This report is timely filed and served in accordance with D.19-04-020, the CPUC’s Energy Division’s

April 11, 2022 “Annual Risk Spending Accountability Report Energy Division 2022 Review Schedule and Extension Notification” (“ED Notification.”),¹ and Section 591(b).

SoCalGas and SDG&E hereby file and serve their 2021 RSAR in accordance with D.19-04-020, which directs that utilities:

shall file each annual RSAR in the utility’s current or most recent Risk Assessment Mitigation Phase (RAMP) and General Rate Case (GRC) proceeding at the time of filing as well as the RAMP/GRC that approved the risk spending, [and] shall serve each RSAR to the California Public Advocate’s Office and the Office of Safety Advocates²

Energy Division’s Report on SoCalGas and SDG&E’s 2020 RSARs similarly directs that:

[SoCalGas and SDG&E] should file and serve their 2021 RSAR in the most recent [...] proceeding in which costs are imputed, (A.17-10-007/A.17-10-008), and the 2021 Risk Assessment and Mitigation Phase (RAMP, A.21-05-011 and A.21-05-014) with copies provided to the CPUC’s Safety Policy Division, Safety and Enforcement Division, and the Public Advocates Office. Sempra should also provide the 2021 RSAR to the ED Tariff Unit by emailing the report to **edtariffunit@cpuc.ca.gov**.³

Party comments should be submitted in accordance with D.19-04-020 (which directs, for example, that “[p]arties should clearly identify the RSAR on which they are submitting comments”),⁴ and the schedule set forth in the ED Notification, which includes deadlines for parties to file comments for each utility’s RSAR.⁵

¹ The ED Notification is available at https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/risk-spending-accountability-reports/rsar-22-04-11-review_schedule-signed_ver2.pdf. As explained in the ED Notification at 1, SoCalGas and SDG&E’s due date for RSAR submittal was extended to July 29, 2022, by the Executive Director’s grant of extension request (“SoCal Gas and SDG&E requested an extension on the December 12, 2021 and the Executive Director granted the extension in a letter dated January 21, 2022.”).

² D.19-04-020 at 64, Ordering Paragraph 8.

³ December 3, 2021, letter regarding “San Diego Gas & Electric Company and Southern California Gas Company 2020 Risk Spending Accountability Report Review” at 3, (citing D.19-04-020, p. 47) (emphasis added), *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/risk-spending-accountability-reports/sempra_2020_rsar_ed-review-signed.pdf.

⁴ *See*, D.19-04-020 at 47.

⁵ ED Notification at 1.

Respectfully submitted,

By: /s/ Laura M. Earl
Laura M. Earl

Counsel for:
SAN DIEGO GAS & ELECTRIC COMPANY and
SOUTHERN CALIFORNIA GAS COMPANY
8330 Century Park Court, CP32D
San Diego, California 92123
Telephone: (858) 654-1541
Facsimile: (619) 699-5027
Email: LEarl@sdge.com

July 29, 2022



Southern California Gas Company and San Diego Gas & Electric Company
2021 Risk Spending Accountability Report

July 29, 2022

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1. INTRODUCTION

In compliance with Decision (D.) 19-04-020, Safety Model Assessment Proceeding Phase Two Decision Adopting Risk Spending Accountability Report Requirements and Safety Performance Metrics For Investor-Owned Utilities (S-MAP Phase 2 Decision), Southern California Gas Company (SoCalGas) and San Diego Gas & Electric Company (SDG&E) (collectively, the Utilities) timely submit this annual Risk Spending Accountability Report (RSAR) comparing 2021 imputed authorized spending to actual spending (2021 RSAR or Report).¹ This 2021 RSAR addresses Operations and Maintenance (O&M) expenses and capital investments authorized in D.19-09-051, the Decision Addressing the Test Year (TY) 2019 General Rate Cases (GRCs) of SoCalGas and SDG&E (2019 GRC Decision) for activities that address safety, reliability, and/or maintenance, consistent with California Public Utilities Code (P.U. Code) Section 591 and the S-MAP Phase 2 Decision.

This 2021 RSAR addresses the second attrition year of the 2019 GRC cycle. The Utilities filed their TY 2019 GRC Application (in October 2017) before the Commission adopted the S-MAP Phase 2 Decision RSAR requirements (in April 2019). Because of this timing, certain aspects of the information provided in the 2021 RSAR were not authorized in the 2019 GRC Decision in a manner consistent with the S-MAP Phase 2 Decision's requirements. Thus, the 2021 RSAR is a transitional report.

The 2021 RSAR is organized as follows:

- **Section 1 Introduction** – briefly introduces the Report.
 - **Section 1.A. Procedural Background** – describes previous events that led to this Report.
 - **Section 1.B. Overview of General Rate Cases and 2019 Cycle** – describes the basics of GRCs and the GRC cycle applicable for this Report.
- **Section 2 Presentation of 2021 Risk Spending Accountability Report** – provides foundational information to consider when reviewing this 2021 RSAR.

¹ In compliance with D.14-12-025 and the S-MAP Phase 2 Decision, this 2021 RSAR is being filed in and served on the service lists for Application (A.) 17-10-007/008 (cons.), the “applicable GRC proceeding in which funding for the risk mitigation activities and spending was authorized” (see D.14-12-025 at 46) and Investigation (I.) 19-11-010/-011 (cons.), the “most recent RAMP/GRC at the time of its filing” (S-MAP Phase 2 Decision at 45).

- **Section 2.A. Summary of Reporting Requirements** – sets forth the requirements subject to this Report adopted in the S-MAP Phase 2 Decision.
- **Section 2.B. Key Parameters and Considerations Underlying the Report** – discusses assumptions that inform review of this Report.
- **Section 2.C. Identification of Safety, Reliability, and Maintenance-Related Programs** – describes the activities in scope of this Report.
- **Section 2.D. Derivation of Imputed Authorized Dollars** – explains how the authorized dollars from the 2019 GRC Decision were derived for attrition year 2021 for this Report.
- **Section 3 Overview of 2021 Risk Spending Accountability Report Results** – provides the high-level results and a summary of the variance explanations of the Report.
- **Attachment A SDG&E** – presents tables providing authorized, actual, work units, variance explanations, program descriptions, and testimony references.
- **Attachment B SoCalGas** – presents tables providing authorized, actual, work units, variance explanations, program descriptions, and testimony references.

A. Procedural Background

On November 14, 2013, the California Public Utilities Commission (Commission) opened Rulemaking (R.) 13-11-006, *Order Instituting Rulemaking to Develop a Risk-Based Decision-Making Framework to Evaluate Safety and Reliability Improvements and Revise the Rate Case Plan for Energy Utilities* (the Risk OIR). The purpose of the Risk OIR was to incorporate a risk-based decision-making framework into the Rate Case Plan (RCP) for the energy utilities' GRCs, in which utilities request funding for safety-related and other activities. On December 4, 2014, the Commission adopted D.14-12-025 in the Risk OIR establishing, as part of its risk-informed decision-making framework, annual verification reports – one of which is the RSAR.² According to the Commission, the RSAR is intended to “compare the utility’s

² D.14-12-025 also established the Risk Mitigation Accountability Report to compare projected and actual risk mitigation benefits (*see* D.14-12-025 at 12 and 44). Another element of this Risk Mitigation Accountability Report is addressed in the Utilities' Safety Performance Metrics Report, which will be separately filed on or before March 31, 2021 pursuant to the S-MAP Phase 2 Decision.

GRC projected spending for approved risk mitigation projects to the actual spending on those projects, and to explain any discrepancies between the two.”³ These annual verification reports will “improve utility accountability of ratepayer money spent on risk mitigation.”⁴ To implement the verification reporting requirements, in D.16-06-054, the decision approving the TY 2016 GRCs of SoCalGas and SDG&E (2016 GRC Decision), the Commission ordered the Utilities to file interim RSARs for years 2014 through 2016 on a limited set of risk mitigation projects.⁵ These interim RSARs for years 2014-2016 were timely submitted by SoCalGas and SDG&E.

In September 2017, Senate Bill (SB) 549⁶ was signed into law, effective January 1, 2018. SB 549 added P.U. Code § 591, which requires “an electrical or gas corporation to annually notify the [public utilities] commission . . . of each time since that notification was last provided that capital or expense revenue authorized by the commission for maintenance, safety, or reliability was redirected by the electrical or gas corporation to other purposes.”⁷ Prior to the effective date of SB 549, RSARs had been limited to reporting on risk mitigation activities related to safety and/or reliability. SB 549 broadened the scope of reportable items to safety, reliability, and/or maintenance.⁸

To implement the requirements of SB 549 and standardize future RSARs, in 2018, the Commission further examined RSAR requirements in Phase 2 of the S-MAP. Energy Division issued a Proposal for Standardized Reporting and Outline (Staff Proposal) recommending revised reporting requirements.

In April 2019, the S-MAP Phase 2 Decision adopted RSAR requirements⁹ that, for SoCalGas and SDG&E, apply “starting with its 2019 RSAR filing (due March 31, 2021),”¹⁰ for

³ D.14-12-025 at 44.

⁴ D.14-12-025, Findings of Fact 27 at 52.

⁵ D.16-06-054, Ordering Paragraph (OP) 11 at 331-332, and at 39-41.

⁶ SB 549, Stats. 2017-2018, Ch. 284 (Cal. 2017).

⁷ P.U. Code § 591(a).

⁸ See D.19-04-020 at 9.

⁹ *Id.* Attachment 2.

¹⁰ *Id.* at 46.

spending authorized in the 2019 GRC Decision. A list of the requirements applied beginning in 2019 and applied for this 2021 RSAR are discussed in Section 2.A.

B. Overview of General Rate Cases and the 2019 Cycle

The Utilities file GRC applications with the Commission seeking a revenue requirement (comprising O&M and capital-related funding) to become effective on January 1 of the test year. The Utilities typically put forth these requests in direct (*i.e.*, not including overhead costs), base year dollars by forecasting values in workpapers, which are groups of organizational-based O&M cost centers and capital budget codes. These direct dollar forecasts also include various risk mitigation activities and projects that are proposed in testimony by witnesses. The forecasts are converted into a test year revenue requirement. After the submission and thorough review of the evidentiary record, the Commission authorizes a revenue requirement to recover the reasonable costs forecasted to be incurred in the test year, and a mechanism for adjusting the revenue requirement annually during the post-test years.¹¹ A revenue requirement is the amount of money the Utilities are allowed to recover from their customers through rates.¹² The Commission authorizations may or may not be the same as originally presented by the Utilities in their respective GRC applications.

SoCalGas and SDG&E filed their TY 2019 GRC Applications on October 6, 2017.¹³ Among other things, the Utilities' Applications included requests related to mitigating their key safety risks and integrated the results from their RAMP filed on November 30, 2016 (2016 RAMP). The Utilities included testimony supporting their 2019 GRC Applications that provided a roadmap of the RAMP risks to the corresponding witness area,¹⁴ a summary of GRC witnesses

¹¹ The years between a utility's GRC test years are referred to as post-test years or attrition years. The revenue requirements for the attrition years are generally determined through a post-test year mechanism. Ultimately, the GRC decision will prescribe the mechanism for how to adjust the test year revenue requirement for inflation and other factors that may affect costs, such as additional capital projects between test years.

¹² The Utilities' GRCs direct, base year dollar forecasts are converted into a test year revenue requirement using a ratemaking model, the Results of Operation (RO) model. The process by which the RO model converts the direct, base year dollars into a test year revenue requirement includes the escalation of costs (converting base year dollars into test year nominal dollars), intercompany billings between the Utilities, applying overheads (such as employee benefits) to capital projects, and converting the capital forecasts into capital-related costs (depreciation, taxes, and return).

¹³ Exhibit references herein refer to utility exhibit numbers as listed on their respective websites.

¹⁴ A.17-10-007/-008 (cons.), Ex. SCG-02-R/SDG&E-02-R, Chapter 1 (Day) at Appendix A.1.

sponsoring RAMP costs,¹⁵ testimony that explained the RAMP to GRC integration process,¹⁶ and explicit identification of RAMP-related activities and costs in the testimony of the witness sponsoring those forecasts.

The 2019 GRC Decision was approved by the Commission on September 26, 2019. The 2019 GRC Decision states:

[t]he adopted revenue requirement and PTY increases for SDG&E will provide the necessary funds to allow it to operate its electric and natural gas transmission and distribution system safely and reliably and to fulfill customer service functions at reasonable rates.

For SoCalGas, the adopted revenue requirement and PTY increases will provide the necessary funds to allow it to operate its natural gas transmission, gas distribution, and gas storage systems safely and reliably and to fulfill customer service functions at reasonable rates.¹⁷

While SoCalGas and SDG&E endeavored to “isolate the RAMP activity, to allow the reader to see the dollar request in GRC workpapers,”¹⁸ the 2019 GRC Decision stated that the “RAMP portion in Applicants’ requests is not presented as separate and distinct from the non-RAMP portions” and “in many instances our decision is not based on risk mitigation but rather on standard GRC methods.”¹⁹ Work unit levels were also not presented for a given level of proposed funding. Based on this, the 2019 GRC Decision does not necessarily authorize RAMP activity costs or work unit levels by line-item details. Thus, in this 2021 RSAR, some imputing of authorized RAMP activity costs and work unit levels was needed, or activity descriptions were provided in lieu of work units, when authorized levels were not available.

Furthermore, on January 16, 2020, the CPUC adopted a decision in the Risk OIR, D.20-01-002 (RCP Decision), extending the GRC cycle for each large California investor-owned utility (IOU) from three to four years. To facilitate the transition from a three- to four-year GRC cycle for the IOUs, the RCP Decision “direct[s] SoCalGas and SDG&E to request two additional

¹⁵ *Id.* Ex. SCG-02-R/SDG&E-02-R, Chapter 1 (Day) at Appendix A.2.

¹⁶ *See Id.*, Ex. SCG-02-R/SDG&E-02-R, Chapter 3 (York).

¹⁷ D.19-09-051 at 3-4.

¹⁸ A.17-10-007/-008 (cons.), Ex. SCG-02-R/SDG&E-02-R, Chapter 3 (York) at JKY-6.

¹⁹ D.19-09-051 at 22.

attrition years (2022 and 2023) in their petition for modification of D.19-09-051.”²⁰ Thus, the RCP Decision revised the length of SoCalGas’s and SDG&E’s 2019 GRC cycle from 2019-2021 to 2019-2023. The petition for modification (PFM) of the 2019 GRC Decision to set attrition year increases for 2022 and 2023 was filed by SoCalGas and SDG&E on April 9, 2020. On May 6, 2021, the Commission adopted D.21-05-003, which approved with modifications SoCalGas’s and SDG&E’s PFM of D.19-09-051.

To illustrate the GRC cycle relevant for this 2021 RSAR, the diagram below shows the Utilities’ current TY 2019 GRC cycle for the TY 2019 GRC Application and reflecting the RCP Decision.

Diagram 1: TY 2019 GRC Cycle of SoCalGas and SDG&E

| 2019 GRC Proceeding | |
|----------------------------|-------------|
| Base Year | 2016 |
| Forecast Year | 2017 |
| Forecast Year | 2018 |
| Test Year | 2019 |
| Post-Test Year | 2020 |
| Post-Test Year | 2021 |
| Post-Test Year | 2022 |
| Post-Test Year | 2023 |

2. PRESENTATION OF 2021 RISK SPENDING ACCOUNTABILITY REPORT

This section provides foundational information, such as the underlying assumptions and key parameters, to consider when reviewing this 2021 RSAR.

A. Summary of Reporting Requirements

The reporting requirements applicable to this 2021 RSAR were adopted in the S-MAP Phase 2 Decision.²¹ The requirements and a roadmap to where each requirement has been met in this Report are summarized in the table below.

²⁰ D.20-01-002 at 52.

²¹ D.19-04-020, Attachment 2.

| RSAR Reporting Requirements | Roadmap of Compliance in 2021 RSAR with Reporting Requirements |
|---|--|
| Develop a list of programs (<i>i.e.</i> , one list as an appendix to the report) that include activities relating to safety, reliability or maintenance authorized or in effect during the record period. The list should be separated into risk mitigation programs identified in the RAMP and other programs related to safety, reliability or maintenance presented in the GRC application. | The methodology used to determine the programs in scope is described in Section 2.C below. |
| Report the authorized and actual spending for each program in the record period and the difference in dollars (actual less authorized) and in percent (actual less authorized, divided by authorized). | Attachments A and B have tables dedicated to providing this information. |
| Explain the difference between authorized and actual spending for the GRC programs chosen using the selection criteria specific to SoCalGas and SDG&E. | Where applicable, a variance explanation has been provided in Attachments A and B. |
| Provide a description of the program and references to testimony. | Attachments A and B have tables dedicated to providing this information. |
| Report on authorized activities and actual safety activities performed, for each program, using, where available “work units” as the unit of reporting. | Where available, work units have been provided in Attachments A and B. |
| Group the GRC programs by the general lines of business as presented in the GRC in which the funding request for the record period was authorized. | Attachments A and B provide the required information by line of business and GRC witness area. |
| Divide programs into expense and capital programs. | Attachments A and B have different tables for O&M and Capital. |
| Include a separate section in the report, if a balancing account or memorandum account tracks any portion of a program, to discuss the cost recovery of the actual expenditures for the program. | Balanced programs have a dedicated section in Attachments A and B. |
| Include the total company authorized spending for the record period categorized into expense and capital programs. | Company totals are presented separately for capital and expense in Section 3. |

| RSAR Reporting Requirements | Roadmap of Compliance in 2021 RSAR with Reporting Requirements |
|---|--|
| In contrast, with cancelled or deferred projects, which result in a negative variance of 100%, utilities are required to report expanded programming or “emergent projects,” which result in a positive variance of 100%. | See the Appendices to Attachments A and B for a listing of projects that were cancelled, deferred or emergent. |

The S-MAP Phase 2 Decision also adopted a definition of “program” for purposes of the RSAR for SoCalGas and SDG&E²² as follows:

SDG&E and SoCalGas: Expensed programs are defined at the workpaper level, which may contain one or more cost centers. Capital programs are defined at the budget code level, which may aggregate workpaper groups that share the same budget code.

In addition, the S-MAP Phase 2 Decision adopted selection criteria for providing variance explanations based on SoCalGas and SDG&E for spending and work units as follows:

Work Units: Deviation between authorized work units and performed work units is equal to or greater than 20%.

Spending:

SoCalGas

- GRC expensed items: A variance of at least \$5 million, or a percentage variance of at least 20% subject to a minimum variance of \$1 million.
- Capital programs: A variance of at least \$10 million, or a percentage variance of at least 20% subject to a minimum variance of \$2 million.

SDG&E – Electric Operations and Other Reportable Areas

- GRC expensed items: A variance of at least \$5 million, or a percentage variance of at least 20% subject to a minimum variance of \$2.5 million.
- Capital programs: A variance of at least \$10 million, or a percentage variance of at least 20% subject to a minimum variance of \$5 million.

SDG&E – Gas Operations

²² D.19-04-020, Attachment 2 at 3.

- GRC expensed items: A variance of at least \$2.5 million, or a percentage variance of at least 20% subject to a minimum variance of \$0.5 million.
- Capital programs: A variance of at least \$5 million, or a percentage variance of at least 20% subject to a minimum variance of \$1 million.

B. Key Parameters and Considerations Underlying the Report

SoCalGas and SDG&E present this 2021 RSAR by company, further divided into the line of business (*e.g.*, electric, gas, other), by program (*i.e.*, O&M workpaper and Capital budget code as described in Section 2.A above), and by RAMP and non-RAMP activities. For the activities, if work units are available, they are provided. In the event the selection criteria for spending and/or work units are met,²³ an explanation is provided along with the description of the program and citations to the associated 2019 GRC testimony and the 2024 GRC testimony, where applicable. Information regarding balanced programs is presented in a separate section.

The Utilities are presenting this 2021 RSAR in direct dollars. Direct dollars are the input into the revenue requirement calculations, but not the revenue requirement itself. For those programs recorded to balancing accounts, the 2021 RSAR presents such programs in both direct dollars and on a revenue requirement basis, in accordance with the S-MAP Phase 2 Decision.²⁴

i. Units

As discussed in Section 1, the Utilities’ respective 2019 GRC applications were filed before the S-MAP Phase 2 Decision RSAR requirements were adopted. The requirement in the S-MAP Phase 2 Decision to include work units where available in the 2021 RSAR is problematic for the 2019 GRC cycle (2019-2023) given that, in most cases, no work units were presented in the Utilities’ 2019 GRC showing and were therefore not specifically defined or authorized in the Commission’s decision. Accordingly, reporting authorized and actual work units, when work units were not explicitly defined or authorized presents a challenge. For the purpose of this report, the Utilities provide actual units and impute authorized units, where

²³ In response to SDG&E and SoCalGas’ request for clarification of applying the variance selection criteria, Energy Division provided this guidance in an email dated February 14, 2021, “We have reviewed pages 41-43 of D.19-04-020 and believe that you should apply the selection criteria and explanations for all GRC programs as well as the risk mitigation programs, where work unit data is available. *That is to say that you will only need to provide greater details for the unitized risk mitigation programs.*”

²⁴ D.19-04-020, OP 10 at 65-66.

available. In other instances, the Utilities provide explanations of the activities within a program performed during 2021.²⁵ These items are addressed by the Utilities as applicable in Attachments A and B.

ii. RAMP

The 2021 RSAR utilizes the 2016 RAMP (I.16-10-015/016) that was integrated into the 2019 GRC. Since that time, a more quantitative risk methodology and framework for RAMP and GRC filings was approved by the Commission in D.18-12-014. Therefore, this 2021 RSAR does not yet reflect the methodology that was adopted in D.18-12-014.

For purposes of integrating the 2016 RAMP into the GRC, a variety of approaches were required, depending upon the activity. For example, the Utilities presented mappings of their 2016 RAMP risks to GRC witness areas²⁶ and a summary of RAMP costs by GRC witness area.²⁷

However, for other areas, certain RAMP activities spanned multiple witness areas, meaning the costs for a particular RAMP activity were defended by and authorized in multiple GRC witness areas (*e.g.*, records management training). This could occur because multiple departments perform this RAMP activity. Rather than showing such widespread activities in every applicable witness area, “for presentation purposes in this GRC”²⁸ the RAMP activity was presented in a single workpaper or mapped to a “limited number of GRC witnesses.”²⁹ In these instances, the GRC presentation does not match where the costs are recorded and thus creates variances between the RAMP imputed authorized and actuals.

As discussed above in Section 1.B, the 2019 GRC Decision did not explicitly authorize RAMP activities differently from non-RAMP activities. Instead, the 2019 GRC Decision assessed and authorized funding for the Utilities in many instances based on “standard GRC methods, such as the quality of the forecast, counterarguments by intervenors, and whether a

²⁵ The S-MAP Phase 2 Decision requires the Utilities to work with Energy Division staff to identify programs where work unit information is not available (D.19-04-020 at 39). The Utilities conferred with Energy Division staff in February 2021 regarding the manner to identify programs, as provided in Attachments A and B.

²⁶ A.17-10-007/-008 (cons.), Ex. SCG-02-R/SDG&E-02-R, Chapter 1 (Day) at Appendix A.1.

²⁷ *Id.*, at Appendix A.2.

²⁸ A.17-10-007/-008 (cons.), Ex. SCG-02-R/SDG&E-02-, Chapter 3 (York) at JKY-3.

²⁹ *Id.*, at JKY-4.

given showing met the burden of proof.”³⁰ This therefore made it difficult to identify or impute authorized amounts for some RAMP mitigation activities, especially at a granular activity level. Similarly, the Utilities do not necessarily track costs by RAMP mitigation activity or risk. Rather, the Utilities record costs to O&M cost centers and to various capital budget codes, aligned with their GRC presentations. Accordingly, assumptions were needed to impute actuals at the RAMP mitigation activity level. The fact that such assumptions were required also supports the Utilities providing RAMP in this 2021 RSAR at a higher level, by RAMP risk rather than by individual RAMP activities.

Based on the foregoing, the 2021 RSAR reflects a transitional approach for presenting the above-noted Commission directives. The Utilities will continue to work with Energy Division staff and the S-MAP technical working group (as needed) regarding additional details for future reports.

iii. Implementation Timing of the Projects and Programs Funded by the TY 2019 GRC Decision

As discussed in Section 1.B above, the Utilities’ test year was 2019, and rates approved in the 2019 GRC Decision were expected to become effective beginning on January 1, 2019. The 2019 GRC Decision was approved by the Commission on September 26, 2019, approximately three quarters into the 2019 financial year. This led to uncertainty in the test year regarding the funding that would be available to implement planned projects and programs.

Since the outcome of the 2019 GRC Decision, the Utilities have been working to execute on the programs discussed during the 2019 GRC proceeding. While the progress of some programs may be impacted by a variety of factors, including the COVID-19 pandemic, the Utilities are managing such programs over the 2019 GRC cycle. The results of this report reflect these circumstances for the 2021 financial period.

iv. Reprioritization

The Utilities recognize that they may need to re-prioritize funding to address critical matters that arise during the GRC cycle. Such differences in authorized programs are shown in this report and will likewise appear in future RSARs. The Commission has explicitly recognized that “new programs or projects may come up, others may be cancelled, and there may be

³⁰ D.19-09-051 at 22.

reprioritization. *This process is expected and is necessary* for the utility to manage its operations in a safe and reliable manner.”³¹ It is for these reasons that “utilit[ies] [are] allowed the flexibility to reprioritize the authorized funds in order to ensure safe and reliable operations.”³² Reprioritizing spending also allows utilities to “[r]espond to immediate or short-term crises outside of the RAMP and GRC process,”³³ in accordance with Commission directives. As the Commission has stated: “RAMP and GRCs...are not designed to addresses immediate needs; the utilities have responsibility for addressing safety regardless of the GRC cycle.”³⁴ Accordingly, SoCalGas and SDG&E are permitted to re-prioritize spending as needed. This is captured in variances, which may be attributable to a variety of causes. In summary, the forecasted test-year and attrition year funding methodologies permit utilities to reprioritize funds throughout GRC cycles. Many variances included herein are driven, at least in part, by the pressures created by this aspect of safely and reliably managing a utility in California.

v. COVID-19 Pandemic and Changing Macro Trends Impact on 2021 Report

The COVID-19 pandemic has materially impacted communities, supply chains and markets around the world, including in California. SDG&E and SoCalGas continued to conduct business in 2021 with substantial modifications to employee travel, employee work location, and virtualization or cancellation of certain business activities, among other modifications, because of the pandemic. Certain governmental entities and governing bodies that affect SDG&E and SoCalGas businesses have taken precautionary, preemptive and responsive actions to address the effects of the COVID-19 pandemic. As essential service providers, and throughout the COVID-19 pandemic, SDG&E and SoCalGas have continued to provide safe and reliable service, albeit

³¹ D.11-05-018 at 27 (emphasis added).

³² Energy Division, *Safety-Related Spending Accountability Report for Southern California Edison* (May 2017) (Safety Report) at 10, available at http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Safety/SCESafety-RelatedSpending.pdf; see also Resolution E-4464 (May 10, 2012) at 7 (“Under 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.”).

³³ D.18-04-016 at 6, citing n.7 (D.16-08-018 at 152).

³⁴ *Id.*

significantly differently than expected and originally forecasted in the 2019 GRC. This is discussed where applicable in the variance explanations that can be found throughout the 2021 RSAR in Attachments A and B.

COVID-19 impacted SDG&E's and SoCalGas's customer-oriented work, creating additional cost pressures in some instances, and it delayed certain programs. The levels of work performed during 2021 were, in some cases, significantly different than authorized in the 2019 GRC. For the Utilities (and in particular for SoCalGas, where more customer-oriented activities require in-home service), activities such as in-home work orders for Customer Service Field were below historic trends and forecast. Additional activity categories were impacted by regulatory and other governmental mandates that either ceased or drastically slowed activities, such as overdue bill collection moratoriums, and construction permitting and inspection delays. Furthermore, growing global and domestic supply chain issues, as well as variability in the availability of labor resources in 2021, presented the Utilities with challenges in executing programs requiring additional labor and non-labor resources. In spite of these impacts, SDG&E and SoCalGas were largely able to implement many of their projected incremental projects and programs, including reducing or eliminating delays described in the 2019 RSAR. Incremental costs associated with addressing COVID-19 that are not included in the imputed authorized dollars are not included within this report and are being separately tracked through the Catastrophic Events Memorandum Account, which will be offset by specific and identifiable savings that may be realized due to the impacts of COVID-19.

C. Identification of Safety, Reliability, and Maintenance-Related Programs

In accordance with the S-MAP Phase 2 Decision, this 2021 RSAR includes a listing of all programs³⁵ authorized or in effect during 2021 that were associated with RAMP,³⁶ justified on the basis of safety and/or reliability, and programs associated with a maintenance³⁷ activity.

³⁵ Programs are defined as workpaper categories for expense items (*e.g.*, 1ED011.000 – Electric Regional Operations) and as budget codes for capital expenditures (*e.g.*, 13247 FiRM – Phases 1 & 2). *See* D.19-04-020, Attachment 2 at 3.

³⁶ Categories include but are not limited to: (1) Infrastructure Integrity, Physical Security and Environmental, (2) Cybersecurity and Customer Data Privacy, (3) Wildfires, (4) System Reliability, and (5) Public & Employee Safety, Disaster Recovery. *Id.* at 2, Section III.

³⁷ *Id.* at 2, Section IV. These are activities associated with expensed and capitalized work related to Federal Energy Regulatory Commission Accounts 510-515, 528-532, 541-545, 551-554, 568-574, 576, 590-598, 830-837, 843, 861-869, 885-895, 932 and 935.

Therefore, in-scope workpapers for SDG&E include electric distribution, electric generation, electric and fuel procurement, gas distribution, gas transmission, gas engineering, gas system integrity, customer services, information technology including cybersecurity, support services, administrative and general, and SDG&E's balanced programs including the Gas Distribution Integrity Management Program (DIMP), Gas Transmission Integrity Management Program (TIMP), Tree Trimming, electric distribution overhead pools, and SDG&E's Wildfire Mitigation Plan Memorandum Account (WMPMA). The variance explanations for these workpapers are attached hereto as Attachment A.

In this 2021 RSAR, SDG&E presents its wildfire mitigation-related programs differently from the 2019 GRC Decision. Subsequent to SDG&E filing its 2019 GRC Application on October 6, 2017, SB 901 was enacted in 2018, requiring SDG&E to submit an annual wildfire mitigation plan (WMP) to provide comprehensive information on SDG&E's efforts to mitigate wildfire risk.³⁸ Pursuant to SB 901, on February 6, 2019, SDG&E submitted its first WMP (2019 WMP),³⁹ which the Commission subsequently approved in D.19-05-039. Following approval of the 2019 WMP, SDG&E filed an advice letter to establish memorandum accounts to record costs associated with implementing the WMP.⁴⁰

Since its first WMP submission in 2019, SDG&E has continued to submit WMP filings in accordance with directives set forth by the Wildfire Safety Division. In those WMP filings, SDG&E is required to provide a "description of the preventive strategies and programs to be adopted by the electrical corporation to minimize the risk of its electrical lines and equipment causing catastrophic wildfire, including consideration of dynamic climate change risks."⁴¹ Some of the programs and strategies in SDG&E's WMPs (2019, 2020, 2021 and 2022) were also forecasted in the 2019 GRC. As SDG&E explained in their WMP submissions, "Many (but not

³⁸ The initial requirement to submit annual wildfire mitigation plans was set forth in SB 901, P. U. Code § 8386(b). This P. U. Code section was subsequently amended by Assembly Bill (AB) 1054.

³⁹ R.18-10-007, San Diego Gas & Electric Company's Wildfire Mitigation Plan (February 6, 2019). The 2019 WMP is available at <https://www.sdge.com/sites/default/files/regulatory/R.18-10-007%20SDG%26E%20Wildfire%20Mitigation%20Plan.pdf>.

⁴⁰ SDG&E Advice Letter 3454-E/2817-G (filed October 31, 2019, effective May 30, 2019). SDG&E also established the Fire Risk Mitigation Memorandum Account (FRMMA) via Advice Letter 3333-E (effective January 16, 2019) in compliance with the applicable law at that time to track costs incurred for fire risk mitigation that are not otherwise covered in revenue requirements.

⁴¹ P. U. Code § 8386(c)(3), as amended by AB 1054.

all) of the programs and activities described in this Plan have been included in and will be funded through SDG&E's GRC rates.... There may be programs in the Plans for which SDG&E has revised its assumptions and cost forecasts compared to the 2019 GRC."⁴² Therefore, refinements, continuations, and/or enhancements to certain wildfire mitigation programs were reflected in the WMP submissions. As an example, the Pole Risk Mitigation and Engineering (PRiME) program was presented in the 2019 GRC as a program associated with the Electric Infrastructure Integrity risk. However, in implementing PRiME, SDG&E is focusing on the poles in its High Fire Threat District first and thus categorizing it as related to the risk of Wildfire. Accordingly, in this 2021 RSAR, programs presented in the 2019 WMP are shown as such and are categorized as Wildfire consistent with the WMP; however, due to timing, not all those WMP programs were included as RAMP in the 2019 GRC. Further, SDG&E includes in this 2021 RSAR the wildfire-related programs in the Electric Distribution section herein consistent with how the programs were authorized in the 2019 GRC Decision. Subsequent to the GRC authorization, wildfire-related activities are subject to memorandum account treatment pursuant to statute and therefore, SDG&E is also including the balances of the WMPMA and disposition thereof in the Balanced section of this 2021 RSAR.

Similarly, in-scope workpapers for this 2021 RSAR for SoCalGas include gas distribution, gas transmission, gas engineering, gas system integrity, gas major projects, pipeline safety enhancement program (PSEP), aboveground storage, underground storage, gas procurement, customer services, information technology including cybersecurity, support services, administrative and general, and SoCalGas' balanced programs including DIMP, TIMP, Gas Storage Integrity Management Program (SIMP), and Research, Development and Demonstration (RD&D). The variance explanations for these workpapers are attached hereto as Attachment B.

⁴² *Id.*, at 83.

D. Derivation of Authorized Dollars

| | 2021 Imputed Authorized Direct O&M⁴³ | 2021 Imputed Authorized Direct Capital | 2021 Authorized Total Rev Req⁴⁴ |
|------------------|--|---|---|
| SDG&E | \$1,051,499 | \$812,283 | \$2,219,251 |

| | 2021 Imputed Authorized Total Direct O&M⁴⁵ | 2021 Imputed Authorized Total Direct Capital⁴⁶ | 2021 Authorized Total Rev Req⁴⁷ |
|-----------------|--|--|---|
| SoCalGas | \$1,633,620 | \$1,180,073 | \$3,130,157 |

For the majority of the workpaper categories covered in Attachments A and B of this report, the “authorized” amounts are imputed authorized funding values for those workpapers that are fully or partially requested to address safety, reliability, and/or maintenance risks.⁴⁸ The O&M and capital expenditures in the 2019 RSAR were specifically authorized in the TY 2019 GRC. The dollars presented by the witnesses in testimony and workpapers were stated in base year 2016 dollars; however, for purposes of the 2019 report, the Utilities presented the information in direct nominal dollars using the 2019 GRC decision authorized escalation factors. In this 2021 RSAR, the Utilities imputed authorized figures at the workpaper level, since this level of detail was neither specifically required, presented, or adopted in the 2019 GRC. This

⁴³ Excludes officer compensation per D.19-09-051, OP 11 and 12 at 778-779. Reflects reductions of Application for Rehearing per D.20-07-038, Rate Reform Cost Recovery per Resolution (R.) E-5069/ Advice Letter 3352-E, and the Petition for Modification per D.21-05-003.

⁴⁴ Attrition Year 2021 revenue requirement authorized in D. 19-09-051 is adjusted to exclude officer compensation per OP 11 and 12, at 778-779, Application for Rehearing per D.20-07-038, Rate Reform Cost Recovery per Resolution (R.) E-5069 / Advice Letter 3352-E, and the Petition for Modification per D.21-05-003.

⁴⁵ Excludes officer compensation per D.19-09-051, OP 11 and 12, at 778-779. Reflects reductions of Application for Rehearing per D. 20-07-038 and the Petition for Modification per D.21-05-003.

⁴⁶ Includes PSEP projects adopted in the Post-Test Year model in D.19-09-051.

⁴⁷ Attrition Year 2021 revenue requirement authorized in D.19-09-051 is adjusted to exclude officer compensation per OP 11 and 12, at 778-779, Cost of Capital per D.19-12-056, Application for Rehearing per D.20-07-038, and the Petition for Modification of D.21-05-003.

⁴⁸ The Commission-approved final GRC decisions do not always provide authorized figures by project or activity, which may be needed for accountability reporting.

differs from the 2019 RSAR process because 2021 is an attrition or post-test year and not the test year. The adopted post-test year (PTY) ratemaking mechanism in the 2019 GRC Decision adjusts the authorized revenue requirement in the attrition years by applying separate attrition mechanisms for O&M expenses and capital-related costs. To derive the 2021 imputed authorized O&M expenses, 2019 adopted expenses, which were presented in base year 2016 dollars, were escalated to 2019 dollars based on the adopted labor and non-labor escalation rates.⁴⁹ The 2020 authorized O&M attrition factors are then applied to this expense level to derive the 2020 imputed authorized O&M and then the authorized 2021 attrition factors were again applied to the 2020 imputed authorized O&M to derive the 2021 imputed authorized O&M.

In the 2019 GRC, specific capital project forecasts were approved for assets forecasted to be placed in-service in years 2017-2019 to establish the TY rate base and the capital-related revenue requirement (*i.e.*, depreciation, tax, and return) for 2019. The 2019 GRC Decision adopted an escalated seven-year average of capital additions to calculate the capital-related revenue requirement for the post-test years, including 2021. PTY capital expenditures are not forecasted at a project-specific level in the adopted PTY model except for SoCalGas's PSEP projects. For the purpose of this Report, the Utilities imputed 2021 authorized capital expenditures by taking a seven-year average of the capital spending in base year dollars for the years 2013 through 2019 (2013-2016 recorded, 2017-2019 adopted values) which were then escalated to 2019 dollars. These values were first escalated using the adopted 2020 capital attrition factors to impute the authorized 2020 direct capital expenditures, then the adopted 2021 capital attrition factors were again applied to the 2020 imputed authorized direct capital expenditure to derive the 2021 imputed authorized direct capital expenditures at the workpaper level of detail. SoCalGas's PSEP program is the only program that was specifically forecasted at the project level in the PTY model.

For the balanced programs, this report presents O&M and capital in revenue requirement terms (in addition to reporting these programs on a direct dollar basis), because the programs are tracked on a revenue requirement basis, as required by the annual advice letter filings.

⁴⁹ The Utilities presented the O&M expenses in direct nominal dollars (*i.e.*, 2021 authorized is in 2021 dollars). The authorized escalation factors used to calculate the direct nominal dollars were approved in D.19-09-051 and discussed on pages 670 – 671.

Reviewing balanced programs in these terms, rather than in nominal direct dollars, reflects more accurately how the Utilities manage these programs and track costs. The Utilities manage balanced programs considering the authorized revenue requirement for the entire GRC cycle and not within an individual spending year.

In compliance with Ordering Paragraph 5 of D.16-08-003, SoCalGas for the first time, incorporated PSEP project forecasts into the TY 2019 GRC. In the 2019 GRC Application, SoCalGas presented detailed O&M and capital estimates to complete proposed PSEP pressure test, replacement and valve project work. In direct testimony, SoCalGas PSEP witness Rick Phillips described that 2019 O&M cost forecasts were normalized and not reflective of actual 2019 projected spend.

Because 2019 will be a transition year as PSEP is incorporated into the GRC process, forecasted costs for 2019 do not reflect the level of forecasted spend in the post-test years. Therefore, the PSEP TY 2019 O&M forecast has been normalized to reflect the forecasted total level of O&M expenditures over the 2019 – 2021 GRC period.⁵⁰

SoCalGas anticipated that actual O&M expenses would significantly differ from the normalized forecast and much of the 2021 PSEP O&M variance reflects the normalization methodology.

3. OVERVIEW OF 2021 RISK SPENDING ACCOUNTABILITY REPORT RESULTS

A. Summary of Report Variances by Company⁵¹

Reportable Totals for SDG&E

| | 2021 Actuals | 2021 Imputed Authorized | \$ Variance | % Variance |
|-------------------------------|------------------|-------------------------|----------------|------------|
| SDG&E Direct Capital | 1,218,592 | 673,784 | 544,807 | 81% |
| SDG&E Direct O&M | 665,881 | 557,729 | 108,152 | 19% |
| SDG&E Direct Total | 1,884,473 | 1,231,513 | 652,959 | 53% |

⁵⁰ A.17-10-007/-008 (cons.), Ex. SCG-15-R (Philips) at RDP-A-21.

⁵¹ The costs reported in these totals do not reflect PSEP Phase 1 costs. On June 12, 2014, in D.14-06-007, the Commission approved PSEP Phase 1 (addressing pipe in more populated areas and the Valve Enhancement Plan). The Commission approved PSEP Phase 1 with no authorized costs, subject to after-the-fact reasonableness review, along with authorization to establish balancing accounts to facilitate the recovery of costs for implementing Phase 1. For costs incurred prior to the effective date of D.14-06-007, the decision instructed SoCalGas and SDG&E to file an application to recover costs tracked in the memorandum accounts for PSEP expenses and completed PSEP capital projects.

Reportable Totals for SoCalGas

| | 2021 Actuals | 2021 Imputed Authorized | \$ Variance | % Variance |
|------------------------------|------------------|-------------------------|----------------|------------|
| SoCalGas Direct Capital | 1,605,343 | 1,106,755 | 498,589 | 45% |
| SoCalGas Direct O&M | 1,017,050 | 1,001,825 | 15,226 | 2% |
| SoCalGas Direct Total | 2,622,394 | 2,108,579 | 513,815 | 24% |

B. Summary of RAMP Variances by Company

i. SDG&E O&M RAMP Variances by GRC Witness Area

| GRC Witness Area | SDG&E Exhibit Number | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|-------------------------------------|----------------------|-------------------|------------------------------|------------------|-----------------|
| Accounting and Finance | SDG&E-31 | 125 | 563 | (438) | -78% |
| Corporate Center - Gen Admin | SDG&E-26 | 1,466 | 2,802 | (1,336) | -48% |
| CS – Field | SDG&E-17 | 6,154 | 5,541 | 613 | 11% |
| CS - Information & Technologies | SDG&E-19 | 4,859 | 7,496 | (2,637) | -35% |
| CS - Office Operations | SDG&E-18 | 1,122 | 1,073 | 49 | 5% |
| Cybersecurity | SDG&E-25 | 12,799 | 8,643 | 4,156 | 48% |
| Electric Distribution | SDG&E-15 | 213,562 | 106,477 | 107,085 | 101% |
| Electric Generation & SONGS | SDG&E-16 | 16 | 46 | (30) | -65% |
| Gas Distribution | SDG&E-04 | 23,142 | 17,778 | 5,364 | 30% |
| Gas System Integrity | SDG&E-05 | 0 | 1,520 | (1,520) | -100% |
| Gas Transmission | SDG&E-06 | 1,617 | 221 | 1,396 | 632% |
| Human Resources | SDG&E-30 | 3,529 | 4,136 | (608) | -15% |
| Real Estate & Facilities | SDG&E-22 | 3,031 | 4,012 | (981) | -24% |
| TIMP & DIMP | SDG&E-11 | 10,934 | 12,367 | (1,432) | -12% |
| Total SDG&E RAMP O&M | | 282,357 | 172,674 | 109,683 | 64% |

ii. SDG&E O&M RAMP Variances by RAMP Chapter

| RAMP Chapter | RAMP Risk Description | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|-------------------------------------|--|-------------------|------------------------------|------------------|-----------------|
| SDG&E-01 | Wildfires Caused by SDG&E Equipment | 67,809 | 41,999 | 25,810 | 61% |
| SDG&E-02 | Catastrophic Damage Involving Third Party Dig-Ins | 7,112 | 4,760 | 2,351 | 49% |
| SDG&E-03 | Employee, Contractor, and Public Safety | 66,675 | 53,452 | 13,223 | 25% |
| SDG&E-04 | Distributed Energy Resources – Safety and Operational Concerns | 48 | 84 | (36) | -43% |
| SDG&E-06 | Fail to Black Start | 16 | 46 | (30) | -65% |
| SDG&E-07 | Cybersecurity | 12,799 | 8,643 | 4,156 | 48% |
| SDG&E-08 | Aviation Incident | 456 | 463 | (7) | -1% |
| SDG&E-09 | Workplace Violence | 4,389 | 5,369 | (980) | -18% |
| SDG&E-10 | Catastrophic Damage Involving High-Pressure Gas Pipeline Failure | 10,299 | 5,834 | 4,466 | 77% |
| SDG&E-11 | Unmanned Aircraft System Incident | 177 | 183 | (6) | -3% |
| SDG&E-12 | Electric Infrastructure Integrity | 8,464 | 22,422 | (13,958) | -62% |
| SDG&E-13 | Records Management | 6,338 | 9,664 | (3,327) | -34% |
| SDG&E-14 | Climate Change Adaptation | 0 | 454 | (454) | -100% |
| SDG&E-16 | Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure | 12,073 | 16,829 | (4,756) | -28% |
| SDG&E-17 | Workforce Planning | 3,372 | 2,471 | 901 | 36% |
| New ⁵² | Emergent RAMP | 82,330 | 0 | 82,330 | 100% |
| Total SDG&E RAMP O&M | | 282,357 | 172,674 | 109,683 | 64% |

⁵² Emergent RAMP includes RAMP mitigation activities that were not identified in the TY 2019 GRC but have been newly identified as RAMP in the TY 2024 GRC.

iii. **SDG&E Capital RAMP Totals by GRC Witness Area**

| GRC Witness Area | SDG&E Exhibit Number | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|-------------------------------------|---------------------------------|--------------------------|-------------------------------------|-------------------------|------------------------|
| Cybersecurity | SDG&E-25 | 10,976 | 3,229 | 7,747 | 240% |
| Electric Distribution | SDG&E-14 | 442,422 | 228,585 | 213,837 | 94% |
| Electric Generation | SDG&E-16 | 34 | 325 | (291) | -89% |
| Facilities/Other | SDG&E-22 | 6,913 | 9,897 | (2,984) | -30% |
| Gas Distribution | SDG&E-04 | 72,448 | 30,665 | 41,783 | 136% |
| Gas Transmission | SDG&E-07 | 961 | 2,242 | (1,282) | -57% |
| Information Technology | SDG&E-24 | 100,050 | 26,202 | 73,848 | 282% |
| TIMP/DIMP | SDG&E-11 | 60,551 | 27,801 | 32,750 | 118% |
| Human Resources | SDG&E-31 | 3,428 | 0 | 3,428 | 100% |
| Total SDG&E RAMP Capital | | 697,783 | 328,946 | 368,837 | 112% |

iv. **SDG&E Capital RAMP Totals by RAMP Chapter**

| RAMP Chapter | RAMP Risk Description | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|-------------------------------------|--|--------------------------|-------------------------------------|-------------------------|------------------------|
| SDG&E-01 | Wildfires Caused by SDG&E Equipment | 189,368 | 92,414 | 96,954 | 105% |
| SDG&E-02 | Catastrophic Damage Involving Third Party Dig-Ins | 3 | 318 | (315) | -99% |
| SDG&E-03 | Employee, Contractor, and Public Safety | 15,101 | 13,245 | 1,856 | 14% |
| SDG&E-04 | Distributed Energy Resources – Safety and Operational Concerns | 8 | 241 | (233) | -97% |
| SDG&E-05 | Major Disturbance to Electrical Service (e.g., Blackout) | 0 | 1,726 | (1,726) | -100% |
| SDG&E-06 | Fail to Black Start | 34 | 2,051 | (2,017) | -98% |
| SDG&E-07 | Cybersecurity | 10,976 | 3,229 | 7,747 | 240% |
| SDG&E-08 | Aviation Incident | 0 | 1,980 | (1,980) | -100% |
| SDG&E-09 | Workplace Violence | 5,061 | 4,185 | 876 | 21% |
| SDG&E-10 | Catastrophic Damage Involving High-Pressure Gas Pipeline Failure | 3,251 | 10,608 | (7,358) | -69% |
| SDG&E-12 | Electric Infrastructure Integrity | 116,670 | 108,545 | 8,125 | 7% |
| SDG&E-13 | Records Management | 15,122 | 12,693 | 2,430 | 19% |
| SDG&E-16 | Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure | 123,334 | 45,431 | 77,903 | 171% |
| NEW ⁵³ | Emergent RAMP | 218,856 | 32,282 | 186,574 | 578% |
| Total SDG&E RAMP Capital | | 697,783 | 328,946 | 368,837 | 112% |

⁵³ Emergent RAMP includes RAMP mitigation activities that were not identified in the TY 2019 GRC but have been newly identified as RAMP in the TY 2024 GRC.

v. **SoCalGas O&M RAMP Variances by GRC Witness Area**

| GRC Witness Area | SoCalGas Exhibit Number | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|------------------------------------|--------------------------------|--------------------------|-------------------------------------|-------------------------|------------------------|
| Accounting and Finance | SCG-33 | 683 | 985 | (301) | -31% |
| Advanced Metering | SCG-17 | 298 | 522 | (225) | -43% |
| Corporate Center - Gen Admin | SCG-28 | 2,360 | 4,794 | (2,434) | -51% |
| CS - Field & Meter Reading | SCG-18 | 63,418 | 66,049 | (2,631) | -4% |
| CS - Information | SCG-20 | 1,672 | 3,072 | (1,400) | -46% |
| CS - Office Operations | SCG-19 | 1,421 | 2,899 | (1,477) | -51% |
| Cybersecurity | SCG-27 | 5,960 | 802 | 5,158 | 643% |
| Environmental | SCG-25 | 2,911 | 2,958 | (47) | -2% |
| Fleet & Facilities | SCG-23 | 2,154 | 1,179 | 975 | 83% |
| Gas Control & Sys Ops/Planning | SCG-13 | 5,464 | 6,478 | (1,014) | -16% |
| Gas Distribution | SCG-04 | 66,706 | 70,373 | (3,668) | -5% |
| Gas Engineering | SCG-09 | 1,516 | 2,306 | (790) | -34% |
| Gas Major Projects | SCG-08 | 479 | 1,593 | (1,114) | -70% |
| Gas System Integrity | SCG-05 | 16,433 | 21,818 | (5,385) | -25% |
| Gas Transmission | SCG-06 | 15,182 | 10,762 | 4,420 | 41% |
| Human Resources | SCG-32 | 5,349 | 14,431 | (9,082) | -63% |
| Pipeline Safety Enhancement Plan | SCG-15 | 50,646 | 63,675 | (13,030) | -20% |
| TIMP & DIMP | SCG-14 | 151,014 | 97,475 | 53,539 | 55% |
| Underground Storage | SCG-10 | 26,031 | 31,264 | (5,233) | -17% |
| Total SoCalGas RAMP O&M | | 419,697 | 403,436 | 16,261 | 4% |

vi. SoCalGas O&M RAMP Variances by RAMP Chapter

| RAMP Chapter | RAMP Risk Description | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|------------------------------------|--|-------------------|------------------------------|------------------|-----------------|
| SCG-01 | Catastrophic Damage Involving Third Party Dig-Ins | 18,607 | 24,027 | (5,420) | -23% |
| SCG-02 | Employee, Contractor, Customer, and Public Safety | 87,940 | 103,727 | (15,788) | -15% |
| SCG-03 | Cybersecurity | 3,899 | 802 | 3,096 | 386% |
| SCG-04 | Catastrophic Damage Involving High-Pressure Gas Pipeline Failure | 179,461 | 132,056 | 47,405 | 36% |
| SCG-05 | Workplace Violence | 3,343 | 2,626 | 718 | 27% |
| SCG-06 | Physical Security of Critical Gas Infrastructure | 1,979 | 2,392 | (413) | -17% |
| SCG-07 | Workforce Planning | 1,703 | 6,762 | (5,059) | -75% |
| SCG-08 | Records Management | 8,584 | 15,074 | (6,490) | -43% |
| SCG-09 | Climate Change Adaptation | 869 | 1,715 | (846) | -49% |
| SCG-10 | Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure | 90,454 | 88,224 | 2,231 | 3% |
| SCG-11 | Catastrophic Event Related to Storage Well Integrity | 20,677 | 26,030 | (5,353) | -21% |
| NEW ⁵⁴ | Emergent RAMP | 2,181 | 0 | 2,181 | 100% |
| Total SoCalGas RAMP O&M | | 419,697 | 403,436 | 16,261 | 4% |

⁵⁴ Emergent RAMP includes RAMP mitigation activities that were not identified in the TY 2019 GRC but have been newly identified as RAMP in the TY 2024 GRC.

vii. SoCalGas Capital RAMP Variances by GRC Witness Area

| GRC Witness Area | SoCalGas Exhibit Number | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|------------------------------------|-------------------------|-------------------|------------------------------|------------------|-----------------|
| Cybersecurity | SCG-27 | 10,302 | 10,962 | (660) | -6% |
| Facilities/Other | SCG-23 | 4,413 | 334 | 4,078 | 1,220% |
| Gas Distribution | SCG-04 | 22,058 | 13,651 | 8,408 | 62% |
| Gas Engineering | SCG-09 | 2,723 | 2,872 | (149) | -5% |
| Gas Major Projects | SCG-08 | 11,603 | 4,902 | 6,701 | 137% |
| Gas Transmission | SCG-07 | 92,727 | 27,747 | 64,980 | 234% |
| Information Technology | SCG-26 | 35,322 | 30,832 | 4,490 | 15% |
| PSEP | SCG-15 | 158,513 | 239,396 | (80,884) | -34% |
| TIMP/DIMP | SCG-14 | 325,499 | 126,770 | 198,729 | 157% |
| Underground Storage | SCG-10 | 176,712 | 92,914 | 83,798 | 90% |
| Total SoCalGas RAMP Capital | | 839,871 | 550,381 | 289,490 | 53% |

viii. SoCalGas Capital RAMP Variances by RAMP Chapter

| RAMP Chapter | RAMP Risk Description | 2021 RAMP Actuals | 2021 Imputed Authorized RAMP | RAMP \$ Variance | RAMP % Variance |
|------------------------------------|--|--------------------------|-------------------------------------|-------------------------|------------------------|
| SCG-01 | Catastrophic Damage Involving Third Party Dig-Ins | 844 | 910 | (66) | -7% |
| SCG-02 | Employee, Contractor, Customer, and Public Safety | 13,105 | 3,418 | 9,687 | 283% |
| SCG-03 | Cybersecurity | 10,302 | 10,962 | (660) | -6% |
| SCG-04 | Catastrophic Damage Involving High-Pressure Gas Pipeline Failure | 360,279 | 339,763 | 20,517 | 6% |
| SCG-05 | Workplace Violence | 4,413 | 334 | 4,078 | 1,220% |
| SCG-06 | Physical Security of Critical Gas Infrastructure | 2,960 | 4,233 | (1,273) | -30% |
| SCG-08 | Records Management | 37,427 | 37,447 | (20) | 0% |
| SCG-09 | Climate Change Adaptation | 8,775 | 7,281 | 1,494 | 21% |
| SCG-10 | Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure | 233,813 | 60,095 | 173,718 | 289% |
| SCG-11 | Catastrophic Event Related to Storage Well Integrity | 167,953 | 85,937 | 82,015 | 95% |
| Total SoCalGas RAMP Capital | | 839,871 | 550,381 | 289,490 | 53% |

ATTACHMENT A

SDG&E's 2021 RISK SPENDING ACCOUNTABILITY REPORT

SDG&E's 2021 RISK SPENDING ACCOUNTABILITY REPORT

1. SDG&E ELECTRIC

A. SDG&E Electric Distribution

i. SDG&E Electric Distribution O&M Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|------------------|---|-------------------------------------|
| Electric Distribution | 113,274 | 105,151 | 8,123 | 8% | | | | | | | |
| Reliability & Capacity | 171 | 298 | (126) | -42% | | | | | | No | No |
| Reliability & Capacity | 48 | 84 | (36) | -43% | 1 | 1 | 0 | 0% | Software license | No | No |
| Sub-Total Reliability & Capacity | 219 | 382 | (162) | -43% | | | | | | No | |
| Construction Services | 770 | 977 | (207) | -21% | | | | | | No | No |
| Construction Services | 665 | 844 | (179) | -21% | | | | | | No | No |
| Construction Services | 2,364 | 3,001 | (636) | -21% | | | | | | No | No |
| Construction Services | 15 | 19 | (4) | -21% | 5 | 5 | 0 | 0% | Training modules | No | No |
| Sub-Total Construction Services | 3,813 | 4,840 | (1,027) | -21% | | | | | | No | |
| District Ops Enterprise Geographic Information System Standards | 219 | 299 | (80) | -27% | | | | | | No | No |
| District Ops Enterprise Geographic Information System Standards | 831 | 1,133 | (302) | -27% | | | | | | No | No |
| Sub-Total Dist Ops Enterprise Geographic Information System Standards | 1,051 | 1,432 | (381) | -27% | | | | | | No | |
| Electric Distribution Operations | 26,111 | 19,500 | 6,612 | 34% | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Electric Distribution Operations | Workforce Planning | 42 | 32 | 11 | 34% | 2 | 2 | 0 | 0% | Headcount | No | No |
| Electric Distribution Operations | Records Management | 3,051 | 2,279 | 773 | 34% | | | | | Asset Management RAMP activity is annual records management compliance. Groups perform a self-assessment of the department's compliance with the records management policies and procedures. The assessments are then reviewed by the Records Management group. | No | No |
| Sub-Total Electric Distribution Operations | | 29,205 | 21,810 | 7,395 | 34% | | | | | | Yes | |
| Kearny Operations Services | Non-RAMP | 1,952 | 2,247 | (295) | -13% | 17 | 20 | (3) | -17% | FTE | No | No |
| Grid Operations | Non-RAMP | 865 | 639 | 226 | 35% | 1 | 1 | 0 | 0% | EMS Systems Managed | No | No |
| Grid Operations | Workforce Planning | 6 | 4 | 1 | 35% | 1 | 1 | 0 | 0% | FTE | No | No |
| Sub-Total Grid Operations | | 870 | 643 | 228 | 35% | | | | | | No | |
| Project Management | Non-RAMP | 747 | 1,432 | (685) | -48% | | | | | Unable to identify a single unit due to multiple activities in this workpaper such as planner development and training and design/development of e-training materials. | No | No |
| Electric Regional Operations | Non-RAMP | 11,369 | 11,538 | (169) | -1% | 22,636 | 22,973 | (337) | -1% | Estimated hours of project managers and advisors | No | No |
| Electric Regional Operations | Safety Policies & Programs | 20,970 | 21,282 | (312) | -1% | 63,625 | 63,904 | (279) | 0% | Employee hours in safety meetings | No | No |
| Electric Regional Operations | Aviation Safety | 456 | 463 | (7) | -1% | 1 | 1 | 0 | 0% | Aviation Safety Management System | No | No |
| Electric Regional Operations | Distribution Switch Maintenance Program | 1,156 | 1,173 | (17) | -1% | 474 | 481 | (7) | -1% | Switches inspected | No | No |
| Electric Regional Operations | Employee Records Management training course | 44 | 44 | (1) | -1% | 1 | 1 | 0 | 0% | Number of trainings | No | No |
| Electric Regional Operations | Workforce Planning | 1,217 | 1,235 | (18) | -1% | 12 | 11 | 1 | 13% | Apprentice Linemen | No | No |
| Electric Regional Operations | Inspection and Preventative Maintenance | 1,222 | 1,240 | (18) | -1% | 117 | 119 | (2) | -2% | High risk OH switches (typically in contamination zones) inspected or replaced | No | No |
| Sub-Total Electric Regional Operations | | 36,433 | 36,974 | (542) | -1% | | | | | | No | |
| Skills & Compliance Training | Non-RAMP | 1,517 | 2,204 | (687) | -31% | 12 | 14 | (2) | -14% | FTE | No | No |
| Skills & Compliance Training | Ongoing maintenance programs | 2,139 | 3,107 | (968) | -31% | 146 | 232 | (86) | -37% | Classes | No | Yes |
| Sub-Total Skills & Compliance Training | | 3,656 | 5,311 | (1,655) | -31% | | | | | | No | |
| Service Order Team (SOT) | Non-RAMP | 4,060 | 182 | 3,878 | 2130% | | | | | Unable to determine a single unit of measure due to multiple activities that include projects without a long service life and labor only projects. | Yes | No |
| Substation C&O | Non-RAMP | 7,575 | 5,071 | 2,504 | 49% | 2,845 | 1,062 | 1,783 | 168% | Maintenance Orders | Yes | Yes |
| Substation C&O | Condition Base Maintenance (CBM) - Distribution | 0 | 329 | (329) | -100% | 0 | 15 | (15) | -100% | CBM monitors replaced | No | Yes |
| Sub-Total Substation C&O | | 7,575 | 5,400 | 2,174 | 40% | | | | | | No | |
| System Protection | Non-RAMP | 3,037 | 2,051 | 986 | 48% | 22 | 11 | 11 | 100% | FTE | No | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|---|--|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|--------------------------------|---|-------------------------------------|----|
| System Protection | Replace failed SCADA remote terminal units (RTU's) | 0 | 61 | (61) | -100% | 0 | 7 | (7) | -100% | RTU's replaced | No | Yes | |
| System Protection | Workforce Planning | 11 | 7 | 3 | 44% | 196 | 125 | 71 | 57% | Hours job shadowed | No | Yes | |
| Sub-Total System Protection | | 3,047 | 2,119 | 928 | 44% | | | | | | No | | |
| Distribution and Engineering | Non-RAMP | 949 | 433 | 515 | 119% | Unable to identify one single unit due to multiple activities in this workpaper such as developing and maintaining overhead and underground construction standards to ensure safe and reliable customer service throughout 12kv and 4kv electric distribution. | | | | | | No | No |
| Distribution and Engineering | Safety Policies & Programs | 1,999 | 913 | 1,086 | 119% | 382 | 454 | (72) | -16% | Published updates to standards | No | No | |
| Distribution and Engineering | Workforce Planning | 507 | 231 | 275 | 119% | 3,322 | 2,808 | 514 | 18% | Hours of training | No | No | |
| Distribution and Engineering | Records Management | 98 | 45 | 53 | 119% | Asset Management RAMP activity is annual records management compliance. Groups perform a self-assessment of the department's compliance with the records management policies and procedures. The assessments are then reviewed by the Records Management group. | | | | | | No | No |
| Sub-Total Distribution and Engineering | | 3,552 | 1,623 | 1,930 | 119% | | | | | | No | | |
| Asset Management | Utility Asset Management (Non-WMP) | 1,647 | 2,463 | (816) | -33% | 1 | 1 | 0 | 0% | Consultant Contract | No | No | |
| Asset Management | Annual records management compliance | 634 | 948 | (314) | -33% | Asset Management RAMP activity is annual records management compliance. Groups perform a self-assessment of the department's compliance with the records management policies and procedures. The assessments are then reviewed by the Records Management group. | | | | | | No | No |
| Sub-Total Asset Management | | 2,281 | 3,411 | (1,130) | -33% | | | | | | No | | |
| Troubleshooting | Non-RAMP | 8,184 | 8,904 | (720) | -8% | 67,929 | 77,580 | (9,651) | -12% | SORT Orders | No | No | |
| Major Projects | Non-RAMP | 660 | 117 | 542 | 462% | Unable to identify one single unit due to multiple activities in this workpaper involved with Project Management process improvement and support. | | | | | | No | No |
| Major Projects | Contractor Safety Program | 35 | 6 | 29 | 462% | Unable to identify one single unit due to multiple activities in this workpaper such as Contractor Incidents Reports and Safety Reviews. | | | | | | No | No |
| Sub-Total Major Projects | | 695 | 124 | 571 | 462% | | | | | | No | | |
| Technology Utilization | Non-RAMP | 1,760 | 1,395 | 365 | 26% | 13 | 12 | 1 | 8% | FTE | No | No | |
| Compliance Management | Non-RAMP | 2,039 | 2,651 | (612) | -23% | 9 | 11 | (2) | -18% | FTE | No | No | |
| Compliance Management | Records Management | 441 | 574 | (132) | -23% | Asset Management RAMP activity is annual records management compliance. Groups perform a self-assessment of the department's compliance with the records management policies and procedures. The assessments are then reviewed by the Records Management group. | | | | | | No | No |
| Sub-Total Compliance Management | | 2,481 | 3,225 | (744) | -23% | | | | | | No | | |
| Tech Solutions and Reliability | Non-RAMP | 1,028 | 2,248 | (1,219) | -54% | Unable to identify one single unit due to multiple activities in this workpaper, such as software, material, and travel necessary to perform department functions. | | | | | | No | No |
| Tech Solutions and Reliability | Records Management | 664 | 1,451 | (787) | -54% | Asset Management RAMP activity is annual records management compliance. Groups perform a self-assessment of the department's compliance with the records management policies and procedures. The assessments are then reviewed by the Records Management group. | | | | | | No | No |
| Sub-Total Tech Solutions and Reliability | | 1,692 | 3,698 | (2,006) | -54% | | | | | | No | | |

ii. SDG&E Electric Distribution O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|----------------------------------|---|---|-------------------------------------|---|
| Electric Distribution Operations | Non-RAMP | Yes | No | Majority of costs are “truck stock” items from the storerooms that are not directly charged to the O&M account or capital projects for which they are utilized. Storeroom upward pressures have increased from 1.69% (2017) to 2.56% (2021). |
| Skills & Compliance Training | Ongoing maintenance programs | No | Yes | Total costs for the 2021 class were lower than the imputed authorized due to being able to offer virtual classes with larger class sizes, which replaced smaller in-person classes. The Skills and Compliance Training Team also prepared training in 2021 that is being rolled out in 2022. |
| Service Order Team (SOT) | Non-RAMP | Yes | No | Since 2021, the service order team has responded and managed an approximate 31 percent increase in completed service order requests in comparison to 2018. A portion of this increase has been a direct increase in labor-only jobs such as solar and unmetered, which increases the O&M spend. In addition, SDG&E periodically evaluates labor allocations between capital and O&M work. Recent trends have caused a shift in a portion of the labor allocation from capital to O&M, which contributed to this variance. |
| Substation C&O | Non-RAMP | Yes | Yes | The variance between the number of maintenance orders and associated costs and the respective imputed values in 2021 is primarily due to the amount of maintenance required on substation equipment varying year-to-year, depending upon timing of cyclical preventative maintenance, and identification of additional necessary corrective maintenance. Additionally, upward pressure of costs associated with responding to PSPS/Heat/Storm/and other high-profile events that required standby resources continued in 2021, which are not captured in the imputed methodology. |
| Substation C&O | Condition Base Maintenance (CBM) - Distribution | No | Yes | No CBM monitors failed in 2021, resulting in zero CBM replacements. |
| System Protection | Non-RAMP | No | Yes | The variance between the number of units and the imputed value in 2021 is primarily due to the amount of maintenance required on relay, protection, and control equipment varying year-to-year, depending upon timing of cyclical preventative maintenance, and identification of additional necessary corrective maintenance. There were also |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|---|
| | | | | PSPS/EOC/Storm/high profile events that required standby resources, which are not captured in the imputed methodology. The FTE count was also higher associated with the need to perform maintenance on a growing number of SCADA devices installed to the distribution system. |
| System Protection | Replace failed SCADA remote terminal units (RTU's) | No | Yes | No RTUs failed in 2021, resulting in zero RTU replacements. |
| System Protection | Workforce Planning | No | Yes | The variance is primarily due to an increase in job shadow training for new relay techs and SCADA techs associated with an increased attrition rate. |

iii. SDG&E Electric Distribution O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|----------------------------------|--------------------------|--|---|---|
| Electric Distribution Operations | Non-RAMP | SDG&E-15-2R WHS-28 to WHS-31 WP IED004.000 | SDG&E-12 TS-25 to TS-30 WP IED003.000 | This workgroup is made up of the Electric Distribution Operations Control Center (EDOCC) and Electric Distribution Operations Technology (EDOT). The EDOCC is responsible for operating the Electric Distribution System safely and reliably for planned and unplanned events (e.g., outages). The Center has two main resource types: technical support personnel and operators/programmers. This group supports 24/7 operations management and oversight for: the electric distribution system, District Engineers with Reliability Analysis of feeders and branches, and customer call-backs initiated by the Technical Support Team (TST) for every outage event. EDOT provides technical and operational assistance necessary to operate the electric distribution system safely and efficiently. System operators will require increased levels of situational awareness for monitoring the performance of the grid with the integration of distributed resources. SDG&E anticipates the installation of 200-300 new remote-controlled devices per year to enable operators to more precisely isolate the fault and energize the customer. The Outage Management System (OMS), Distributed Energy Resource Management System (DERMS), and Advanced Distribution Management System (ADMS) will require increased capabilities to meet customer demand and to manage two-way power flow and granular visibility to support the integration of distributed energy resources on the grid. This will require |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------|------------------------------|--|---|--|
| | | | | increased support staff, additional equipment, and adequate facilities to effectively manage and maintain these additional devices and resources. This will also require continued support for the Back-Up Control Center, where equipment such as computers, servers, monitors and radio consoles will require constant monitoring. |
| Skills & Compliance Training | Ongoing maintenance programs | SDG&E-15-2R WHS-46 to WHS-49 WP IED013.000 | SDG&E-12 TS-52 to TS-56 WP IED009.000 | Skills Training is responsible for the development and training of the Electric Regional Operations (ERO) workforce, which consists of electric field personnel, non-electrical support personnel, and supervisory staff. The core training provided by this organization consists of the following: electric linemen development using a three-year apprenticeship program; compliance training to meet federal, state, local, safety, and environmental regulations; equipment operations and commercial drivers' training; and providing training support for other business units. |
| Service Order Team (SOT) | Non-RAMP | SDG&E-15-2R WHS-50 to WHS-51 WP IED014.000 | SDG&E-12 TS-57 to TS-58 WP IED010.000 | The Service Order Team (SOT) is responsible for planning, overseeing, and managing new additions and modifications to the electric and gas distribution systems, primarily related to services. The Service Order Team acts as the SDG&E customer representative on these projects. The O&M costs associated with this team are for its support of construction operations, storm recovery, construction maintenance programs, labor for training activities, and preparing orders to replace property. |
| Substation C&O | Non-RAMP | SDG&E-15-2R WHS-51 to WHS-53 WP IED015.000 | SDG&E-12 TS-37 to TS-41 WP IED006.000 | The Substation Construction & Maintenance and associated support organizations are responsible for the installation, inspection and maintenance of 140 distribution substations on the SDG&E system. This includes the maintenance of 293 distribution power transformers and their associated load tap changers or voltage regulators. As well as 1300 circuit breakers including oil, air, and vacuum classifications, and their associated line and bus disconnects. This group inspects and maintains all substation equipment including batteries, buses, support structures, capacitor banks, reactors, grounding systems, fire suppression systems, and perimeter fences and gates. The substation construction and maintenance group is responsible for GO174 compliance, with regards to its inspection and corrective maintenance program, compliance with health and safety programs, and compliance with SDG&E's maintenance standards. These programs are critical to the safe and efficient installation, inspection, maintenance, and reliability of all distribution electric facilities managed and implemented within the Substation Construction and Maintenance section. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|---|--|---|--|
| Substation C&O | Condition Base Maintenance (CBM) - Distribution | SDG&E-15-2R WHS-51 to WHS-53 WP IED015.000 | SDG&E-12 TS-37 to TS-41 WP IED006.000 | The Substation Construction & Maintenance and associated support organizations are responsible for the installation, inspection and maintenance of 140 distribution substations on the SDG&E system. This includes the maintenance of 293 distribution power transformers and their associated load tap changers or voltage regulators. As well as 1300 circuit breakers including oil, air, and vacuum classifications, and their associated line and bus disconnects. This group inspects and maintains all substation equipment including batteries, buses, support structures, capacitor banks, reactors, grounding systems, fire suppression systems, and perimeter fences and gates. The substation construction and maintenance group is responsible for GO174 compliance, with regards to its inspection and corrective maintenance program, compliance with health and safety programs, and compliance with SDG&E's maintenance standards. These programs are critical to the safe and efficient installation, inspection, maintenance, and reliability of all distribution electric facilities managed and implemented within the Substation Construction and Maintenance section. |
| System Protection | Non-RAMP | SDG&E-15-2R WHS-53 to WHS-55 WP IED017.000 | SDG&E-12 TS-42 to TS-44 WP IED006.002 | System Protection Maintenance maintains protective relays and control systems within SDG&E's substations. This involves routine preventive maintenance on time-based intervals - calibrating and trip-testing protective relays. This also involves corrective maintenance, or trouble-shooting, existing systems that alarm or fail to function properly. Cost Center staffing is on-call around the clock, and in addition, provides standby personnel for fire preparedness and responds to system emergencies, e.g., unscheduled load shedding and earthquakes. This is a technical group that uses computer driven test equipment. Databases are used to generate work orders and store test results. The aging infrastructure includes old electromechanical relays that are replaced with microprocessor based relays. These new relays have considerably more functionality than the older discrete single-function electromechanical units, but they also require a greater degree of technical expertise and skill to maintain. In particular, computer and logic skills are essential to work with these devices, whereas in the past, it was not required. The new, more complex, protection schemes are being implemented for these relays which take advantage of the increased functionality. As a result, the company has increased the training it provides to relay technicians. |
| System Protection | Replace failed SCADA remote | SDG&E-15-2R WHS-53 to WHS-55 WP IED017.000 | SDG&E-12 TS-42 to TS-44 WP IED006.002 | System Protection Maintenance maintains protective relays and control systems within SDG&E's substations. This involves routine preventive maintenance on time-based intervals - calibrating and trip-testing protective |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|--|---|--|
| relays. This also involves corrective maintenance, or troubleshooting, existing systems that alarm or fail to function properly. Cost Center staffing is on-call around the clock, and in addition, provides standby personnel for fire preparedness and responds to system emergencies, e.g., unscheduled load shedding and earthquakes. This is a technical group that uses computer driven test equipment. Databases are used to generate work orders and store test results. The aging infrastructure includes old electromechanical relays that are replaced with microprocessor based relays. These new relays have considerably more functionality than the older discrete single-function electromechanical units, but they also require a greater degree of technical expertise and skill to maintain. In particular, computer and logic skills are essential to work with these devices, whereas in the past, it was not required. The new, more complex, protection schemes are being implemented for these relays which take advantage of the increased functionality. As a result, the company has increased the training it provides to relay technicians. | terminal units (RTU's) | | | System Protection Maintenance maintains protective relays and control systems within SDG&E's substations. This involves routine preventive maintenance on time-based intervals - calibrating and trip-testing protective relays. This also involves corrective maintenance, or trouble-shooting, existing systems that alarm or fail to function properly. Cost Center staffing is on-call around the clock, and in addition, provides standby personnel for fire preparedness and responds to system emergencies, e.g., unscheduled load shedding and earthquakes. This is a technical group that uses computer driven test equipment. Databases are used to generate work orders and store test results. The aging infrastructure includes old electromechanical relays that are replaced with microprocessor based relays. These new relays have considerably more functionality than the older discrete single-function electromechanical units, but they also require a greater degree of technical expertise and skill to maintain. In particular, computer and logic skills are essential to work with these devices, whereas in the past, it was not required. The new, more complex, protection schemes are being implemented for these relays which take advantage of the increased functionality. As a result, the company has increased the training it provides to relay technicians. |
| System Protection Maintenance maintains protective relays and control systems within SDG&E's substations. This involves routine preventive maintenance on time-based intervals - calibrating and trip-testing protective relays. This also involves corrective maintenance, or trouble-shooting, existing systems that alarm or fail to function properly. Cost Center staffing is on-call around the clock, and in addition, provides standby personnel for fire preparedness and responds to system emergencies, e.g., unscheduled load shedding and earthquakes. This is a technical group that uses computer driven test equipment. Databases are used to generate work orders and store test results. The aging infrastructure includes old electromechanical relays that are replaced with microprocessor based relays. These new relays have considerably more functionality than the older discrete single-function electromechanical units, but they also require a greater degree of technical expertise and skill to maintain. In particular, computer and logic skills are essential to work with these devices, whereas in the past, it was not required. The new, more complex, protection schemes are being implemented for these relays which take advantage of the increased functionality. As a result, the company has increased the training it provides to relay technicians. | Workforce Planning | SDG&E-15-2R WHS-53 to WHS-55 WP IED017.000 | SDG&E-12 TS-42 to TS-44 WP IED006.002 | System Protection Maintenance maintains protective relays and control systems within SDG&E's substations. This involves routine preventive maintenance on time-based intervals - calibrating and trip-testing protective relays. This also involves corrective maintenance, or trouble-shooting, existing systems that alarm or fail to function properly. Cost Center staffing is on-call around the clock, and in addition, provides standby personnel for fire preparedness and responds to system emergencies, e.g., unscheduled load shedding and earthquakes. This is a technical group that uses computer driven test equipment. Databases are used to generate work orders and store test results. The aging infrastructure includes old electromechanical relays that are replaced with microprocessor based relays. These new relays have considerably more functionality than the older discrete single-function electromechanical units, but they also require a greater degree of technical expertise and skill to maintain. In particular, computer and logic skills are essential to work with these devices, whereas in the past, it was not required. The new, more complex, protection schemes are being implemented for these relays which take advantage of the increased functionality. As a result, the company has increased the training it provides to relay technicians. |

iv. SDG&E Electric Distribution Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| Electric Distribution | | 201,395 | 197,056 | 4,340 | 2% | | | | | | | |
| Field Shunt Capacitors | Non-RAMP | 1,109 | 727 | 382 | 52% | 4 | 3 | 1 | 33% | Capacitor banks energized | No | Yes |
| Ocean Ranch 69/12KV Substation | Non-RAMP | (18) | 3,108 | (3,126) | -101% | | | | | The project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Substation 12kV Capacitor Upgrades | Non-RAMP | 377 | 469 | (93) | -20% | 0 | 4 | (4) | -100% | Capacitor banks installed | No | Yes |
| C1447 MTO: Extension and offload from C958 | Non-RAMP | 0 | 78 | (78) | -100% | | | | | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| GRID Modernization | Non-RAMP | 0 | 81 | (81) | -100% | | | | | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Planned Investments | Non-RAMP | 4,907 | 0 | 4,907 | 100% | | | | | This emergent blanket program provides for the reconstruction and extension of overhead and underground distribution facilities to replace overloaded conductors, to correct primary voltage problems, and to transfer load to balance circuits and substations. The variety of work activities in this program makes it infeasible to identify a single unit of measurement. | No | No |
| Reactive Small Capital Projects | Non-RAMP | 1,331 | 2,413 | (1,083) | -45% | | | | | This blanket program addresses primary distribution system overload and voltage-related issues with individual capital jobs identified on the forecast process. It provides for the reconstruction and extension of overhead and underground distribution facilities to replace overloaded conductors, to correct primary voltage problems, and to transfer load to balance circuits and substations. The variety of work activities in this program makes it infeasible to identify a single unit of measurement. | No | No |
| C1023 LI New 12KV Circuit & Reconductor C354 | Non-RAMP | 116 | 511 | (395) | -77% | | | | | The project was completed prior to 2021, and therefore there are no actual or imputed units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| C1450 MTO: New 12KV Circuit | Non-RAMP | 632 | 244 | 388 | 159% | | | | | The project involves the installation of SCADA switches, a pad-mount SCADA capacitor, a new circuit breaker, trenching and installation of new conduit and underground cable, and retagging of electric distribution equipment after load is transferred. The project also includes the reconfiguration of existing overhead poles and the installation of two new hook sticks and installing a new circuit | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | | | | | |
| TL633 Reconductor (Bernardo - Rancho Carmel) | Non-RAMP | 3 | 0 | 3 | 100% | | | | | | No | No |
| Doheny Desalination 15MW Project | Non-RAMP | 0 | 73 | (73) | -100% | | | | | | No | No |
| Distribution System Capacity Improvement | Non-RAMP | 2,440 | 2,070 | 369 | 18% | | | | | | No | No |
| Sub-Total Capacity/Expansion | | 10,897 | 9,777 | 1,120 | 11% | | | | | | | |
| Electric Distribution Tools/Equipment | Non-RAMP | 2,045 | 2,118 | (73) | -3% | | | | | | No | No |
| Electric Transmission Tools/Equipment | Non-RAMP | 358 | 0 | 358 | 100% | | | | | | No | No |
| Sub-Total Equip/Tools/Misc. | | 2,404 | 2,118 | 285 | 13% | | | | | | | |
| RAMP Base - Corrective Maint Program (CMP) | Inspection, Repair, Maintenance & Replacement Programs | 10,592 | 13,970 | (3,378) | -24% | 1603 | 1791 | (188) | -10% | Number of CMP Jobs Completed | No | No |
| RAMP Base - DOE Switch/Manhole Replacement | Distribution Switch Maintenance Program | 14,228 | 7,035 | 7,193 | 102% | 797 | 394 | 403 | 102% | Number of Vaults Restored and Number of DOE Switches Replaced | Yes | Yes |
| RAMP Base - Replacement of Live Front Transformer and Live Front Equipment | Live Front Transformer and Terminator Replacement | 832 | 689 | 143 | 21% | 10 | 8 | 2 | 21% | Number of Terminators Replaced | No | Yes |
| Aerial Marking for Safety | Non-RAMP | (3) | 73 | (76) | -104% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| RAMP Incremental - Distributed Generation Interconnect | Power Quality Studies of DER Inter-connections | 8 | 241 | (233) | -97% | 0 | 1 | (1) | -100% | Number of interconnection SCADA switches installed | No | Yes |
| RAMP Incremental On Ramp Aerial Light - Post Filing | Install Aerial Marking and Lighting | 0 | 252 | (252) | -100% | | | | | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Blue Homet Solar | Non-RAMP | 63 | 0 | 63 | 100% | | | | | Number of DG interconnection points installed and energized | No | No |
| Fallbrook Battery Energy Storage - PTO | Non-RAMP | 15 | 0 | 15 | 100% | | | | | Number of DG interconnection points installed and energized | No | No |
| Gateway Energy Storage | Non-RAMP | 1 | 0 | 1 | 100% | | | | | The project was completed prior to 2021, and therefore there are no actual or imputed units for 2021. | No | No |
| Kettle Solar One | Non-RAMP | 14 | 0 | 14 | 100% | | | | | Number of DG interconnection points installed and energized | No | No |
| Mount Laguna Wind | Non-RAMP | 2 | 0 | 2 | 100% | | | | | Number of DG interconnection points installed and energized | No | No |
| Rugged Solar Farm | Non-RAMP | 41 | 0 | 41 | 100% | | | | | Number of DG interconnection points installed and energized | No | No |
| Top Gun PTO Interconnection | Non-RAMP | 10 | 0 | 10 | 100% | | | | | The project was completed prior to 2021, and therefore there are no actual or imputed units for 2021. | No | No |
| Valley Center Renewable | Non-RAMP | 56 | 0 | 56 | 100% | | | | | Number of DG interconnection points installed and energized | No | No |
| Elect Transmission Line Reliability Projects | Non-RAMP | 3,136 | 377 | 2,759 | 731% | | | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| RAMP Base -- Annual Pole Reinforcement (Non-WMP) | GO165: Distribution Inspect and Repair program | 12,709 | 7,419 | 5,289 | 71% | 711 | 454 | 257 | 57% | Number of Poles Replaced | Yes | Yes |
| RAMP Base - Avian Protection Program | Non-RAMP | 1,762 | 1,635 | 127 | 8% | 965 | 895 | 70 | 8% | Number of poles protected | No | No |
| Sub-Total Mandated | | 43,465 | 31,692 | 11,773 | 37% | | | | | | | |
| Electric Distribution Easements | Non-RAMP | 2,766 | 1,612 | 1,154 | 72% | | | | | This capital budget is required to obtain new electric distribution easements necessary to provide service to new customers, accommodate street and highway relocations, underground conversions, and other capital improvement projects to improve electrical service. The variety of work activities in this | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|---|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|---|---|-------------------------------------|-------------------|
| | | | | | | | | | | | | | 2021 Actual Units |
| Sub-Total New Business | | 2,766 | 1,612 | 1,154 | 72% | | | | | | | | |
| Electric Meters & Regulators | Non-RAMP | 7,613 | 3,913 | 3,700 | 95% | 48,888 | 26,529 | 22,359 | 84% | Meters purchased | No | Yes | |
| Transformers | Non-RAMP | 16,834 | 24,264 | (7,430) | -31% | 6,271 | 9,364 | (3,093) | -33% | Number of Transformers purchased | Yes | Yes | |
| Sub-Total Materials | | 24,447 | 28,177 | (3,730) | -13% | | | | | | | | |
| Reliability/Improvements Capital Projects | Minor Distribution Substation Reliability Projects | 1,013 | 1,977 | (964) | -49% | The activities under this category include replacement of miscellaneous substation equipment in response to equipment failure. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | No | No |
| Management of Overhead Distribution Service | Management of Overhead Distribution Service (Non-CMP) | 11,768 | 7,711 | 4,057 | 53% | 160 | 105 | 55 | 53% | Number of Overhead Transformer Forced Outages Requiring Crew In-Kind Replacements | No | Yes | |
| Management of Underground Distribution Service | Management of Underground Distribution Service | 3,353 | 4,344 | (991) | -23% | 260 | 337 | (77) | -23% | Number of Underground Transformer Forced Outages Requiring Repairs/Replacement Work | No | Yes | |
| RAMP Base - Cable Replacement | Proactive cable replacement | 10,129 | 18,733 | (8,604) | -46% | 390 | 721 | -331 | -46% | Number of Miles of Cable Replaced | Yes | Yes | |
| RAMP Incremental Capital Restoration of Service | Capital improvements | 10,817 | 10,573 | 243 | 2% | 671 | 656 | 15 | 2% | Number of Non-Transformer Forced Outages Requiring Crew Repair or In-Kind Replacement | No | No | |
| Rebuild Pt Loma Substation | Non-RAMP | 0 | 2,008 | (2,008) | -100% | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | | | | | | No | No |
| RAMP Incremental - 4 kV Modernization - Distribution | Overhead distribution modernization and hardening | 4,698 | 1,523 | 3,175 | 208% | 7 | 3 | 4 | 126% | Number of Miles of Conductor Replaced | No | Yes | |
| Sewage Pump Station Rebuilds RAMP Incremental | Rebuild and repair aging infrastructure | (4) | 770 | (775) | -101% | This project was completed prior to 2021, and the variance is due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC-approved a post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|-------------------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | | | % Unit Variance | Unit of Measure | | |
| RAMP Base - Condition Based Maintenance - Smart Grid | Conditioned Based Monitoring System | 0 | 2,180 | (2,180) | -100% | | | | | No | No |
| Rebuild Kearny 69/12kV Substation | Non-RAMP | 6 | 2,888 | (2,881) | -100% | | | | | No | No |
| New Vine 69/12KV Substation | Non-RAMP | 0 | 3,365 | (3,365) | -100% | | | | | No | No |
| Streamview 69/12KV Sub Rebuild-Pre Eng | Non-RAMP | 616 | 33 | 583 | 1757% | | | | | No | No |
| Poway Substation Rebuild | Poway 69kV Substation Rebuild | 1,382 | 252 | 1,130 | 449% | | | | | No | No |
| Rancho Santa Fe Sub Fire Hardening | Non-RAMP | 700 | 1,304 | (604) | -46% | | | | | No | No |
| Vault Restoration | Non-RAMP | 0 | 401 | (401) | -100% | | | | | No | No |
| OIR Worst Circuits | Non-RAMP | 0 | 1,504 | (1,504) | -100% | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | Units | % Unit Variance | | | |
| | | | | | | | | | | circuits located in a high fire threat district (HFTD) and the management of overhead distribution service program for circuits not in an HFTD. There are no imputed units because the variety of work activities in this category makes it infeasible to identify a single unit of measurement. The underlying cost drivers for this program include switch installations, reconductors, installation of fault indicators, circuit reconfiguration, installation of fuses, and other circuit modifications required to improve reliability. The calculation used to authorize funding at the activity level for GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been cancelled. | | |
| San Mateo Substation Rebuild (start in 2019) | Non-RAMP | 2 | 0 | 2 | 100% | | | | | Substation | No | No |
| Avocado Sub 69KV Rebuild | Non-RAMP | 373 | 0 | 373 | 100% | | | | | Substation | No | No |
| Substation Mod to Support FLISR | Substation Modification To Support FLISR | 2,511 | 0 | 2,511 | 100% | 2 | 0 | 2 | 100% | Number of Installed switchgear section; Number of replaced breaker | No | Yes |
| Electric Distribution Grid Analytics | Non-RAMP | 0 | 1,323 | (1,323) | -100% | | | | | | No | No |
| Distribution Circuit Reliability Construction - RAMP | Expand and Maintain Distribution Advanced SCADA infrastructure | 4,260 | 4,179 | 82 | 2% | 14 | 14 | 0 | 2% | Number of Switches Installed | No | No |
| Power Quality Program | Power Quality Monitor Deployment and Replacement | 1,446 | 0 | 1,446 | 100% | 8 | 0 | 8 | 100% | Number of Meters Replaced/Installed | No | Yes |
| Meteorology Outage Prediction Modeling P2 | Non-RAMP | 0 | 268 | (268) | -100% | | | | | | No | No |
| 12kV Substation Reliability | Torrey Pines 12kV Breaker Replacements | 720 | 0 | 720 | 100% | | | | | | No | No |
| 12kV Substation Reliability | El Cajon 12kV Breaker Replacements | 346 | 0 | 346 | 100% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | Units | % Unit Variance | | | |
| 12kV Substation Reliability | Non-RAMP | 995 | 0 | 995 | 100% | | | | | This workpaper comprises activities that include purchasing of 12kV circuit breakers, batteries, transformers, switchgear, engineering, design and survey services, and both above- and below-grade construction services. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| 12kV Substation Reliability | Granite 12kV Breaker & Switchgear Replacements | 226 | 0 | 226 | 100% | | | | | This workpaper comprises activities that include purchasing of 12kV circuit breakers, batteries, transformers, switchgear, engineering, design and survey services, and both above- and below-grade construction services. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Coronado 69/12kV Transformer Replacement | Substation Reliability for Distribution Components - Coronado 69/12kV Transformer Replacements | 17 | 0 | 17 | 100% | | | | | This is an emergent project in early pre-construction phase with a current ISD of 2026. | No | No |
| La Jolla 69/12kV Transformer Replacement | La Jolla 69/12kV Transformer Replacement | 13 | 0 | 13 | 100% | | | | | This is an emergent project in pre-construction phase with a current ISD of 2024. There are no units recorded in 2021. | No | No |
| Non-HFTD WFI | Non-HFTD Wireless Fault Indicator | 62 | 0 | 62 | 100% | 15 | 0 | 15 | 100% | Number of Wireless Fault Indicators (WFIs) Installed | No | Yes |
| Mission 12kV Replacements | Mission 12kV Replacements | 1,241 | 0 | 1,241 | 100% | | | | | This is an emergent project in pre-construction phase with a current ISD of 2023. There were no units recorded in 2021. | No | No |
| Emergency Substation Equipment | Emergency Transformer and Switchgear | 1,728 | 505 | 1,222 | 242% | | | | | This workpaper includes activities to replenish a variety of spare equipment. Equipment includes breakers, transformer, cables, jumpers, etc. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| RAMP - Substation SCADA Expansion-Distribution | Distribution Substation SCADA Expansion | 796 | 403 | 393 | 97% | | | | | Number of Protection and Automation Devices Commissioned | No | Yes |
| Telegraph Canyon 138/12kV Bank & C1226 | Non-RAMP | 0 | 356 | (356) | -100% | | | | | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Margarita Substation New 12kV Circuit 1259 | Non-RAMP | 0 | 145 | (145) | -100% | | | | | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Transmission System Automation | Non-RAMP | (649) | 0 | (649) | 100% | | | | | No units were installed in 2021. The activities under this blanket budget include a variety of different projects and initiatives related to transmission SCADA system upgrades and control and monitoring in support of GRID Ops. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Artesian 230Kv Substation Expansion | Substation Reliability for Distribution Components - Proactive | 1,264 | 0 | 1,264 | 100% | | | | | The Artesian 69/12kV substation was energized in 2021. The scope of the project included both substation and line-side distribution work. The variety of | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | Units | % Unit Variance | | | |
| High Risk Switch Replacement Project | Distribution Overhead Switch Replacement Program | 1,872 | 0 | 1,872 | 100% | 35 | 0 | 35 | 100% | Number of Switches Replaced | No | Yes |
| Urban Substation Rebuild | Substation Reliability for Distribution Components - Proactive | 533 | 0 | 533 | 100% | | | | | This is an emergent project. The 2021 spend for this workpaper is related to pre-construction Engineering & Design Services. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Mission Substation 230KV Rebuild | Non-RAMP | 158 | 0 | 158 | 100% | | | | | This is an emergent project. This workpaper includes activities for communication equipment to support FERC-driven substation rebuild. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| TL603 Loop-in (Sweetwater, National City, and Naval Station Metering) | Transmission OH Reliability Projects | 1 | 0 | 1 | 100% | | | | | Emergent project. FERC-driven project transmission loop-in with minor common/general plant allocations for CPUC components. | No | No |
| TL673 Direct Buried Cable Replacement (Rose Canyon - La Jolla) | Transmission OH Reliability Projects | 24 | 0 | 24 | 100% | | | | | Emergent project. 2021 actuals represent pre-construction design and engineering activities. | No | No |
| TL6975- Escondido - San Marcos | Transmission OH Reliability Projects | 319 | 0 | 319 | 100% | | | | | Emergent project. 2021 actuals represent pre-construction design and engineering activities. | No | No |
| CBM - 4.2 Firmware Upgrade for Transformers | Non-RAMP | 405 | 0 | 405 | 100% | | | | | This is an emergent project currently under construction. 2021 actuals represent material purchases and installation labor. | No | No |
| Vista Fuel Cell | Non-RAMP | 782 | 0 | 782 | 100% | 1 | 0 | 1 | 100% | Number of Fuel Cell Systems Replaced | No | Yes |
| TL698 Avocado Sub Gateway DB CBL Replace | Non-RAMP | 6 | 0 | 6 | 100% | | | | | The project was completed in 2020. 2021 costs represent trailing closeout charges. | No | No |
| Ramp Base - Install SCADA On-Line Capacitors | Expand and Maintain Distribution Advanced SCADA infrastructure | 834 | 1,189 | (355) | -30% | 15 | 21 | -6 | -30% | Number of SCADA Capacitors Installed | No | Yes |
| TL23001/04 Insulator and Hardware Replacement | Non-RAMP | 4 | 0 | 4 | 100% | | | | | This project is due for completion in 2022. The small amount of spend in 2021 is related to engineering and permitting. | No | No |
| Replace Obsolete Substation Equipment - RAMP | Substation rebuild/replacements based on operational significance and SDG&E reliability standards | 2,161 | 5,364 | (3,204) | -60% | | | | | This workpaper's activities include erosion control, fence replacement, control shelter roof replacement, transformer concrete pads, new drainage improvements in addition to traditional breakers transformers, etc. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Sub-Total Reliability/Improvements | | 66,924 | 73,298 | (6,374) | -9% | | | | | | | |
| SF6 Switch Replacement | Replace with new technology | 6,958 | 3,606 | 3,352 | 93% | 37 | 14 | 23 | 156% | Distribution Switches | No | Yes |
| Meteorology - Fire Behavior Modeling | Non-RAMP | 0 | 162 | (162) | -100% | | | | | This project was completed prior to 2021, and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC-approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Elect Integrity - RAMP (Non-WMP) | Wire Correction, Switch Replacement and Underground Connector Upgrade Program | 0 | 12,735 | (12,735) | -100% | 0 | 70 | -70 | -100% | Number of Distribution circuit miles | Yes | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|-------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| RTU Modernization - RAMP Incremental - SCADA Master Modernization | Modernize Equipment | 1,608 | 3,737 | (2,129) | -57% | 20 | 25 | -5 | -19% | Number of RTUs Replaced | No | No |
| NCW New Bank 32 RAMP Incremental - Undergrounding New Circuits | Undergrounding | 0 | 770 | (770) | -100% | | | | | | No | No |
| Twin Engine Helicopter | Purchase a Twin-Engine Helicopter | 0 | 1,980 | (1,980) | -100% | | | | | | No | No |
| Tee Modernization Program | Non-RAMP | 4,584 | 2,104 | 2,480 | 118% | 148 | 85 | 63 | 75% | Set of Tees Replaced | No | Yes |
| | Proactive Dead Front Terminator Deploy | 648 | 0 | 648 | 100% | 15 | 0 | 15 | 100% | Number of Terminators | No | Yes |
| CAST Security Upgrades | Non-RAMP | 2 | 0 | 2 | 100% | | | | | Emergent project. FERC-driven project with minor associated distribution charges. | No | No |
| Datamation Secure Cabinet | Non-RAMP | 93 | 0 | 93 | 100% | | | | | This is an emergent project that was completed this year. The 2021 dollars are related to purchase and delivery of the cabinets intended to store company-issued employee cell phones. | No | No |
| Rebuilding of Skills Training Yard | Non-RAMP | 468 | 0 | 468 | 100% | | | | | Emergent project. 2021 actuals represent equipment and labor related to rebuilding the tall training yard, as well as purchase of underground switches that are being used on the field distribution system. | No | No |
| Overhead Public Safety | Overhead distribution modernization and hardening | 13,130 | 0 | 13,130 | 100% | 8 | 0 | 8 | 100% | Number of Miles of Conductor Replaced | Yes | Yes |
| Substation Security Proj under \$500K | Non-RAMP | 119 | 0 | 119 | 100% | | | | | This program is focused on upgrading physical and electronic security systems within and around SDG&E's substation assets. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The 2021 \$'s represent fence and security system upgrades done on a 12kV/4kV site. | No | No |
| Sub-Total Safety & Risk Management | | 27,611 | 25,094 | 2,517 | 10% | | | | | | | |
| Advanced Energy Storage | Non-RAMP | 7,038 | 6,284 | 754 | 12% | | | | | Two distinct storage projects are in scope and scheduled to commission in 2022. Detailed description of work completed in 2021 includes: Contracted with Owner Engineer for hydrogen storage project; Developed technical specifications for both energy storage systems in scope; Issued RFP for hydrogen storage project; Kicked off RFP development for battery energy storage project. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Borrego Microgrid 2.0 | Non-RAMP | 1 | 1,623 | (1,622) | -100% | | | | | This project was completed prior to 2021 and the variance is due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Borrego Microgrid 3.0 | Non-RAMP | 2,450 | 1,090 | 1,360 | 125% | | | | | There are multiple tracks of activities that make up this project and units are not consistent across activities. Details of work completed in 2021: Developed conceptual design for new distribution circuit and new substation bay; | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|------------|--|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| | | | | | | | | | | | | |
| | | | | | | Completed cultural survey of land and began scoping for site grading; Completed analysis and assessment of existing microgrid equipment; Finalized scope for existing microgrid equipment upgrades, including new inverters and microgrid controller; Completed scoping for test environment simulation updates. | | | | | | |
| Integrated Test Facility | Non-RAMP | 0 | 315 | (315) | -100% | | | | | This project was completed prior to 2021 and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| Sub-Total DER Integration | | 9,489 | 9,312 | 177 | 2% | | | | | | | |
| Transmission Substation Reliability | Non-RAMP | 5 | 63 | (58) | -92% | | | | | This workpaper includes activities used for replacement of miscellaneous substation equipment that has failed. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Orange County Long Range Plan - SOCRE | Non-RAMP | 5,068 | 2,588 | 2,481 | 96% | | | | | 2021 project activities included construction of the 12kV getaway duct package and circuit cutovers. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Los Coches Substation 138/69kV Rebuild | Non-RAMP | 0 | 1,400 | (1,400) | -100% | | | | | This project was completed prior to 2021 and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| TL663 Mission to Kearny Reconductor | Non-RAMP | 45 | 35 | 10 | 30% | | 2 | 0 | 0% | Topped distribution poles | No | No |
| TL600 - Reliability Pole Replacements | Non-RAMP | 741 | 0 | 741 | 100% | 8 | 0 | 8 | 100% | Number of Poles Replaced | No | Yes |
| TL674A Del Mar Reconfigure/TL666D RFS | Non-RAMP | 436 | 0 | 436 | 100% | | | | | Emergent project. 2021 actuals represent design and engineering activities. Project broke ground in early 2022. | No | No |
| TL664_668 Miramar Wood to Steel | Non-RAMP | 0 | 61 | (61) | -100% | | | | | This project was completed prior to 2021 and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| TL676 Mission to Mesa Heights Reconductor | Non-RAMP | 4 | 916 | (912) | -100% | | | | | This project was completed prior to 2021, and costs are related to the close-out of the project. The variance is due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |
| TL697 San Luis Rey Wood to Steel - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 0 | 505 | (505) | -100% | | | | | This project was completed prior to 2021 and therefore there are no actual units for 2021. There are no imputed units because the calculation used to impute authorized units at the activity level for the GRC post-test years incorporates aspects of the CPUC approved post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | | | | | |
| TL691 Avo-Mon Wood to Steel - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 0 | 46 | (46) | -100% | | | | | | No | No |
| TL6912 Wood to Steel Pole Replacement - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 0 | 62 | (62) | -100% | | | | | | No | No |
| TL695 Talega Wood to Steel - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 0 | 253 | (253) | -100% | | | | | | No | No |
| CNF - RAMP | System Hardening | 0 | 9,660 | (9,660) | -100% | | | | | | Yes | No |
| TL649 Otay-San Ysidro-Border SW Pole Repl - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 0 | 254 | (254) | -100% | | | | | | No | No |
| Fiber Optic for Relay Protect & Telecom | Non-RAMP | 7,075 | 131 | 6,944 | 5305% | 23 | 0 | 23 | 100% | Number of All-Dielectric Self-Supporting (ADSS) Miles | Yes | Yes |
| SX-PQ 230 kV Line | Non-RAMP | 2 | 0 | 2 | 100% | | | | | | No | No |
| Miguel Substation 230kV Rebuild | Non-RAMP | 16 | 0 | 16 | 100% | | | | | | No | No |
| Sub-Total Transm/FERC Driven Projects | | 13,392 | 15,974 | (2,582) | -16% | | | | | | | |

v. SDG&E Electric Distribution Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|--|
| Field Shunt Capacitors | Non-RAMP | No | Yes | Needs arise during the planning cycle and throughout the year to install capacitors to efficiently supply the reactive power with the increase of load in the distribution system. In some years there are more needs to install capacitors than the average planned installs, which was the case in 2021. |
| Substation 12kV Capacitor Upgrades | Non-RAMP | No | Yes | The capacitor banks were purchased and delivered in 2021 but not installed/energized in 2021 due to permitting delays. |
| RAMP Base - DOE Switch/Manhole Replacement | Distribution Switch Maintenance Program | Yes | Yes | The unit variance is driven by a larger number of responsive projects resulting from field inspections, and the dollar variance is due to increased costs that are in part associated with the City of San Diego's increased scoping requirements. The variance is also partly due to the calculation used to impute authorized units at the activity level, which uses the CPUC-approved post-test year mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. |
| RAMP Base - Replacement of Live Front Equipment | Live Front Transformer and Terminator Replacement | No | Yes | This program is responsive in nature, which can result in actual units being above or below the planned/average value. Terminators are replaced when the need is identified in the field as part of other scheduled underground distribution system work across SDG&E's service territory. |
| RAMP Incremental - Distributed Generation Interconnect | Power Quality Studies of DER Inter-connections | No | Yes | This program funds the interconnection of customer or developer-owned generation to SDG&E's electric distribution system as established by Electric Rule 21 and the |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|---|
| | | | | Wholesale Distribution Open Access Tariff (WDAT). No units were installed in 2021. The dollars represent pre-construction engineering work. |
| RAMP Base -- Annual Pole Reinforcement (Non-WMP) | GO165: Distribution Inspect and Repair program | Yes | Yes | This is a responsive pole replacement program driven primarily by field findings. The variances for both dollars and units are due to higher than planned/average number of jobs and an overall increase in pole replacement labor and material costs. |
| Electric Meters & Regulators | Non-RAMP | No | Yes | This program is reactive in nature. The unit variance is driven by higher-than-expected equipment failure and replacement rate of the field electric smart meters. |
| Transformers | Non-RAMP | Yes | Yes | The dollar and unit variances are primarily due to supply chain disruptions that led to a shortage in raw materials required to build the transformers. |
| Management of Overhead Distribution Service | Management of Overhead Distribution Service (Non-CMP) | No | Yes | The unit variance was primarily due to identification of a larger than usual number of GO 95 Rule 18 pole loading compliance issues that required pole replacements. |
| Management of Underground Distribution Service | Management of Underground Distribution Service | No | Yes | The unit variance is driven by a lower number than usual of underground transformer-forced outages necessitating transformer replacements. Additionally, a limited amount of proactive work was done under emergency protocols. |
| RAMP Base - Cable Replacement | Proactive cable replacement | Yes | Yes | This workpaper includes reactive and proactive cable replacement projects. The primary driver of the variances for both dollars and units is due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|---|
| RAMP Incremental - 4 kV Modernization - Distribution | Overhead distribution modernization and hardening | No | Yes | The unit variance is associated with SDG&E increasing the scope of this program to reflect the goal of accelerating replacement of obsolete equipment and bringing the system up to modern standards. The project utilizes risk-ranking methodology per 2016 RAMP and subsequent analyses to determine optimal cost-benefit and safety risk reduction. |
| Substation Mod to Support FLISR | Substation Modification to Support FLISR | No | Yes | One switchgear was installed and one breaker was replaced in 2021. This project is focused on modernizing substation equipment that will help provide safe, reliable, and quality customer service by enabling the deployment of Fault Location, Isolation, and Service Restoration (FLISR) technology. With FLISR technology, fault location, fault isolation, and customer restoration on a distribution circuit occurs automatically without the intervention of a distribution system operator. This results in safely improving the distribution circuit impact on system reliability. |
| Power Quality Program | Power Quality Monitor Deployment and Replacement | No | Yes | This project is the expansion of the substation power quality monitoring system (Power Quality (PQ) Nodes) and associated communication system. This system improvement will allow an increase of data to be collected, which will result in a more effective grid reliability assessment. Driven by reliability and capacity needs; 8 Power Quality meters were replaced in 2021. |
| Non-HFTD WFI | Non-HFTD Wireless Fault Indicator | No | Yes | A total of 15 WFIs were installed in 2021. This project provides a way to rapidly identify and locate faults on distribution circuits by installing WFIs on existing conductors. This results in reduced outage and repair times, improving reliability. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|--|
| RAMP - Substation SCADA Expansion-Distribution | Distribution Substation SCADA Expansion | No | Yes | The number of protection devices commissioned is driven by factors such as identified need and available resources, which resulted in the units installed in 2021 exceeding the planned/average annual value. |
| High Risk Switch Replacement Project | Distribution Overhead Switch Replacement Program | No | Yes | This is an emergent project driven by reliability and capacity needs. A total of 35 switches were energized in 2021. |
| Vista Fuel Cell | Non-RAMP | No | Yes | This was a reactive purchase to replace a broken fuel cell system. |
| Ramp Base - Install SCADA On-Line Capacitors | Expand and Maintain Distribution Advanced SCADA infrastructure | No | Yes | The number of devices installed in 2021 were less than the planned/average annual value, due to lower identified needs and constraints on available resources. |
| SF6 Switch Replacement | Replace with new technology | No | Yes | The unit variance is associated with SDG&E increasing the scope of this program to reflect the goal to mitigate environmental impacts and reduce greenhouse gases. |
| Elect Integrity - RAMP (Non-WMP) | Wire Correction, Switch Replacement and Underground Connector Upgrade Program | Yes | Yes | In the 2019 GRC, SDG&E revenue requirement allocated 10% to the Wildfire Mitigation Plan Overhead System Hardening efforts and 90% to non-wildfire Electric Distribution capital. Most of the projects within this description have since been broken out into other categories, such as Proactive Cable Replacement, High Risk Switch Replacement, Tee Modernization program, Overhead Public Safety Program, and Distribution Circuit Reliability. |
| Tee Modernization Program | Non-RAMP | No | Yes | The unit variance is associated with SDG&E increasing the scope of this program to meet the company's reliability goals. The variance is also due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|---|
| Proactive Dead Front Terminator Deploy | Replacement of Live Front Equipment - Proactive | No | Yes | mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. This is an emergent program driven by safety requirements. SDG&E proactively replaced 15 terminators in 2021. The new dead front terminators are deployed in strategic areas to improve distribution circuit reliability such as where large customer segments can be further sectionalized in small pad mount applications. |
| Overhead Public Safety | Overhead distribution modernization and hardening | Yes | Yes | Dollars and units represent eight miles of conductor that were replaced in 2021. Engineering analyses of historic wire down events show aged small wire conductors present the largest wire down risk and can remain energized after touching an unapproved surface due to high ground impedances. Removing long spans, antiquated wire, poor connectors and increasing detection methods can reduce likelihood of future wire down events that could remain energized. |
| TL600 - Reliability Pole Replacements | Non-RAMP | No | Yes | SDG&E replaced eight poles with associated distribution underbuild. The purpose is to improve reliability of TL600 by replacing aging wood infrastructure that has been recommended for replacement per GO95 and SDG&E standards. This project replaces a combination of wood and steel structures to correct clearance violations and structure overloads. |
| CNF - RAMP | System Hardening | Yes | No | This variance is due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. All activities included in this workpaper were forecasted to be in-service prior to the creation of SDG&E's Wildfire Mitigation Plan (WMP). All costs after the creation of the WMP memorandum account |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|---|
| Fiber Optic for Relay Protect & Telecom | Non-RAMP | Yes | Yes | (WMPMA) are reflected in the balanced program. The CPUC approved a post-test year mechanism for the SDG&E attrition years, which can result in imputed dollars when a project has been completed. As presented in the TY 2019 GRC Application, this program was intended to cover work completed in both the High Fire Threat District (HFTD) and Non - High Fire Threat District (Non-HFTD) areas. Since then, SDG&E has split the program to track the HFTD spend separately within a memorandum account along with the entire authorized spending amount. However, additional fiber optic work continues to be performed outside of the HFTD due to the importance of system protection and controls, automation, and communications in all areas of the service territory. |

vi. SDG&E Electric Distribution Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------------|--------------------------|---|---|---|
| Field Shunt Capacitors | Non-RAMP | SDG&-14-R AFC-21 WP 002090 | SDG&E-11 OR-28 to OR-29 WP 002090 | This program provides installation of overhead and underground shunt capacitors on 4kV and 12kV distribution circuits. |
| Substation 12kV Capacitor Upgrades | Non-RAMP | SDG&E-14-R AFC-24 to AFC-25 WP 082530 | SDG&E-11 OR-31 to OR-33 WP 082530 | This program is focused on replacing existing single-step capacitor banks at selected substations with banks of increased capacity and multiple steps, and adding capacitor banks |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--|--|---|---|
| | | | | where the power factor is below minimum requirements. |
| RAMP Base - DOE Switch/Manhole Replacement | Distribution Switch Maintenance Program | SDG&E-14-R AFC-47 to AFC-48 WP 002890 | SDG&E-11 OR-103 to OR-105 WP 002900 | Replace or remove underground and overhead switches, and to repair underground structures. |
| RAMP Base - Replacement of Live Front Equipment | Live Front Transformer and Terminator Replacement | SDG&E-14-R AFC-48 to AFC-49 WP 062470 | SDG&E-11 AFC-149 to AFC-150 WP 062470 | Live front equipment poses a significantly higher risk for wire entry conditions, even though the connections to distribution equipment are behind locked cabinet doors. |
| RAMP Incremental - Distributed Generation Interconnect | Power Quality Studies of DER Interconnections | SDG&E-14-R AFC-50 to AFC-51 WP 13264.001 | SDG&E-11 OR-60 to OR-61 WP 132640 | This program funds the interconnection of customer or developer owned generation to SDG&E's electric distribution system as established by Electric Rule 21 and the Wholesale Distribution Open Access Tariff (WDAT). |
| RAMP Base --- Annual Pole Reinforcement (Non-WMP) | GO165: Distribution Inspect and Repair program | SDG&E-14-R AFC-52 to AFC-53 WP 872320 | SDG&E-11 OR-62 to OR-63 WP 872320 | This program provides funding to continue the pole restoration, replacement and removal program for electric distribution poles identified through the CMP program. |
| Electric Meters & Regulators | Non-RAMP | SDG&E-14-R AFC-54 to AFC-55 WP 002020 | SDG&E-11 OR-64 to OR-64 WP 002020 | This program provides funding to install distribution meters and regulators necessary to operate and maintain SDG&E's electric distribution system. |
| Transformers | Non-RAMP | SDG&E-14-R AFC-55 to AFC-56 WP 002140 | SDG&E-11 OR-65 to OR-66 WP 002140 | This program provides the funds to purchase new line transformers. Materials are required to support the electric distribution system. |
| Management of Overhead Distribution Service | Management of Overhead Distribution Service (Non- CMP) | SDG&E-14-R AFC-78 to AFC-79 WP 002260 | SDG&E-11 OR-95 to OR-97 WP 002260 | This project provides for the reconstruction of existing overhead distribution facilities as |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|---|--|---|--|
| | | | | <p>necessary to: correct improper voltage conditions, replace overloaded overhead facilities, make emergency repairs not normally associated with restoration of service, repair or replace deteriorated or unsafe equipment not found through the 'Corrective Maintenance Program', and install fault indicators / fusing / switching equipment as necessary to maintain service reliability.</p> |
| <p>Management of Underground Distribution Service</p> | <p>Management of Underground Distribution Service</p> | <p>SDG&E-14-R AFC-79 to AFC-80 WP 002270</p> | <p>SDG&E-11 OR-97 to OR-99 WP 002270</p> | <p>This project provides for the reconstruction of existing underground distribution facilities as necessary to: correct improper voltage conditions, replace overloaded overhead facilities, make emergency repairs not normally associated with restoration of service, repair or replace deteriorated or unsafe equipment not found through the 'Corrective Maintenance Program,' and install fault indicators / fusing / switching equipment as necessary to maintain service reliability.</p> |
| <p>RAMP Base - Cable Replacement</p> | <p>Proactive cable replacement</p> | <p>SDG&E-14-R AFC-81 to AFC-82 WP 002300</p> | <p>SDG&E-11 OR-99 to OR-100 WP 002300</p> | <p>This program facilitates the replacement of underground cable that was identified to have a high probability of failure based on electric reliability circuit analysis and cable failure data.</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|---|---|---|---|
| RAMP Incremental - 4 kV Modernization - Distribution | Overhead distribution modernization and hardening | SDG&E-14-R AFC-84 to AFC-85 WP 062600 | SDG&E-11 OR-121 to OR-123 WP 172690 | This project will support construction activities on the distribution system that prepare for the removal of 4kV substations. It utilizes risk-ranking methodology per 2016 RAMP and subsequent analyses to determine optimal cost-benefit and safety risk reduction. Work generally includes overhead and underground rebuilds and reconfigurations with considerations for added operability, including sectionalizing devices and advanced protection. |
| Substation Mod to Support FLISR | Substation Modification To Support FLISR | N/A | SDG&E-11 OR-116 to OR-118 WP 172430 | This project is necessary to modernize substation equipment that will help provide safe, reliable, and quality customer service by enabling the deployment of Fault Locations, Isolation, and Restoration (FLISR) technology. With FLISR technology, fault location, fault isolation, and customer restoration on a distribution circuit occurs automatically without the intervention of a distribution system operator. This results in safely improving the distribution system reliability and PBR impacts of distribution circuits in substations. |
| Power Quality Program | Power Quality Monitor | N/A | SDG&E-11 OR-145 to OR-146 WP 942410 | The scope of work includes installing and/or upgrading PQ meters. This includes: replacing |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|---|---|---|---|
| | Deployment and Replacement | | | one PQ meter model with another; replacing voltage and current pod; potentially replacing or adjusting wiring for voltage with current pods (for sites with multiple boxes); upgrading PQ nodes and support equipment; installing field and communication systems and equipment; provide time synchronization and network connections to existing monitors. |
| Non-HFTD WFI | Non-HFTD Wireless Fault Indicator | N/A | SDG&E-11 OR-140 to OR-142 WP 202880 | This project provides a way to rapidly identify and locate faults on distribution circuits via wireless fault indicators (WFI). This will reduce outage and repair times, improving reliability. WFIs will be used to monitor distribution lines and locate faults more efficiently and accurately using LPCN communication to alert distribution system operators. These WFIs can detect faults without having a minimum continuous current on the line, allowing the installation at remote locations that have very little load. This allows operators to dispatch electric troubleshooters closer to the exact fault location to more quickly identify and isolate the fault and begin service restoration. |
| RAMP - Substation SCADA Expansion-Distribution | Distribution Substation SCADA Expansion | SDG&E-14-R AFC-90 to AFC-91 WP 112670 | SDG&E-11 OR-113 to OR-114 WP 152430 | This project includes the new installation and expansion of the SCADA system on distribution |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--|---|---|---|
| | | | | circuits through the addition of automated switches. |
| High Risk Switch Replacement Project | Distribution Overhead Switch Replacement Program | N/A | SDG&E-11 OR-118 to OR-120 WP 172610 | SDG&E has identified various data attributes that characterize high risk switches and has prioritized several switches that can be removed in the near term to avoid failure. |
| Vista Fuel Cell | Non-RAMP | N/A | N/A | Installation of a 460KW natural gas fuel cell power system. The fuel cell replaced a nonworking asset that was installed under the Sustainable Communities Program. |
| Ramp Base - Install SCADA on Line Capacitors | Expand and Maintain Distribution Advanced SCADA infrastructure | SDG&E-14-R AFC-87 to AFC-89 WP 112490 | SDG&E-11 OR-106 to OR-108 WP 112490 | The SCADA capacitors program replaces existing non-SCADA capacitors with more modern SCADA switchable capacitors. The current non-SCADA capacitors are designed to provide voltage and power factor correction for the distribution system. During a failure of a capacitor from either mechanical, electrical, or environmental overstress, an internal fault is created resulting in internal pressure and the potential to rupture the casing, which could create a potential safety hazard to employees and the public. |
| SF6 Switch Replacement | Replace with new technology | SDG&E-14-R AFC-112 to AFC-114 WP 142490 | SDG&E-11 OR-150 to OR-152 WP 142490 | The primary objective of this initiative is to reduce environmental risks associated |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description with the potential for SF6 emissions. |
|--|---|---|---|--|
| Elect Integrity - RAMP (Non-WMP) | Wire Correction, Switch Replacement and Underground Connector Upgrade Program | SDG&E-14-R AFC-117 to AFC-119 WP 162520 | N/A | This workpaper represents a collection of projects as presented in SDG&E's RAMP Report implementing safety risk reduction measures in the Electric Infrastructure Integrity (EI) risk area. Several programs addressing key infrastructure improvement projects across electric distribution, substation, and transmission may be implemented as part of this initiative to proactively address the potential for premature asset failure. |
| Tee Modernization Program | Non-RAMP | SDG&E-14-R AFC-122 to AFC-123 WP 172490 | SDG&E-11 OR-155 to OR-156 WP 172550 | Replace aging 600A Tee connectors on circuits |
| Proactive Dead Front Terminator Deploy | Replacement of Live Front Equipment - Proactive | N/A | SDG&E-11 OR-158 to OR-160 WP 192410 | The new dead front terminators (UG 3517, 3518) will be deployed in strategic areas to improve distribution circuit reliability, such as where large customer segments can be further sectionalized in small padmount applications. Funding for this program assumes a target of 15 locations each year where live front terminators currently exist. Limited cable replacements will be included in this work as directly related to making up new cable terminations. This project differs from secondary budget 6247, which is currently utilized by Electric Regional Operations (ERO) to |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|---|---|---|---|
| | | | | account for live front infrastructure removed in conjunction with other work such as cable replacements. |
| Overhead Public Safety | Overhead distribution modernization and hardening | N/A | SDG&E-11 OR-160 to OR-161 WP 202410 | This program involves proactively replacing high-risk overhead (OH) conductors prone to wire down events measured as tracked by failure rates, historic wire down events, CMP records and lack of protection (fuse or advanced) that are in proximity to the public (schools, freeways, high profile areas) that could put the public at risk of energized contact. |
| TL600 - Reliability Pole Replacements | Non-RAMP | N/A | SDG&E-11 OR-170 to OR-170 WP 121560 | The purpose is to improve reliability of TL600 by replacing aging wood infrastructure that have been recommended for replacement per GO95 and SDG&E standards. This project replaces 32 wood structures with a combination of wood and steel structures to correct clearance violations and structure overloads. |
| CNF - RAMP | System Hardening | SDG&E-14-R AFC-143 to AFC-144 WP 081650 | N/A | The project establishes a Master Special Use Permit (MSUP) to replace over 70 expired permits in the Cleveland National Forest. The project will also enhance system reliability in Fire Threat Zone and the High-Risk Fire Area of the SDG&E service territory via wood-to-steel pole conversion and other fire hardening measures. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|---|---|--|
| Fiber Optic for Relay Protect & Telecom | Non-RAMP | SDG&E-14-R AFC-142 to AFC-143 WP 071440 | SDG&E-11 OR-169 to OR-170 WP 071440 | The project will provide a self-healing network to carry multi-gigabit data on demand. This project will install Fiber Optic communication on all 138kV and above transmission lines in the next 3 years and convert major 69 kV system to fiber in 5 years for safe grid operation. It will reduce single-use telecom infrastructures. It will position SDG&E for future automation application, Condition Based Maintenance (CBM), Smart Meter (AMI) and Smart Grid. |

B. SDG&E Electric Generation

i. SDG&E Electric Generation O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|----------------------------------|---|-------------------------------------|
| Electric Generation | | 37,168 | 43,197 | (6,029) | -14% | | | | | | | |
| Generation - Plant - Admin | Non-RAMP | 270 | 399 | (129) | -32% | 1.0 | 2.1 | (1.1) | -52% | FTE | No | Yes |
| Generation Plant Miramar | Non-RAMP | 1,975 | 2,651 | (675) | -25% | 5,617 | 24,863 | (19,246) | -77% | Plant Equivalent Operating Hours | No | Yes |
| Generation Plant Miramar | Maintenance Certification and testing of existing Blackstart Resources | 4 | 23 | (19) | -81% | 0.0 | 0.1 | (0.1) | -100% | FTE | No | Yes |
| Sub-Total Generation Plant Miramar | | 1,980 | 2,674 | (694) | -26% | | | | | | No | |
| Generation Plant Palomar | Non-RAMP | 19,439 | 20,733 | (1,294) | -6% | 22,918 | 25,427 | (2,509) | -10% | Plant Equivalent Operating Hours | No | No |
| Electric Project Development | Non-RAMP | 0 | 138 | (138) | -100% | 0.0 | 0.7 | (0.7) | -100% | FTE | No | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|----------------------------------|---|-------------------------------------|
| Generation Plant Desert Star | Non-RAMP | 13,769 | 17,125 | (3,356) | -20% | 13,318 | 17,985 | (4,667) | -26% | Plant Equivalent Operating Hours | No | Yes |
| Generation Plant Cuyamaca Peak | Non-RAMP | 1,102 | 1,189 | (87) | -7% | 5,960 | 11,565 | (5,605) | -48% | Plant Equivalent Operating Hours | No | Yes |
| Generation Plant Cuyamaca Peak | Add blackstart capabilities to the southern part of the SDG&E electric system. | 12 | 23 | (11) | -48% | 0.0 | 0.1 | (0.1) | -100% | FTE | No | Yes |
| Sub-Total Generation Plant Cuyamaca Peak | | 1,114 | 1,212 | (98) | -8% | | | | | | No | |
| Resource Planning Director | Non-RAMP | 597 | 916 | (319) | -35% | 3.5 | 5.0 | (1.5) | -31% | FTE | No | Yes |

ii. SDG&E Electric Generation O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------|--|---|-------------------------------------|--|
| Generation - Plant - Admin | Non-RAMP | No | Yes | Underrun in FTEs is due to Principal Business Analyst position in 2019 GRC labor forecast not filled in 2021. |
| Generation Plant Miramar | Non-RAMP | No | Yes | Underrun in equivalent operating hours is due to Miramar Plant dispatched less in 2021 causing lower number of starts and service hours compared to the 5- year average. |
| Generation Plant Miramar | Maintenance certification and testing of existing blackstart resources | No | Yes | Underrun in FTEs for Miramar Blackstart facility is due to lower maintenance and testing and no certification performed in 2021. |
| Electric Project Development | Non-RAMP | No | Yes | Underrun in FTEs is due to Manager - Electric Project Development position in 2019 GRC labor forecast not filled in 2021. |
| Generation Plant Desert Star | Non-RAMP | No | Yes | Underrun in equivalent operating hours is due to Desert Star Plant dispatched less in 2021 causing lower number of service hours compared to the 5- Year average. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------|--|---|-------------------------------------|---|
| Generation Plant Cuyamaca Peak | Non-RAMP | No | Yes | Underrun in equivalent operating hours is due to Cuyamaca Plant dispatched less in 2021 causing lower number of starts and service hours compared to the 5- Year average. |
| Generation Plant Cuyamaca Peak | Add blackstart capabilities to the southern part of the SDG&E electric system. | No | Yes | Underrun in FTEs for Cuyamaca Peak Blackstart facility is due to lower maintenance and testing and no certification performed in 2021. |
| Resource Planning Director | Non-RAMP | No | Yes | Underrun in FTEs is due to lower than forecasted staffing levels associated with resource planning. |

iii. SDG&E Electric Generation O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|----------------------------|--|-------------------------------------|-------------------------------------|--|
| Generation - Plant - Admin | Non-RAMP | SDG&E-16 DSB-22 WP 1EG001.000 | SDG&E-14 DSB-14 WP 1EG001.000 | Generation Plant Administration includes labor for (1) Director of Generation, labor for (1) Principal Business Analyst, and associated administrative expenses. This activity provides managerial oversight, plant cost analysis and budgeting for all generating facilities. |
| Generation Plant Miramar | Non-RAMP | SDG&E-16 DSB-20 WP 1EG002.000 | SDG&E-14 DSB-11 WP 1EG002.000 | Generation Plant Miramar encompasses the operation and maintenance of (2) peaking plants at the Miramar Energy Facility. Labor costs include Supervision, Maintenance, Operations, and Engineering personnel. Non-labor costs include items such as industrial gases, water, and maintenance parts and activities. |
| Generation Plant Miramar | Maintenance certification and testing of existing blackstart Resources | SDG&E-16 DSB-20 WP 1EG002.000 | SDG&E-14 DSB-11 WP 1EG002.000 | Generation Plant Miramar encompasses the operation and maintenance of (2) peaking plants at the Miramar Energy Facility. Labor costs include Supervision, Maintenance, Operations, and Engineering personnel. Non-labor costs include items such as industrial gases, water, and maintenance parts and activities. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------|--|---------------------------------------|-------------------------------------|---|
| Electric Project Development | Non-RAMP | SDG&E-16 DSB-22 WP 1EG004.000 | N/A | Electric Project Development includes labor for (1) Manager - Electric Project Development and associated administrative expenses. This activity provides project management and business planning for existing and planned electric projects. |
| Generation Plant Desert Star | Non-RAMP | SDG&E-16 DSB-19 WP 1EG006.000 | SDG&E-14 DSB-10 WP 1EG006.000 | Generation Plant Desert Star encompasses the operation and maintenance of the Plant at the Desert Star Energy Center. Labor costs include Supervision, Maintenance, and Operational expenses. Non-labor costs include items such as industrial gases, chemicals, water, outside services, and maintenance parts and activities. |
| Generation Plant Cuyamaca Peak | Non-RAMP | SDG&E-16 DSB-2 WP 1EG007.000 | SDG&E-14 DSB-12 WP 1EG007.000 | Generation Plant Cuyamaca Peak encompasses the operation and maintenance of the Peaking Plant at the Cuyamaca Peak Energy Plant. Labor costs include Supervision, Maintenance, and Operational expenses. Non-labor costs include items such as industrial gases, demineralized water, and maintenance parts and activities. |
| Generation Plant Cuyamaca Peak | Add blackstart capabilities to the southern part of the SDG&E electric system. | SDG&E-16 DSB-2 WP 1EG007.000 | SDG&E-14 DSB-12 WP 1EG007.000 | Generation Plant Cuyamaca Peak encompasses the operation and maintenance of the Peaking Plant at the Cuyamaca Peak Energy Plant. Labor costs include Supervision, Maintenance, and Operational expenses. Non-labor costs include items such as industrial gases, demineralized water, and maintenance parts and activities. |
| Resource Planning Director | Non-RAMP | SDG&E-16 DSB-8 WP 2100-3433.000 | SDG&E-10 CAS-22 WP 1EP004.000 | Resource Planning is responsible for planning the long-term electric generation needs of SDG&E's bundled customers as well as planning for adequate resources to meet local capacity requirements of all customers. |

iv. SDG&E Electric Generation Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|-----------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Electric Generation | | 43,664 | 15,828 | 27,836 | 176% | | | | | | | |
| Generation Capital Tools & Test Eqpt. | Non-RAMP | 53 | 235 | (183) | -78% | | | | | | No | No |
| Miramar | Non-RAMP | 1,009 | 3,257 | (2,248) | -69% | | | | | | No | No |
| Palomar Plant Operational Improvements | Non-RAMP | 8,862 | 5,005 | 3,858 | 77% | | | | | | No | No |
| Desert Star Energy Ctr Oper. Enhance | Non-RAMP | 9,879 | 3,966 | 5,913 | 149% | | | | | | Yes | No |
| Cuyamaca Peak Energy Plant Oper Enhance | Non-RAMP | 281 | 402 | (121) | -30% | | | | | | No | No |
| RAMP - Incremental South Grid - CPEP | Add blackstart capabilities | 34 | 325 | (291) | -89% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--------------------------------|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | to the southern part of the SDG&E electric system | | | | | | | | | | | |
| Solar Photovoltaic Initiative | Non-RAMP | (2) | 2,638 | (2,639) | -100% | | | | | | No | No |
| Palomar Adv Gas Path Overhaul | Non-RAMP | 22,323 | 0 | 22,323 | 100% | | | | | | Yes | No |
| Palomar Green Hydrogen Systems | Non-RAMP | 1,224 | 0 | 1,224 | 100% | | | | | | No | No |

v. SDG&E Electric Generation Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------------|--------------------------|---|-------------------------------------|---|
| Desert Star Energy Ctr Oper. Enhance | Non-RAMP | Yes | No | Spend in 2021 was greater than the imputed authorized amount due to Combustion Turbine 1 (CT1) generator rotor replacement and manufacturer recommended steam turbine improvements. |
| Palomar Adv Gas Path (AGP) Overhaul | Non-RAMP | Yes | No | Spend in 2021 was greater than the imputed authorized amount due to the installation of the AGP parts. The installation of the AGP increased the power output capability of Palomar to provide an additional 23 MW of potential availability to the grid. The parts were installed in 2021 in line with the hardware change out schedule. |

vi. SDG&E Electric Generation Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|--------------------------|----------------------------------|----------------------------------|--|
| Desert Star Energy Ctr Oper. Enhance | Non-RAMP | SDG&E-16 DSB-27 CWP 000100 | SDG&E-14 DSB-14 CWP 000100 | Desert Star Energy Center Operational Enhancements encompasses capital projects that best support the safe and reliable operation of the plant. |
| Palomar Adv Gas Path Overhaul | Non-RAMP | N/A | N/A | Capital project to enhance the operating performance of the two combustion turbines at Palomar Energy Center. Upgrades included installing improved turbine materials, enhancing air and gas flow, and increasing firing temperature. |

C. SDG&E Electric Fuel and Procurement

i. SDG&E Electric Fuel and Procurement O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-----------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Electric & Fuel Procurement | | 8,644 | 9,834 | (1,190) | -12% | | | | | | | |
| Long Term Procurement | Non-RAMP | 1,777 | 2,513 | (736) | -29% | 11.0 | 15.0 | (4) | -27% | FTE | No | Yes |
| Trading & Scheduling | Non-RAMP | 1,947 | 3,357 | (1,410) | -42% | 14.8 | 20.0 | (5) | -26% | FTE | No | Yes |
| Mid and Back Office | Non-RAMP | 4,919 | 3,964 | 955 | 24% | 21.4 | 25.0 | (4) | -14% | FTE | No | No |

ii. SDG&E Electric Fuel and Procurement O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--------------------------|---|-------------------------------------|---|
| Electric & Fuel Procurement | | | | |
| Long Term Procurement | Non-RAMP | No | Yes | The variance in FTEs is primarily due to lower than forecasted staffing levels associated with Long-Term Procurement. |
| Trading & Scheduling | Non-RAMP | No | Yes | The variance in FTEs is primarily due to lower than forecasted staffing levels associated with Trading & Scheduling. |

iii. SDG&E Electric Fuel and Procurement O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|--|---|--|
| Electric & Fuel Procurement | | | | |
| Long Term Procurement | Non-RAMP | SDG&E - 12 KKH 4 to KKH 7 WP IEP001.000 | SDG&E - 10 CAS-6 to CAS-14 WP IEP001.000 | Long-Term Procurement functions include the Vice President of Energy Supply and the Origination and Portfolio Design (O&PD) department. The Vice President is responsible for providing strategic direction consistent with and complementary to SDG&E's wider mission, developing policies to strengthen and enhance energy supply functions and performance, and ensuring that all energy procurement is conducted consistent with internal requirements, Commission rules and decisions, and CAISO tariffs. O&PD is responsible for soliciting energy supplies from independent producers and utility-owned resources to meet SDG&E's long-term energy and capacity requirements. For supplies from independent producers, O&PD negotiates and executes Power Purchase Agreements (PPAs). |
| Trading & Scheduling | Non-RAMP | SDG&E - 12 KKH 7 to KKH 10 WP IEP002.000 | SDG&E - 10 CAS-14 to CAS-18 WP IEP002.000 | The Energy Supply & Dispatch (ES&D) department optimizes SDG&E's generation and contracted resources within the California Independent System Operator (CAISO) markets to serve bundled customers in a least-cost dispatch manner and consistent with Commission-approved procurement plans. Within ES&D, Electric |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|---|
| | | | | <p>Procurement & Trading performs short-term planning, procurement, and trading functions for transactions inside of a five-year time horizon. Planning activities include developing short-term forecasting methodologies, performing short-term power planning studies and regulatory analysis, and assessing changes in tariffs and regulations governing least-cost dispatch of electric and gas portfolios. Electric Procurement & Trading is also responsible for all short-term electricity transactions related to dispatchable generation, including executing all trades, purchases, hedges and sales to manage the electricity supply portfolio consistent with SDG&E's Long Term Procurement Plan (LTPP). In addition, Electric Procurement & Trading is responsible for procuring gas needed for dispatchable generation and for performing gas scheduling on the electronic bulletin boards of the interstate and intrastate pipelines it uses to deliver fuel to its gas-fired resources, including SDG&E-owned resources and contracts for tolling resources.</p> |

iv. SDG&E Electric Fuel and Procurement Capital Variances

The Electric Fuel and Procurement witness did not sponsor any capital costs in the TY 2019 GRC.

2. SDG&E GAS

A. SDG&E Gas Distribution

i. SDG&E Gas Distribution O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| Gas Distribution | | | | | | | | | | | | |
| | | 36,414 | 33,112 | 3,303 | 10% | | | | | | | |
| Field O&M - Other Services | Non-RAMP | 216 | 230 | (13) | -6% | | | | | This consists of miscellaneous expenses associated with Gas Distribution field operations that are not captured in other workgroups. Activities include inspecting and repairing customer meters, house regulators and house lines, and providing patrolling and other support to Transmission facilities and pipelines. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Field O&M - Leak Survey | Maintenance | 2,175 | 1,871 | 305 | 16% | 805 | | | | The number of inspections and surveys on an annual basis vary by type of pipe, pressure and location. As such, it is infeasible to calculate a single imputed unit. | No | No |
| Field O&M - Leak Survey | Employee, Contractor, and Public Safety | 269 | 231 | 38 | 16% | 99 | | | | The number of inspections and surveys on an annual basis vary by type of pipe, pressure and location. As such, it is infeasible to calculate a single imputed unit. | No | No |
| Sub-Total Field O&M - Leak Survey | | 2,444 | 2,101 | 343 | 16% | | | | | | No | |
| Field O&M - Locate & Mark | Training, Locate & Mark Activities Prevention and Improvements | 7,112 | 4,060 | 3,052 | 75% | 151,106 | | | | The variety of drivers that influence the number of tickets transmitted each year makes it infeasible to calculate a single imputed unit. The number of tickets transmitted is beyond the control of SDG&E. | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|----------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|--|-----------------|-----------------|---|-------------------------------------|
| Field O&M - Main Maintenance | Non-RAMP | 1,900 | 2,469 | (569) | -23% | 2,090 | | The variety, scope, and duration of work for main maintenance (moving, lowering, raising gas mains, vaults, valves, and related structures) makes it infeasible to calculate a single imputed unit. | | Non-RAMP Orders | Yes | No |
| Field O&M - Main Maintenance | Safety Policies & Programs | 1,602 | 1,421 | 181 | 13% | 162 | | The variety, scope, and duration of work for main maintenance (investigating and repairing leaks) makes it infeasible to calculate a single imputed unit. | | Leaks Repaired | No | No |
| Field O&M - Main Maintenance | Emergent RAMP (GED) | 1,017 | 0 | 1,017 | 100% | 391 | 0 | 391 | 100% | Responses | Yes | Yes |
| Sub-Total Field O&M - Main Maintenance | | 4,519 | 3,890 | 629 | 16% | | | | | | No | |
| Field O&M - Service Maintenance | Non-RAMP | 795 | 2,130 | (1,335) | -63% | 1,460 | | The variety, scope, and duration of work for service maintenance (moving, lowering, raising gas mains, vaults, valves, and related structures) makes it infeasible to calculate a single imputed unit. | | Work Orders | Yes | No |
| Field O&M - Service Maintenance | Emergent RAMP (GED) | 1,014 | 0 | 1,014 | 100% | 1,062 | 0 | 1,062 | 100% | Responses | Yes | Yes |
| Field O&M - Service Maintenance | Emergent Leak Repair | 1,557 | 0 | 1,557 | 100% | 618 | 0 | 618 | 100% | Leaks Repaired | Yes | Yes |
| Sub-Total Field O&M - Service Maintenance | | 3,366 | 2,130 | 1,236 | 58% | | | | | | Yes | |
| Field O&M - Tools Fittings & Materials | Non-RAMP | 1,047 | 1,141 | (95) | -8% | | | Included in this category are materials used and expenses necessary for small tools, small pipe fittings, miscellaneous pipeline materials, and miscellaneous installation materials used during construction and maintenance activities and those held in inventory as vehicle truck stock. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No |
| Field O&M - Tools Fittings & Materials | Emergent RAMP PPE | 266 | 0 | 266 | 100% | | | Included in this category are materials used and expenses necessary for Personal Protective Equipment (PPE) used during construction and maintenance activities and those held in inventory as vehicle truck stock. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No |
| Sub-Total Field O&M - Tools Fittings & Materials | | 1,313 | 1,141 | 171 | 15% | | | | | | No | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|----------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|--|-----------------|--------------------------------|---|-------------------------------------|
| Field O&M - Electric Support | Non-RAMP | 410 | 482 | (72) | -15% | 673 | | The variety and scope of work for electric support (Gas Crew and Street Repair support primarily their Corrective Maintenance Program, the QC Repairs and Inspection Program, the restoration of outage, and transformer change outs) makes it infeasible to calculate a single imputed unit. | | Work Orders | No | No |
| Field O&M - Supervision & Training | Non-RAMP | 3,609 | 1,878 | 1,732 | 92% | | | The activities in this item include the supervision and management in the operating districts, training expenses of the employees in the districts, supplies, telephone expenses, mileage expenses, employee uniforms, etc. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No |
| Field O&M - Supervision & Training | Safety Policies & Programs | 113 | 2,139 | (2,026) | -95% | 21 | 21 | 0 | 0% | Internal Traffic Control Crews | Yes | No |
| Field O&M - Supervision & Training | Improvements | 1,167 | 364 | 803 | 221% | 583 | | The variety and scope of work for Field O&M - Supervision and Training-Improvements (Annual Environmental, Safety, Compliance Management Program/Operator Qualification, welding school) make it infeasible to identify a single imputed unit. | | Headcount Trained | Yes | No |
| Sub-Total Field O&M - Supervision & Training | | 4,889 | 4,381 | 508 | 12% | | | | | | No | |
| Asset Management | Non-RAMP | 980 | 1,940 | (960) | -49% | | | These activities include overheads representing time spent by personnel to support the technical office associated with identifying construction design requirements. Examples of work include evaluating pressure specifications, providing project drawings, and identifying material selection. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No |
| Asset Management | Maintenance | 0 | 198 | (198) | -100% | 0 | | This activity is outside of the control of SDG&E, which makes it infeasible to identify a single imputed unit. | | Conflict checks performed | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|-----------------|--|---|-------------------------------------|
| Asset Management | Operations | 90 | 77 | 13 | 16% | 158 | | | Standards Reviewed | No | No |
| Asset Management | Coat or remove affected buried piping in vaults | 0 | 247 | (247) | -100% | 0 | | | Projects Reviewed | No | No |
| Sub-Total Field O&M - Asset Management | | 1,070 | 2,462 | (1,392) | -57% | | | | | Yes | |
| Measurement & Regulation | Non-RAMP | 2,396 | 2,067 | 329 | 16% | 1,056 | | | Non-RAMP work orders related to Meter changes and Electronic Pressure Monitor (EPM) maintenance | No | No |
| Measurement & Regulation | Scheduled monitoring and survey activities | 3,070 | 2,732 | 338 | 12% | 4,471 | | | Compliance Components Maintained | No | No |
| Sub-Total Field O&M - Measurement & Regulation | | 5,466 | 4,799 | 667 | 14% | | | | | No | |
| Cathodic Protection | Requirements for Corrosion Control | 2,279 | 2,612 | (332) | -13% | 23,272 | | | CP Reads | No | No |
| Operations Management & Training | Non-RAMP | 1,919 | 2,998 | (1,079) | -36% | | | | The activities of this workpaper include expenses for leadership-based training of personnel in the Gas Technical Services, Gas Operations, and Gas Distribution groups. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|-------------|-------------------|--|---------------|-----------------|----------------------------------|---|-------------------------------------|
| Operations Management & Training | Qualifications of Pipeline Personnel | 519 | 738 | (219) | -30% | 389 | The continuous fluctuation in Gas Distribution workforce as a result of promotional positions to other departments in the company make it infeasible to identify a single imputed unit. | | | Students Operator Qualifications | No | No |
| Operations Management & Training | Operations #1 | 24 | 102 | (78) | -77% | 3 | The number of Locate & Mark (LM) tickets transmitted varies on an annual basis. It is therefore infeasible to identify a single imputed unit. | | | L&M Inspectors | No | No |
| Operations Management & Training | Operations #2 | 61 | 77 | (16) | -21% | 2,586 | This activity includes inspection of installed assets, welding/bonding procedures, material verification, gas standards and other construction activities of the capital investments performed above. There were no imputed authorized units included in the 2019 GRC. | | | New Construction Inspections | No | No |
| Operations Management & Training | Mandatory employee refresher training programs | 807 | 908 | (101) | -11% | 583 | The continuous fluctuation in Gas Distribution workforce as a result of promotional positions to other departments in the company make it infeasible to identify a single imputed unit. | | | Headcount Trained | No | No |
| Sub-Total Operations Management & Training | | 3,330 | 4,824 | (1,494) | -31% | | | | | | Yes | |

ii. SDG&E Gas Distribution O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---------------------------------|--|---|-------------------------------------|--|
| Field O&M - Locate & Mark | Training, Locate & Mark Activities Prevention and Improvements | Yes | No | The cost increase variance is primarily attributed to the business model change in Gas Distribution, which shifted the Locate and Mark (LM) function away from the high use of external resources to 100% internal SDG&E resources along with growth in ticket volume. The transition was made to improve the quality and efficiency of the LM function through increased oversight, control and higher internal resource competency that ensures compliance with mandated California Government Code 4216 - Dig Alert requirements. |
| Field O&M - Main Maintenance | Non-RAMP | Yes | No | The variance for this work activity was due to costs in 2021 being split over this work category and the emergent RAMP mitigation Gas Emergency Department (GED). |
| Field O&M - Main Maintenance | Emergent RAMP (GED) | Yes | Yes | The variance for this work activity is due to this being an emergent RAMP activity GED. The GED was established to improve gas emergency response time. This RAMP mitigation is now included in the 2024 GRC application. |
| Field O&M - Service Maintenance | Non-RAMP | Yes | No | The variance for this work activity was due to costs in 2021 being split over this work category, the emergent RAMP mitigation Leak Repair - Service Maintenance, and the emergent RAMP mitigation GED. |
| Field O&M - Service Maintenance | Emergent RAMP (GED) | Yes | Yes | The variance for this work activity is due to this being an emergent RAMP activity GED. This RAMP mitigation is now included in the 2024 GRC application. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------------|----------------------------|---|-------------------------------------|---|
| Field O&M - Service Maintenance | Emergent Leak Repair | Yes | Yes | The variance for this work activity is due to this being an emergent RAMP mitigation (Leak Repair - Service Maintenance). Service leak evaluation and repair work is generally completed to mitigate risks associated with hazards to public safety, and to address infrastructure condition, and material degradation. This RAMP mitigation is now included in the 2024 GRC application. |
| Field O&M - Supervision & Training | Non-RAMP | Yes | No | This cost variance was caused by additional training expenses, supervision, and support resulting from the continued expansion and implementation of the Operator Qualification Program for Gas Operations, LM personnel required to meet the commitment of 100% internal LM function, and the training and onboarding of additional field personnel required for the GED and to meet the increase of capital work approved in the TY 2019 GRC. |
| Field O&M - Supervision & Training | Safety Policies & Programs | Yes | No | The variance is due to the risk mitigation of traffic control being spread over the respective compliance O&M cost groups rather than collected here in one expense location. |
| Field O&M - Supervision & Training | Improvements | Yes | No | The cost variance is caused by the expense of the continuous on-boarding and training of Gas Operations personnel resulting from employee turnover, where employees move to different positions within the company; and an additional contribution to the variance was the continuous expansion and implementation of the Operator Qualification Program for Gas Distribution. |
| Asset Management | Non-RAMP | Yes | No | This non-RAMP variance was a result of resources allocated in the Gas Geographic Information System & Services group from O&M to capital to align with the O&M /Capital split of projects completed in the field. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|----------------------------------|--------------------------|---|-------------------------------------|--|
| Operations Management & Training | Non-RAMP | Yes | No | The variance is due to shifting year 2021 expense to the related Field O&M Supervision & Training Non-RAMP sub workpaper to support training expense of our LM business model shift and emergent GED. Refer to the Field O&M Supervision & Training Non-RAMP variance explanation. |

iii. SDG&E Gas Distribution O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------|--|---|---|---|
| Field O&M - Locate & Mark | Training, Locate & Mark Activities Prevention and Improvements | SDG&E-04-R GOM-36 to GOM-39 WP 1GD000.002 | SDG&E-04 LPK-32 to LPK-35 WP 1GD002 | Locate and Mark is the process mandated by 49 CFR 192.614 (Damage Prevention Program) and the California One Call Law (Government Code section 4216), where the owner of underground facilities, when notified by the Underground Service Alert One-Call Center of a planned excavation, must respond within two working days and mark the location of those underground facilities that are in conflict with the planned excavations. |
| Field O&M - Main Maintenance | Non-RAMP | SDG&E-04-R GOM-39 to GOM-41 WP 1GD000.003 | SDG&E-04 LPK-36 to LPK-39 WP 1GD003 | This workpaper is in scope of the report because locate and mark activities, as described, are designed to mitigate damage by third party excavators that can interrupt gas service and pose a risk to public and employee safety. Main maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this workgroup is designed to meet federal (49 C.F.R. §192) and state (CPUC General Order 112-F) pipeline safety regulations and to extend the life of distribution main pipelines and related infrastructure. Main |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------|--------------------------|---|---|---|
| | | | | <p>maintenance work primarily comprises labor and non-labor expenses associated with investigating and repairing leaks in distribution mains as well as moving, lowering, and raising short sections of gas distribution mains, vaults, valves, and related structures.</p> |
| Field O&M - Main Maintenance | Emergent RAMP (GED) | N/A | SDG&E-04 LPK-36 to LPK-39 WP IGD003 | <p>Main maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this workgroup is designed to meet federal (49 C.F.R. §192) and state (CPUC General Order 112-F) pipeline safety regulations and to extend the life of distribution main pipelines and related infrastructure. Main maintenance work primarily comprises labor and non-labor expenses associated with investigating and repairing leaks in distribution mains as well as moving, lowering, and raising short sections of gas distribution mains, vaults, valves, and related structures.</p> |
| Field O&M - Service Maintenance | Non-RAMP | SDG&E-04-R GOM-41 to GOM-44 WP IGD000.004 | SDG&E-04 LPK-40 to LPK-44 WP IGD004 | <p>Service maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this workgroup is designed to meet federal (49 C.F.R. §192) and state (CPUC General Order 112-F) pipeline safety regulations and to extend the life of distribution service pipelines and related infrastructure. Service maintenance work primarily comprises labor and non-labor expenses associated with investigating and repairing leaks in distribution services, changing service valves, checking the condition of coating at the MSA, testing service pipe for leaks, inspecting and testing service pipe after repairs have been made, and installing, maintaining, and removing temporary feeds. Also included in this subgroup are expenses for moving, lowering, and raising sections of distribution services. Rearranging and changing the location of an existing service may be required due to alterations in buildings or grounds and municipal improvements such as street widening or sewer and water system work.</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------|--------------------------|---|---|--|
| Field O&M - Service Maintenance | Emergent RAMP (GED) | N/A | SDG&E-04 LPK-40 to LPK-44 WP 1GD004 | Service maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this subgroup is designed to meet federal (49 C.F.R. §192) and state (CPUC General Order 112-F) pipeline safety regulations and to extend the life of distribution service pipelines and related infrastructure. Service maintenance work primarily comprises labor and non-labor expenses associated with investigating and repairing leaks in distribution services, changing service valves, checking the condition of coating at the MSA, testing service pipe for leaks, inspecting and testing service pipe after repairs have been made, and installing, maintaining and removing temporary feeds. Also included in this subgroup are expenses for moving, lowering, and raising sections of distribution services. Rearranging and changing the location of an existing service may be required due to alterations in buildings or grounds and municipal improvements such as street widening or sewer and water system work. |
| Field O&M - Service Maintenance | Emergent Leak Repair | SDG&E-04-R GOM-41 to GOM-44 WP 1GD000.004 | SDG&E-04 LPK-40 to LPK-44 WP 1GD004 | Service maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this subgroup is designed to meet federal (49 C.F.R. §192) and state (CPUC General Order 112-F) pipeline safety regulations and to extend the life of distribution service pipelines and related infrastructure. Service maintenance work primarily comprises labor and non-labor expenses associated with investigating and repairing leaks in distribution services, changing service valves, checking the condition of coating at the MSA, testing service pipe for leaks, inspecting and testing service pipe after repairs have been made, and installing, maintaining and removing temporary feeds. Also included in this subgroup are expenses for moving, lowering, and raising sections of distribution services. Rearranging and changing the location of an existing service may be required due to alterations in buildings or grounds, and |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------------|----------------------------|---|---|--|
| | | | | municipal improvements such as street widening or sewer and water system work. |
| Field O&M - Supervision & Training | Non-RAMP | SDG&E-04-R GOM-47 to GOM-50 WP 1GD000.007 | SDG&E-04 LPK-62 to LPK-68 WP 1GD010 | Supervision and Training includes employee field skills training, field supervision and management, and miscellaneous expenses related to SDG&E's gas operations. This category includes costs for activities designed to mitigate employee safety risks. |
| Field O&M - Supervision & Training | Safety Policies & Programs | SDG&E-04-R GOM-47 to GOM-50 WP 1GD000.007 | N/A | Supervision and Training includes employee field skills training, field supervision and management, and miscellaneous expenses related to SDG&E's gas operations. This category includes costs for activities designed to mitigate employee safety risks. |
| Field O&M - Supervision & Training | Improvements | SDG&E-04-R GOM-47 to GOM-50 WP 1GD000.007 | SDG&E-04 LPK-62 to LPK-68 WP 1GD010 | Supervision and Training includes employee field skills training, field supervision and management, and miscellaneous expenses related to SDG&E's gas operations. This category includes costs for activities designed to mitigate employee safety risks. |
| Asset Management | Non-RAMP | SDG&E-04-R GOM-57 to GOM-62 WP 1GD001.000 | SDG&E-04 LPK-56 to LPK-61 WP 1GD009 | Asset Management is the evaluation of the condition of the gas distribution system. This includes maintaining asset records, identifying corrective maintenance solutions, and coordinating with field personnel on completion and recording of O&M activities. This workpaper is in scope of the report because the maintenance of gas distribution system records is a critical risk mitigation measure designed to mitigate hazards to public and employee safety, infrastructure integrity, and to the reliable delivery of natural gas to SDG&E customers. |
| Operations Management & Training | Non-RAMP | SDG&E-04-R GOM-62 to GOM-68 WP 1GD004.000 | SDG&E-04 LPK-62 to LPK-68 WP 1GD010 | Operations Management & Training includes leadership and operations support providing vision and guidance to the organization responsible for gas distribution, maintaining distribution construction standards; evaluating new field technologies, and assisting with field training and managing the Operator Qualification program. |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|--|-----------------|-----------------------------|---|-------------------------------------|
| | | | | | | | | identify a single imputed unit. The number and timing of addition, relocation, or retirements are based on factors outside the control of SDG&E. | | | | |
| System Minor Additions, Relocations, & Retirements - RAMP | Locate and Mark | 3 | 309 | (307) | -99% | 751 | | The variety and scope of work for each system addition, relocation, or retirement (customer-driven tickets) project makes it infeasible to identify a single imputed unit. The number and timing of addition, relocation, or retirements are based on factors outside the control of SDG&E. | | Tickets | No | No |
| Sub-Total System Minor Additions, Relocations, & Retirements | | 5,412 | 4,705 | 707 | 15% | | | | | | No | |
| Meters and Regulator Materials | Non-RAMP | 8,375 | 7,568 | 806 | 11% | 66,744 | | This activity involves buying various quantities of four different types of meters and/or regulators. The costs and quantity of these different meters/regulators makes it infeasible to identify a single imputed unit. | | Meters/regulators purchased | No | No |
| Pressure Betterment | Non-RAMP | 2,024 | 2,004 | 20 | 1% | 11 | | This activity includes reinforcement and pressure betterment projects required to remedy low-pressure situations and/or improve reliability to large single feed areas that are usually initiated due to new loads being added to the system. The number and scope of projects is dependent on number, type, location, and timing of new loads, and these factors are outside of SDG&E's control. The variety of work activities in this category makes it infeasible to identify a single imputed unit. | | Projects | No | No |
| Easements | Non-RAMP | 3 | 43 | (40) | -93% | 1 | | This activity involves work required to perform necessary surveys and mapping functions, document research, document preparation, and negotiations for the acquisition of easements to allow the installation of gas distribution facilities on private property or public lands. The variety of work activities in this | | Projects | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | 2021 | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--------------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---|-----------------|-----------------|---|-------------------------------------|
| | | | | | | | | Units | % Unit Variance | | | |
| | | | | | | | | category makes it infeasible to identify a single imputed unit. | | | | |
| Franchise Relocations | Non-RAMP | 6,570 | 8,303 | (1,733) | -21% | 58 | | This activity covers the relocation of existing gas distribution facilities when necessitated by public improvements as required by the company's franchise agreements to clear municipal or other improvements. The number and scope of projects are based on factors outside of SDG&E's control and the number of projects forecasted did not materialize. The variety of work activities in this category makes it infeasible to identify a single imputed unit. | | Projects | Yes | No |
| Tools and Equipment | Non-RAMP | 3,469 | 1,957 | 1,512 | 77% | 642 | | The need for tools and equipment is influenced by the age and condition of the tools, technology, ergonomics, and changes in company gas standards and procedures, which make it infeasible to identify a single imputed unit. | | Tools | Yes | No |
| Tools and Equipment | Training props | 190 | 599 | (408) | -68% | 175 | | This activity involves the construction of training props to simulate real-world scenarios as a means to qualify personnel. Because the number and type of props constructed depends on the scenarios being simulated and the quality of any existing props, it is infeasible to identify a single imputed unit. | | Tools | No | No |
| Sub-Total Tools and Equipment | | | | | | | | | | | | |
| | | 3,660 | 2,556 | 1,104 | 43% | | | The variety and scope of work of each capital investment in this workpaper makes it infeasible to identify a single imputed unit. This workpaper encompasses isolation valve installations/replacements, K-reg removals, installations of barricades to protect Meter set assembly (MSAs) from vehicular traffic, and electronic pressure monitoring device installations and repairs. | | | Yes | |
| Code Compliance | RAMP | 3,197 | 1,220 | 1,977 | 162% | 1888 | | | | Projects | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | 2021 Unit Variance | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|-------------------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|--|-----------------|-----------------|---|-------------------------------------|
| | | | | | | | | Unit Variance | % Unit Variance | | | |
| Replacements of Mains and Services - RAMP1 | Early Vintage Steel Replacement | 14,712 | 3,343 | 11,369 | 340% | 47133 | | The timing of individual projects is based on a number of factors including the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. Therefore, it is infeasible to identify a single imputed unit. | | Feet Replaced | Yes | No |
| Replacements of Mains and Services - RAMP2 | Early Vintage Threaded Main Removal | 13,682 | 3,356 | 10,326 | 308% | 42648 | | The timing of individual projects is based on a number of factors including the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. Therefore, it is infeasible to identify a single imputed unit. | | Feet Replaced | Yes | No |
| Replacements of Mains and Services - RAMP3 | Pipeline Observations (Standby) | 0 | 9 | (9) | -100% | 0 | | The timing of individual projects is based on a number of factors including the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. Therefore, it is infeasible to identify a single imputed unit. This work is not separately tracked, but rather is charged directly to the project, where applicable. | | Projects | No | No |
| Replacements of Mains and Services - RAMP4 | Leak Repair | 10,083 | 1,188 | 8,894 | 749% | 508 | | The timing of individual projects is based on a number of factors including customer or leak survey reporting of leaks, the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. Therefore, it is infeasible to identify a single imputed unit. | | Projects | Yes | No |
| Replacements of Mains and Services - RAMP5 | EPOCH Planned Replacement of Pipe | 4,208 | 1,528 | 2,679 | 175% | 28183 | | The timing of individual projects is based on a number of factors including customer or leak survey reporting of leaks, the need for review of operating conditions, detailed planning requirements, | | Feet Replaced | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | 2021 Unit Variance | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|--------------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | Units | % Unit Variance | | | |
| Sub-Total Replacements of Mains and Services | | 42,685 | 9,425 | 33,259 | 353% | | | | | | Yes | |
| Cathodic Protection | Non-RAMP | 4,410 | 1,550 | 2,859 | 184% | 52 | | | | Projects | Yes | No |
| Regulator Station Improvements and Other | RAMP | 645 | 399 | 246 | 62% | 7 | | | | Projects | No | No |
| Regulator Station Improvements and Other - RAMP1 | Improvements | 3,935 | 2,796 | 1,139 | 41% | 27 | | | | Couplings removed | Yes | No |
| Regulator Station Improvements and Other - RAMP2 | Improvements | 3,668 | 3,298 | 371 | 11% | 55 | | | | Oil drips removed | No | No |
| Regulator Station Improvements and Other - RAMP3 | Improvements | 2,925 | 1,398 | 1,527 | 109% | 14 | | | | Buried vault pipes repaired or replaced | Yes | No |
| Regulator Station Improvements and Other - RAMP4 | Improvements | 893 | 614 | 279 | 45% | 5 | | | | HP/MP valves removed. | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | 2021 | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|-------|-------|---|---|-------------------------------------|
| | | | | | | | | Units | Units | | | |
| Sub-Total Regulator Station Improvements and Other | | | | | | | | | | | | |
| | | 12,067 | 8,505 | 3,562 | 42% | | | | | | Yes | |
| GD Local Engineering Pool | Non-RAMP | 13,746 | 1,498 | 12,248 | 818% | | | | | | Yes | No |
| | Local Engineering overhead costs associated with large RAMP proposed projects | 4,729 | 3,920 | 809 | 21% | | | | | | No | No |
| GD Local Engineering Pool | Improvements to Catholic Protection reliability | 192 | 1,216 | (1,024) | -84% | | | | | | Yes | No |
| GD Local Engineering Pool | Safety policies and Programs | 91 | 2,732 | (2,641) | -97% | | | | | | Yes | No |
| GD Local Engineering Pool | Gas Handling Plans RAMP | 540 | 0 | 540 | 100% | 430 | 0 | 430 | 100% | Number of Gas Handling Plans developed. | No | Yes |
| GD Local Engineering Pool | RAMP Geographic Information System Group | 1,533 | 0 | 1,533 | 100% | 3052 | 0 | 3,052 | 100% | Number of work orders posted | Yes | Yes |
| GD Local Engineering Pool | Gas standards review | 70 | 46 | 24 | 53% | 158 | | | | This activity involves standards reviewed at different review cycles based on industry requirements, regulation changes, and equipment and tool technology changes. There were no imputed authorized units included in the TY 2019 GRC. | No | No |
| GD Local Engineering Pool | Operational QA/QC | 2,865 | 258 | 2,607 | 1010% | 2,586 | | | | This activity includes inspection of installed assets, welding/bonding procedures, material verification, gas standards and other construction activities supporting the capital investments performed | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Sub-Total GD Local Engineering Pool | | 23,767 | 9,669 | 14,097 | 146% | | | | | | Yes | |
| Cathodic Protection System Enhancement – RAMP | Cathodic Protection | 2,919 | 2,385 | 534 | 22% | 26 | | | | Projects | No | No |
| Gas Department Overhead Pool | Non-RAMP | 8,099 | 0 | 8,099 | 100% | | | | | The activities included in this non-RAMP Department Overhead pool consists of expenses for supervision and administration of gas crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects, or the Construction and Operation (C&O) districts as a whole. Certain costs are incurred by capital projects that originate from central activities, which are subsequently distributed to those capital projects. These central activity costs are also called 'pooled' or 'overhead' costs. | Yes | No |
| Gas Contract Admin Pool | Non-RAMP | 8,719 | 0 | 8,719 | 100% | | | | | This activity included in this non-RAMP Contract Administration (CA) pool consists of those expenses necessary for the administration of projects that are performed by contractors for SDG&E. The expenses to this pool consist of labor for Contract Administrators and support personnel, as well as the associated non-labor support costs such as office and field supplies. This pool includes the costs that will be allocated to contracted work. | Yes | No |

v. SDG&E Gas Distribution Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|---|---|-------------------------------------|--|
| Gas Distribution | | | | |
| New Business | New Business: Field and Public Safety - CSF Orders related to Public Safety | Yes | Yes | The variance for this work activity is due to this being an emergent RAMP activity (Field and Public Safety - purging of customer houselines). Purge orders are issued to promote customer safety by confirming customer-owned gas houselines are safe and leak-free and odorant is readily detectable. This RAMP mitigation is now included in the TY 2024 GRC application. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|-------------------------------------|---|-------------------------------------|--|
| System Minor Additions, Relocations, & Retirements | Non-RAMP | Yes | No | This activity covers the relocation of existing gas distribution facilities associated with providing gas service to customers. This variance is due to the number and timing of 2021 actual relocation requests on gas pipeline projects being based on factors outside the control of SDG&E. |
| Franchise Relocations | Non-RAMP | Yes | No | This activity covers the relocation of existing gas distribution facilities when necessitated by public improvements, as required by the company's franchise agreements to clear municipal or other improvements. The scope of projects is based on factors outside of SDG&E's control, and the number of projects anticipated did not materialize. |
| Tools and Equipment | Non-RAMP | Yes | No | Variance was primarily driven by increased requirement of purchases of equipment in support of Air Emission and Safety best practices to include: 1) Purchase of Zero Emission equipment to replace small off-road engines to align with state and company emission goals in support of AB1346. 2) Purchase of trench ventilation equipment and gas detectors to ensure compliance with California Occupational Safety and Health Administration (OSHA) excavation standards. |
| Code Compliance | RAMP | Yes | No | The cost of compliance related activities was higher than forecasted due to an increase in capital investment to replace inoperable valves, barrier post installations and unforeseen costs incurred due to municipality requirements requiring increased street repaving and working hour restrictions, as well as start/stop delays due to COVID-19 social distancing and quarantine protocols. |
| Replacements of Mains and Services - RAMP1 | Early Vintage Steel Replacement | Yes | No | Work for this program began after the TY 2019 GRC Decision and has varied work schedules over multiple years and will be managed over the GRC cycle. Therefore, individual year expenditures may vary from the annual imputed authorized amounts. Projects will be managed based on the timing of individual projects and factors, including the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. |
| Replacements of Mains and Services - RAMP2 | Early Vintage Threaded Main Removal | Yes | No | Work for this program began after the TY 2019 GRC Decision and has varied work schedules over multiple years and will be managed over the GRC cycle. Therefore, individual year expenditures may vary from the annual imputed authorized amounts. Projects will be managed based on the timing of individual projects and factors, including the need for |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|-----------------------------------|---|-------------------------------------|---|
| Replacements of Mains and Services - RAMP4 | Leak Repair | Yes | No | review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. The variance is due to higher than forecasted number of leak repairs and an increased cost per repair due to municipality constraints, enhanced design and higher construction, permit and paving costs. |
| Replacements of Mains and Services - RAMP5 | EPOCH Planned Replacement of Pipe | Yes | No | Work for this program began after the TY 2019 GRC Decision, with varied work schedules over multiple years, and will be managed over the GRC cycle. Therefore, individual year expenditures may vary from the annual imputed authorized amounts. Projects will be managed based on the timing of individual projects and factors, including customer or leak survey reporting of leaks, the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. |
| Cathodic Protection | Non-RAMP | Yes | No | The variance is due to installation of higher than forecasted number of new and renewed cathodic protection (CP) stations and an increased cost per station due to municipality constraints, environmental requirements, enhanced design, and higher construction, permit and paving costs. |
| Regulator Station Improvements and Other - RAMP1 | Improvements | Yes | No | Work for this program began after the TY 2019 GRC Decision, with varied work schedules over multiple years, and will be managed over the GRC cycle. Therefore, individual year expenditures may vary from the annual imputed authorized amounts. Projects will be managed based on the variety and scope of work for removal of each dresser coupling project, along with crew availability and the process to acquire municipality permits. |
| Regulator Station Improvements and Other - RAMP3 | Improvements | Yes | No | Work for this program began after the TY 2019 GRC Decision, with varied work schedules over multiple years, and will be managed over the GRC cycle. Therefore, individual year expenditures may vary from the annual imputed authorized amounts. Projects will be managed based on the variety and scope of work for removal of each pipeline buried in vaults, along with crew availability and the process to acquire municipality permits. |
| GD Local Engineering Pool | Non-RAMP | Yes | No | This variance is due to higher than projected project management, engineering, design, and drafting cost for both internal and external resources to support capital investment. Additional municipality |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------|---|---|-------------------------------------|--|
| | | | | requirements and post-design changes contributed to additional costs and construction delays. |
| GD Local Engineering Pool | Improvements to Cathodic Protection reliability | Yes | No | To streamline resources between SoCalGas and SDG&E, SDG&E installed Real Time Monitoring Units to provide real time data on each rectifier station, is canceling algorithm model development, and is instead using the new quantitative risk assessment that is being developed by SoCalGas. |
| GD Local Engineering Pool | Safety policies and Programs | Yes | No | This variance is due to the risk mitigation of traffic control being spread over the respective Capital projects rather than collected in this workpaper. |
| GD Local Engineering Pool | Gas Handling Plans RAMP | No | Yes | Emergent RAMP - Gas Handling Plans are developed, reviewed and approved by design, engineering and construction supervisory personnel and is a site-specific document with detailed procedures and graphical flow depictions describing the step-by-step processes, to "handle" the diversion of gas flow internal to the piping system. Variance is associated with no imputed authorized dollars or units for this emergent RAMP activity. |
| GD Local Engineering Pool | RAMP Geographic Information System Group | Yes | Yes | Emergent RAMP - Gas Geographic Information System (GGIS) Group department in Gas Distribution for pipeline records management. Variance is associated with no imputed authorized dollars or units for this emergent RAMP activity. |
| GD Local Engineering Pool | Operational QA/QC | Yes | No | This activity involves the inspection and establishing material traceability to maintain code compliance associated with new construction projects. The variance is due to incremental requirements for Capital QA/QC costs not requested in the TY 2019 GRC. |
| Gas Department Overhead Pool | Non-RAMP | Yes | No | This variance is due to the creation of these pools in 2021. Variance is a result of no imputed authorized dollars established for this emergent activity. |
| Gas Contract Admin Pool | Non-RAMP | Yes | No | This variance is due to the creation of these pools in 2021. Variance is a result of no imputed authorized dollars established for this emergent activity. |

vi. SDG&E Gas Distribution Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|---|---|---|--|
| Gas Distribution | | | | |
| New Business | New Business: Field and Public Safety - CSF Orders related to Public Safety | N/A | SDG&E-04 LPK-73 to LPK-76 WP 005000 | Expenditures within budget code 500 provide for changes and additions to the existing gas distribution system for the purpose of serving new gas customers. |
| System Minor Additions, Relocations, & Retirements | Non-RAMP | SDG&E-04-R GOM-75 to GOM-77 WP 005010 | SDG&E-04 LPK-76 to LPK-80 WP 005010 | Expenses in budget code 501 provide for minor gas distribution main and service additions, retirements and relocations. These expenditures are required to maintain the continued integrity of SDG&E's gas distribution system. |
| Franchise Relocations | Non-RAMP | SDG&E-04-R GOM-79 to GOM-82 WP 005050 | SDG&E-04 LPK-84 to LPK-86 WP 005050 | This project covers the relocation of existing gas distribution facilities when necessitated by public improvements as required by the company's franchise agreements to clear municipal or other improvements. Generally, the work involves a change in alignment and/or grade of existing gas pipelines and associated facilities driven by local and state agency requirements. Work may involve main replacement in a new location in lieu of lowering, raising or changing lateral position of the existing main due to municipal improvements such as street and highway, railroad, and water and sewer line construction. This project covers the relocation of existing gas distribution facilities in compliance with State Highway and Municipal Franchise Agreements. All pipeline work must be performed in compliance with CPUC GO 112-F. |
| Tools and Equipment | Non-RAMP | SDG&E-04-R GOM-82 to GOM-84 WP 005060 | SDG&E-04 LPK-86 to LPK-89 WP 005060 | Funds in this budget code are used to acquire various tools and equipment used by gas crews, personnel in the field, construction operations, shop operations, and identical state-of-the-art tools used in training. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|---|---|--|
| Code Compliance | RAMP | SDG&E-04-R GOM-84 to GOM-88 WP 005070 | SDG&E-04 LPK-90 to LPK-93 WP 005070 | Tools and equipment are replaced due to failure, age, advances in technology, and to improve employee safety and ergonomics. These tools and equipment are necessary to economically and safely install, operate and maintain the gas distribution system. Budget code 506 provides funds for new tools and equipment required by field personnel in order to safely and efficiently install, operate and maintain the gas distribution system, as well as maintenance of the Skills City inventory of training equipment. |
| | | | | Four principle ongoing compliance issues involving the gas distribution system currently require funding under this budget code: 1. Labor for the Regulator Replacement Program for pre-1982 American Meter Type K-Regulators to be removed in compliance with 49 CFR § 192.197(b); 2. Labor and materials necessary for the installation of barricades to protect MSAs from vehicular traffic in compliance with 49 CFR § 192.353(a); 3. Labor and materials necessary for the installation of distribution system electronic pressure monitoring devices (EPM), in compliance with 49 CFR § 192.741(a)-(b); and 4. Installation of isolation valves necessary for the safe operation of the gas distribution system, in compliance with 49 CFR § 192.181. Capital expenditures in budget code 507 are used to keep SDG&E's gas distribution system in compliance with state and federal regulations for natural gas pipelines. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|-------------------------------------|---|---|---|
| Replacements of Mains and Services - RAMP1 | Early Vintage Steel Replacement | SDG&E-04-R GOM-88 to GOM-91 WP 005080 | SDG&E-04 LPK-107 to LPK-108 WP 195640 | Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or deteriorated gas pipelines. This budget code provides for the replacement of deteriorated Gas Distribution system pipelines to maintain public safety and system reliability. Expenditures in this budget code range from minor pipe replacements to more complex projects. Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or relatively poor performing gas pipelines. This budget code provides for the replacement of poor performing gas distribution system pipelines. This category includes costs for activities, as described, designed to mitigate infrastructure integrity risks. |
| Replacements of Mains and Services - RAMP2 | Early Vintage Threaded Main Removal | SDG&E-04-R GOM-88 to GOM-91 WP 005080 | SDG&E-04 LPK-105 to LPK-107 WP 195650 | Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or deteriorated gas pipelines. This budget code provides for the replacement of deteriorated Gas Distribution system pipelines to maintain public safety and system reliability. Expenditures in this budget code range from minor pipe replacements to more complex projects. This category includes costs for activities, as described, designed to mitigate infrastructure integrity risks. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|-----------------------------------|---|---|---|
| Replacements of Mains and Services - RAMP4 | Leak Repair | SDG&E-04-R GOM-88 to GOM-91 WP 005080 | SDG&E-04 LPK-94 to LPK-96 WP 005080 | Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or deteriorated gas pipelines. This budget code provides for the replacement of deteriorated Gas Distribution system pipelines to maintain public safety and system reliability. Expenditures in this budget code range from minor pipe replacements to more complex projects. Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or relatively poor performing gas pipelines. This budget code provides for the replacement of poor performing gas distribution system pipelines. This category includes costs for activities, as described, designed to mitigate infrastructure integrity risks. |
| Replacements of Mains and Services - RAMP5 | EPOCH Planned Replacement of Pipe | SDG&E-04-R GOM-88 to GOM-91 WP 005080 | SDG&E-04 LPK-109 to LPK-110 WP 005140 | Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or deteriorated gas pipelines. This budget code provides for the replacement of deteriorated Gas Distribution system pipelines to maintain public safety and system reliability. Expenditures in this budget code range from minor pipe replacements to more complex projects. Funding in this budget code is required to address compliance requirements for the elimination of potentially hazardous conditions due to leaking or relatively poor performing gas pipelines. This budget code provides for the replacement of poor performing gas distribution system pipelines. This category includes costs for activities, as described, designed to mitigate infrastructure integrity risks. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|--|---|---|
| Cathodic Protection | Non-RAMP | SDG&E-04-R GOM-91 to GOM-94 WP 005090 | SDG&E-04 LPK-96 to LPK-98 WP 005090 | The Cathodic Protection (CP) budget code includes expenditures associated with the installation of new and replacement CP systems and equipment in accordance with state and federal pipeline corrosion control standards (49 C.F.R. § 192, Subpart I—Requirements for Corrosion Control and GO 112-F). This category includes costs for the installation of the CP assets that will minimize corrosion of steel pipelines and reduce the risk to the public from leakage of gas. |
| Regulator Station Improvements and Other - RAMP1 | Improvements | SDG&E-04-R GOM-94 to GOM-98 WP 005100 | SDG&E-04 LPK-111 to LPK-112 WP 195660 | This budget code provides funding for small capital projects that improve safety, provide required code compliance, and improve gas system performance or reliability through the replacement of aging gas pipeline system operating equipment. This category includes costs for activities, as described, designed to mitigate infrastructure integrity risks. |
| Regulator Station Improvements and Other - RAMP3 | Improvements | SDG&E-04-R GOM-94 to GOM-98 WP 005100 | SDG&E-04 LPK-117 to LPK-118 WP 195680 | This budget code provides funding for small capital projects that improve safety, provide required code compliance, and improve gas system performance or reliability through the replacement of aging gas pipeline system operating equipment. This category includes costs for activities, as described, designed to mitigate infrastructure integrity risks. |
| GD Local Engineering Pool | Non-RAMP | SDG&E-04-R GOM-99 to GOM-102 WP 009020 | SDG&E-04 LPK-124 to LPK-131 WP 009020 | The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. The Local Engineering Pool is composed of three cost categories: technical |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------|---|--|---|---|
| GD Local Engineering Pool | Improvements to Cathodic Protection reliability | SDG&E-04-R GOM-99 to GOM-102 WP 009020 | N/A | planning, project management, and engineering activities. The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. The Local Engineering Pool is composed of three cost categories: technical planning, project management, and engineering activities. |
| GD Local Engineering Pool | Safety policies and Programs | SDG&E-04-R GOM-99 to GOM-102 WP 009020 | N/A | The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. The Local Engineering Pool is composed of three cost categories: technical planning, project management, and engineering activities. |
| GD Local Engineering Pool | Gas Handling Plans RAMP | N/A | SDG&E-04 LPK-124 to LPK-131 WP 009020 | The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. The Local Engineering Pool is composed of three cost categories: technical planning, project management, and engineering activities. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------|--|--|---|--|
| GD Local Engineering Pool | RAMP Geographic Information System Group | N/A | SDG&E-04 LPK-124 to LPK-131 WP 009020 | The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. The Local Engineering Pool is composed of three cost categories: technical planning, project management, and engineering activities. |
| GD Local Engineering Pool | Operational QA/QC | SDG&E-04-R GOM-99 to GOM-102 WP 009020 | SDG&E-04 LPK-124 to LPK-131 WP 009020 | The Local Engineering Pool work category provides the labor and non-labor funding for a broad range of services to support Gas Distribution field capital asset construction. This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering Pool. The Local Engineering Pool is composed of three cost categories: technical planning, project management, and engineering activities. |
| Gas Department Overhead Pool | Non-RAMP | N/A | SDG&E-04 LPK-131 to LPK-133 WP 009050 | This budget code represents the Department Overhead expenses for supervision and administration of gas crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects, or the Construction and Operation (C&O) districts as a whole. Certain costs are incurred by capital projects that originate from central activities which are subsequently distributed to those capital projects. These central activity costs are also called 'pooled' or 'indirect' costs. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|---|---|
| Gas Contract Admin Pool | Non-RAMP | N/A | SDG&E-04 LPK-134 to LPK-135 WP 009060 | The Contract Administration (CA) pool consists of those expenses necessary for the administration of projects that are performed by contractors for SDG&E. The expenses to this pool consist of labor for Contract Administrators and support personnel, as well as the associated non-labor support costs such as office and field supplies. This pool includes the costs that will be allocated to contracted work. |

B. SDG&E Gas Engineering

i. SDG&E Gas Engineering O&M Variances

The Gas Engineering witness did not sponsor any O&M costs in the TY 2019 GRC.

ii. SDG&E Gas Engineering Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-----------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Engineering | | 935 | 481 | 454 | 94% | | | | | | | |
| GT Land Rights | Non-RAMP | 0 | 219 | (219) | -100% | | | | | | No | No |
| GT Auxiliary Equipment (BC 419) | Non-RAMP | 230 | 30 | 200 | 660% | | | | | | No | No |
| GT Capital Tools | Non-RAMP | 369 | 99 | 270 | 274% | | | | | | No | No |
| GT Auxiliary Equipment (BC 439) | Non-RAMP | 0 | 11 | (11) | -100% | | | | | | No | No |
| GT Supervision & Engineering Pool | Non-RAMP | 336 | 122 | 214 | 175% | | | | | | No | No |

iii. SDG&E Gas Engineering Capital Variance Explanations

No variance explanation is required for this category because no variance met the selection criteria.

iv. SDG&E Gas Engineering Capital Workpaper Descriptions and GRC Testimony Locations

No workpaper mapping is required for this category because no variance met the selection criteria.

C. SDG&E Gas System Integrity

i. SDG&E Gas System Integrity O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|--------------------------------|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|----|
| Gas System Integrity | | 278 | 1,752 | (1,475) | -84% | | | | | | | | |
| Gas Contractor Controls | Safety Policies & Programs | 0 | 145 | (145) | -100% | 0 | 2 | (2) | -100% | FTEs | No | Yes | |
| Pipeline Safety & Compliance | Non-RAMP | 110 | 121 | (11) | -9% | 1 | 1 | - | 0% | FTEs | No | No | |
| Damage Prevention and Public Awareness | Non-RAMP | 168 | 111 | 57 | 51% | No single unit is available for this workpaper due to multiple activities including mailers sent and the number of customers. | | | | | | No | No |
| Damage Prevention and Public Awareness | Public Awareness | 0 | 700 | (700) | -100% | No single unit is available for this workpaper due to multiple activities including mailers sent and the number of customers. | | | | | | Yes | No |
| Sub-Total Field O&M -Damage Prevention and Public Awareness | | 168 | 812 | (644) | -79% | | | - | | | Yes | | |
| Codes Standards and Records | Information Management Systems | 0 | 674 | (674) | -100% | No single unit is available for this workpaper due to multiple activities including records digitized and the number of enhancements. | | | | | | Yes | No |

ii. SDG&E Gas System Integrity O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--------------------------------|---|-------------------------------------|--|
| Gas Contractor Controls | Safety Policies & Programs | No | Yes | Units forecasted in this area were instead recorded to cost centers in Safety, which is reported within the Human Resources section of the RSAR; thus, this activity is not considered cancelled or deferred. |
| Damage Prevention and Public Awareness | Public Awareness | Yes | No | This program leveraged co-hosting outreach activities with other programs such as Distributed Integrity Management Program (DIMP). The company met federally mandated Public Awareness program requirements as prescribed in 49 CFR 192.616. |
| Codes, Standards and Records | Information Management Systems | Yes | No | Costs forecasted in this area were recorded to cost centers in the SoCalGas Records Management organization that manages records on behalf of both companies, thus, this activity is not considered cancelled or deferred. |

iii. SDG&E Gas System Integrity O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|----------------------------|---|---|--|
| Gas Contractor Controls | Safety Policies & Programs | SDG&E-05 OR-13 to OR-17 WP 1SI000.000 | SDG&E-31 KJD-45 to 51 WP 1SM002.002 | Gas Contractor Controls collaborates with Company and industry leaders and subject matter experts to formulate and promote policy related to construction contractor safety and pipeline safety/quality oversight. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------------|---|--|--|
| Damage Prevention and Public Awareness | Public Awareness | SDG&E-05 OR-19 to OR-22 WP 1SI003.000 | SDG&E-05 WR-9 to WR-20 WP 1SI001.000 | The Public Awareness program contributes to enhanced public safety by providing certain risk mitigation measures. The program includes activities to educate the public, appropriate government organizations, and persons engaged in excavation-related activities regarding: (1) use of the one-call notification system prior to excavation and other damage prevention activities; (2) possible hazards associated with unintended releases from a gas pipeline facility; (3) physical indications that such a release may have occurred; (4) steps that should be taken for public safety in the event of a gas pipeline release; and (5) procedures for reporting such an event. |
| Codes, Standards and Records | Information Management Systems | SDG&E-05 OR-23 to OR-24 WP 2100-3563 | SDG&E-31 KJD-76 to KJD-83 WP 2100-0414.000 | Codes and Standards help SDG&E and SoCalGas meet their regulatory obligations and allow for information exchange to enhance public and employee safety. This Workpaper covers non-labor support needed to manage and provide consistency with respect to gas standards best practices and regulatory oversight. |

iv. SDG&E Gas System Integrity Capital Variances

The Gas System Integrity witness did not sponsor any capital costs in the TY 2019 GRC.

D. SDG&E Gas Transmission

i. SDG&E Gas Transmission O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | | |
|--------------------------------------|--|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|---------------------------------------|---|-------------------------------------|----|----|
| Gas Transmission | | 6,004 | 5,790 | 215 | 4% | | | | | | | | | |
| Pipeline Operations | Non-RAMP | 426 | 2,025 | (1,599) | -79% | 801 | 1,058 | -257 | -24% | Work orders | Yes | Yes | | |
| Pipeline Operations | Pipeline Patrol & Maintenance | 750 | 22 | 728 | 3297% | 196 | 246 | -50 | -20% | Compliance & preventative work orders | Yes | Yes | | |
| Pipeline Operations | Cathodic Protection | 77 | 31 | 47 | 153% | 918 | 402 | 516 | 128% | Compliance & follow-up reads | No | Yes | | |
| Pipeline Operations | M&R (Maint. & Insp.) | 747 | 8 | 739 | 8779% | 41 | 1,188 | -1,147 | -97% | Compliance & preventative work orders | Yes | Yes | | |
| Sub-Total Pipeline Operations | | 2,000 | 2,086 | (85) | -4% | | | | | | No | | | |
| Compression Station Operations | Non-RAMP | 3,959 | 3,536 | 424 | 12% | This workpaper is unable to identify a single unit of measure due to the variety of work that takes place in Compressor Station Operation activities. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| Technical Services | Non-RAMP | 2 | 8 | (6) | -74% | This workpaper is unable to identify a single unit of measure due to the variety of work that takes place in Technical Services activities. | | | | | | | No | No |
| Technical Services | Operator Qualification | 0 | 123 | (123) | -100% | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| Technical Services | Engineering, Supervision, Oversight & Review | 43 | 37 | 6 | 16% | | | | | | | | No | No |
| Sub-Total Technical Services | | 45 | 168 | (124) | -73% | | | | | | No | | | |

ii. SDG&E Gas Transmission O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|-------------------------------|---|-------------------------------------|---|
| Pipeline Operations | Non-RAMP | Yes | Yes | The non-RAMP activities under this workpaper (i.e., 2GT000.000 - Pipeline Operations) were moved to identified RAMP activities under the same workpaper. Most O&M activities in Pipeline Operations in Gas Transmission are mitigations to address the risk of catastrophic high-pressure pipeline failure. |
| Pipeline Operations | Pipeline Patrol & Maintenance | Yes | Yes | The variance is due to the risk mitigation costs for Pipeline Operations being spread over the respective RAMP categories rather than collected in the non-RAMP expense category. |
| Pipeline Operations | Cathodic Protection | No | Yes | The variance is due to the risk mitigation costs for Pipeline Operations being spread over the respective RAMP categories rather than |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|---|
| | | | | collected in non-RAMP expense categories. More work orders were completed than were forecast. |
| Pipeline Operations | M&R (Maint. & Insp.) | Yes | Yes | The variance is due to the risk mitigation costs for Pipeline Operations being spread over the respective RAMP categories rather than collected in non-RAMP expense categories. Less work orders were completed than were forecast. |

iii. SDG&E Gas Transmission O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|-------------------------------|--|---|--|
| Pipeline Operations | Non-RAMP | SDG&E-06 EAM-8 to EAM-10 WP 1GT000.000 | SDG&E-06 RC-SH-13 to RC-SH-17 WP 1GT000.000 | Gas Transmission Pipelines Operations is responsible for the safe day-to-day operation and maintenance of gas transmission pipeline facilities and related infrastructure. This includes, but is not limited to, leak surveys, valve inspections, cathodic protection systems, locate & mark, stand-by, and maintaining equipment at pipeline receipt points that includes odorization equipment and real-time operating data telemetry communication equipment. |
| Pipeline Operations | Pipeline Patrol & Maintenance | SDG&E-06 EAM-8 to EAM-10 WP 1GT000.000 | SDG&E-06 RC-SH-13 to RC-SH-17 WP 1GT000.000 | Gas Transmission Pipelines Operations is responsible for the safe day-to-day operation and maintenance of gas transmission pipeline facilities and related infrastructure. This includes, but is not limited to, leak surveys, valve inspections, cathodic protection systems, locate & mark, stand-by, and maintaining equipment at pipeline receipt points that includes odorization equipment and real-time operating data telemetry communication equipment. |
| Pipeline Operations | Cathodic Protection | SDG&E-06 EAM-8 to EAM-10 WP 1GT000.000 | SDG&E-06 RC-SH-13 to RC-SH-17 WP 1GT000.000 | Gas Transmission Pipelines Operations is responsible for the safe day-to-day operation and maintenance of gas transmission pipeline facilities and related infrastructure. This includes, but is not limited to, leak surveys, valve inspections, cathodic protection systems, locate & mark, stand-by, and maintaining equipment at pipeline receipt points that includes odorization |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|--|---|--|
| | | | | equipment and real-time operating data telemetry communication equipment. |
| Pipeline Operations | M&R (Maint. & Insp.) | SDG&E-06 EAM-8 to EAM-10 WP 1GT000.000 | SDG&E-06 RC-SH-13 to RC-SH-17 WP 1GT000.000 | Gas Transmission Pipelines Operations is responsible for the safe day-to-day operation and maintenance of gas transmission pipeline facilities and related infrastructure. This includes, but is not limited to, leak surveys, valve inspections, cathodic protection systems, locate & mark, stand-by, and maintaining equipment at pipeline receipt points that includes odorization equipment and real-time operating data telemetry communication equipment. |

iv. SDG&E Gas Transmission Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------------|-------------------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Transmission | | 25,150 | 10,605 | 14,545 | 137% | | | | | | | |
| New Gas Transmission Pipeline | Non-RAMP | 0 | 2,701 | (2,701) | -100% | | | | | | Yes | No |
| GT Relocation | Non-RAMP | 0 | 1 | (1) | -100% | | | | | | No | No |
| GT Cathodic Protection | Requirements for corrosion control. | 961 | 242 | 719 | 297% | | | | | | No | No |
| GT M&R Stations | Non-RAMP | 1,756 | 564 | 1,192 | 212% | | | | | | Yes | No |
| GT Replacements | Non-RAMP | 4,052 | 0 | 4,052 | 100% | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|----------------------------------|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|--|-----------------|-----------------|---|-------------------------------------|
| GT Replacements | HCA Class Location Follow-up Mitigation | 0 | 2,001 | (2,001) | -100% | | | This activity is tracked by projects that are initiated due to costs associated with the High Consequence Area (HCA) class location mitigation risks. No new projects in 2021. | | | Yes | No |
| Sub-Total GT Replacements | | 4,052 | 2,001 | 2,052 | 103% | | | | | | Yes | |
| Compressor Stations (BC 415) | Non-RAMP | 10,299 | 2,006 | 8,293 | 413% | | | This activity in this category is tracked by projects that are initiated due to costs associated with the replacement of compressor station equipment such as relief valves, fire suppression systems, compressor station decommissioning, combustion modifications, critical spares purchases and upgrades, re-pavement and radiator and catalyst upgrades. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The actual costs for this activity in 2021 are associated with 22 projects. | | | Yes | No |
| Compressor Stations (BC 435) | Non-RAMP | 38 | 3,092 | (3,053) | -99% | | | This activity is tracked by projects that are initiated due to upgrading and replacement of outdated control technology that is critical to efficient station operation. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The actual costs for this activity in 2021 are associated with 1 project. | | | Yes | No |
| Moreno Modernization Project | Non-RAMP | 8,044 | 0 | 8,044 | 100% | | | The Moreno Compressor Station Modernization (MCM) project consists of a variety of activities such as: install two new compressor drive units, decommission four existing compressors, install auxiliary systems and infrastructure to support two new compressors, install two new backup electric generators. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No |

v. SDG&E Gas Transmission Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------|---|---|-------------------------------------|--|
| New Gas Transmission Pipeline | Non-RAMP | Yes | No | There were no new customer service requests in 2021, which resulted in zero projects for new pipelines in 2021. |
| GT M&R Stations | Non-RAMP | Yes | No | Higher than forecasted costs due to the emergent Biome Rule 39 - Sanco Project. |
| GT Replacements | Non-RAMP | Yes | No | Higher than forecasted costs due to ongoing projects from 2019 and 2020 to mitigate erosion around the pipelines caused by heavy rains in those years. |
| GT Replacements | HCA Class Location Follow-up Mitigation | Yes | No | Lower than forecasted customer development projects resulted in zero class location changes that would cause new class location projects to be initiated during 2021. |
| Compressor Stations (BC 415) | Non-RAMP | Yes | No | Higher than forecasted due to execution of two previously deferred projects: one for a selective catalyst reduction and a unit 10 Combustion Modification that was compliance driven. This work supports reduction in NOX emissions. Projects contained in BC 415 are compliance |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------|--------------------------|---|-------------------------------------|---|
| | | | | driven. Specific projects for 2021 were unknown at the time this forecast was initially developed. |
| Compressor Stations (BC 435) | Non-RAMP | Yes | No | The scope changed for this project which caused lower than forecasted costs. Changed from full replacement of discharge piping to upgrade of pipeline coating. Projects contained in BC 435 are driven by quality/economic reasons. Specific projects for 2021 were unknown at the time this forecast was initially developed. A higher percentage of the work completed in 2021 was compliance driven which caused a reduction of spending in this category. |
| Moreno Modernization Project | Non-RAMP | Yes | No | The Moreno Compressor Modernization (MCM) project was projected to be in-service outside of the TY 2019 GRC cycle, however the CPUC recognized in Decision (D) 19-09-051 the importance of the proposed project and the role of compressor stations in maintaining operational reliability and safety of the gas transmission system. The CPUC found the planning of the MCM project to be prudent and reasonable. Additionally, the MCM project is compliance driven and required to be completed and placed in service within 36 months of receiving an Air Quality Management District (AQMD) Permit to Construct. The costs incurred in 2021 are associated with robust stakeholder outreach within the Inland Empire and northern San Diego County, completion of SoCalGas's preliminary environmental evaluation and land and right-of-way assessment associated with an electrical interconnect to the Southern California Edison (SCE) electric grid; payment of fees to SCE for completion of the Memorandum of Service agreement; project planning and development of project definition by performing front end engineering design activities, all of which related to the safety and reliability of the compressor station. |

vi. SDG&E Gas Transmission Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|--------------------------|--|-----------------------------|---|
| New Gas Transmission Pipeline | Non-RAMP | SDG&E-07-R JGT-9 to JGT-10 WP 004010 | N/A | The New Construction Pipeline cost category provides funding for the backbone and local natural gas transmission system with additional resiliency, capacity, |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|---|---|----------------------------------|---|
| | | | | and reliability in order to serve new or increased loads or to provide natural gas supply reinforcement to an existing area. |
| GT M&R Stations | Non-RAMP | SDG&E-07-R JGT-16 to JGT-18 WP 004180 | SDG&E-06 RC-SH-32 WP 04080 | This Budget Code includes costs of installing and rebuilding large meter set assemblies (MSAs) for transmission-served customers and pressure limiting stations on the gas transmission system. These assets require replacement principally for three reasons: aging, change in use patterns and/or population encroachment, and enhancement of the transmission system to address gas quality and capacity issues. The capital work sustains reliable operation of critical transmission assets. This includes periodic replacement of local field measurement and control equipment. |
| GT Replacements | Non-RAMP | SDG&E-07-R JGT-10 WP M04120 | SDG&E-06 RC-SH-25 WP 04120 | Occasionally natural gas transmission pipelines need to be replaced due to the condition of the pipeline or hazardous conditions affecting the existing pipeline location. Some pipeline sections need to be replaced due to erosion from agricultural activities or storm water runoff; more often, however, replacements are required due to a class location change, which is the re-classification of a pipeline segment from non-High Consequence Area to High Consequence Area (HCA) due to changes in population density in the vicinity of that pipeline segment. This category includes costs for activities, as described, designed to mitigate system reliability risks. |
| GT Replacements | HCA Class Location Follow-up Mitigation | SDG&E-07-R JGT-10 WP M04120 | SDG&E-06 RC-SH-25 WP 04120 | Occasionally natural gas transmission pipelines need to be replaced due to the condition of the pipeline or hazardous conditions affecting the existing pipeline location. Some pipeline sections need to be replaced due to erosion from agricultural activities or storm water runoff; more often, however, replacements are required due to a class location change, which is the re-classification of a pipeline segment from non-High Consequence Area to High Consequence Area (HCA) due to changes in population density in the vicinity of that pipeline segment. This category includes |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------|--------------------------|-----------------------------------|----------------------------------|--|
| | | | | costs for activities, as described, designed to mitigate system reliability risks. |
| Compressor Stations (BC 415) | Non-RAMP | SDG&E-07-R JGT-13 WP M04150 | SDG&E-06 RC-SH-28 WP 04150 | The nature of compressor station operation requires consistent maintenance and replacement of key engine components and controls in order to maintain the reliability and safety of the facility. |
| Compressor Stations (BC 435) | Non-RAMP | SDG&E-07-R JGT-13 WP M04350 | SDG&E-06 RC-SH-28 WP 04350 | The purpose of the Moreno Compressor Replacement project is to replace aging, inefficient equipment with new equipment that will provide additional reliability while reducing emissions and lowering the overall operational cost of the facility. Currently, the Moreno station is operating with insufficient capacity to allow the station to move the design flow of 800 million standard cubic feet per day (MMSCFD) at 440 psig suction on a peak day, when any one of ten existing large compressors is out of service. This current situation poses an operation risk to SoCalGas and SDG&E's ability to meet tariff obligations and serve our customer base if any single large compressor is out of service for extended periods. |
| Moreno Modernization Project | Non-RAMP | SDG&E-07-R JGT-13 WP M04350 | SDG&E-06 RC-SH-28 WP 04350 | The purpose of the Moreno Compressor Replacement project is to replace aging, inefficient equipment with new equipment that will provide additional reliability while reducing emissions and lowering the overall operational cost of the facility. Currently, the Moreno station is operating with insufficient capacity to allow the station to move the design flow of 800 million standard cubic feet per day (MMSCFD) at 440 psig suction on a peak day, when any one of ten existing large compressors is out of service. This current situation poses an operation risk to SoCalGas and SDG&E's ability to meet tariff obligations and serve our customer base if any single large compressor is out of service for extended periods. |

3. SDG&E OTHER

A. SDG&E Customer Services

i. SDG&E Customer Services O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| Customer Services | | 68,406 | 77,076 | (8,670) | -11% | | | | | | | |
| Customer Services Field - Operations | | 24,036 | 27,085 | (3,049) | -11% | | | | | | | |
| Customer Services Field - Operations | Non-RAMP | 10,125 | 12,673 | (2,547) | -20% | 152,250 | 259,731 | (107,481) | -41% | Number of Non-RAMP Orders | Yes | Yes |
| Customer Services Field - Operations | CSF Emergency Orders - include carbon monoxide, fumigation and hazardous and non-hazardous gas leaks and atmospheric corrosion orders | 5,766 | 5,231 | 535 | 10% | 67,760 | 80,225 | (12,465) | -16% | Number of RAMP Orders | No | No |
| Customer Services Field - Operations | Job Observation and Behavior Based Safety. | 136 | 168 | (32) | -19% | 1,322 | 926 | 396 | 43% | Number of Job Observations | No | Yes |
| Customer Services Field - Operations | Workforce Planning Technical Training for Critical Roles - Service Technicians and Appliance Mechanics backfill for retirements | 104 | 57 | 47 | 83% | 4 | 2 | 2 | 100% | Number of Workforce Training Headcount | No | Yes |
| Sub-Total Customer Services Field - Operations | | 16,131 | 18,129 | (1,997) | -11% | | | | | | No | |
| Customer Services Field - Supervision | Non-RAMP | 1,250 | 1,624 | (374) | -23% | 11 | 14 | (3) | -21% | Number of FTE | No | Yes |
| Customer Services Field - Dispatch | Non-RAMP | 3,338 | 4,462 | (1,124) | -25% | 29 | 43 | (14) | -33% | Number of FTE | No | Yes |
| Customer Services Field - Dispatch | Job observations of employee and contractor activities and safety behaviors | 2 | 1 | 1 | 90% | 71 | 68 | 3 | 4% | Number of Job Observations | No | No |
| Sub-Total Customer Services Field - Dispatch | | 3,340 | 4,463 | (1,123) | -25% | | | | | | No | |
| Customer Services Field - Support | Non-RAMP | 3,168 | 2,785 | 383 | 14% | 23 | 26 | (3) | -13% | Number of FTE | No | No |
| Customer Services Field - Support | Field observations of employee and contractor activities and safety behaviors | 146 | 84 | 62 | 74% | 1 | 1 | 0 | 33% | Number of FTE | No | Yes |
| Sub-Total Customer Services Field - Support | | 3,314 | 2,869 | 445 | 16% | | | | | | No | |
| Customer Service Information & Technology | | 17,803 | 23,060 | (5,257) | -23% | | | | | | | |
| Marketing Research & Analytics | Non-RAMP | 7,177 | 8,606 | (1,429) | -17% | | | | | | No | No |
| Marketing, Research, & Analytics 2021 activities included those described in testimony and workpapers such as: Developing strategic marketing plans, execution of communication tactics across various channels such as mass, direct, digital, and social, oversight and management of SDG&E's websites, | | | | | | | | | | | | |

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| WP Activity Description | | | | | | | | | | | |
| RAMM Mitigation Activity | | | | | | | | | | | |
| Marketing Research & Analytics | 336 | 336 | 0 | 0% | | | | | | No | No |
| Marketing Research & Analytics | 4,362 | 6,836 | (2,474) | -36% | 1 | 1 | 0 | 0% | Number of Campaigns | No | No |
| Sub-Total Marketing Research & Analytics | 11,875 | 15,777 | (3,902) | -25% | | | | | | Yes | |
| Customer Programs Pricing And Other Office | 5,767 | 6,958 | (1,191) | -17% | | | | | | No | No |
| Customer Programs Pricing And Other Office | | | | | 3,238 | 7,391 | (4,153) | -56% | Number of NGAT's (tests) Completed | No | Yes |
| Sub-Total Customer Programs Pricing And Other Office | 5,928 | 7,283 | (1,355) | -19% | | | | | | No | |
| Customer Service - Office Operations | 26,567 | 26,931 | (364) | -1% | | | | | | | |
| Advanced Metering Ops | 9,393 | 9,376 | 17 | 0% | 31,463 | 39,033 | (7,570) | -19% | Number of Orders | No | No |
| Advanced Metering Ops | 192 | 42 | 150 | 356% | 896 | 383 | 513 | 134% | Number of Job Observations | No | Yes |
| Advanced Metering Ops | 0 | 123 | (123) | -100% | 0 | 1 | (1) | -100% | Number of Workforce Training Headcount | No | Yes |
| Sub-Total Advanced Metering Ops | 9,585 | 9,542 | 44 | 0% | | | | | | No | |
| Credit & Collections | 2,861 | 3,223 | (362) | -11% | | | | | | No | No |
| Credit & Collections | 310 | 271 | 39 | 14% | 1,659 | 2,311 | (652) | -28% | Number of Investigations/Leads | No | Yes |
| Sub-Total Credit & Collections | 3,171 | 3,494 | (324) | -9% | | | | | | No | |
| CCC Operations | 9,685 | 10,227 | (542) | -5% | 1,445,662 | 1,365,755 | 79,907 | 6% | Number of Non-RAMP Calls | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---------------------------------|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| CCC Operations | Emergency calls taken by the Customer Contact Center including outage calls. | 392 | 424 | (32) | -8% | 138,827 | 193,851 | (55,024) | -28% | Number of Emergency/outage calls | No | Yes |
| CCC Operations | Capture Customer Email Program to update customer contact information | 200 | 189 | 11 | 6% | 1,073,836 | 1,101,987 | (28,151) | -3% | Number of Email solicitation/verification residential non-move calls | No | No |
| CCC Operations | ESS Emergency call training: 5 hrs per ESS. | 28 | 23 | 5 | 21% | 0 | 0 | 0 | 0% | Number of FTE | No | No |
| Sub-Total CCC Operations | Non-RAMP | 10,305 | 10,863 | (558) | -5% | 1,584,489 | 1,559,606 | 24,883 | 2% | Number of Calls | No | No |

ii. SDG&E Customer Services O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------------|--|---|-------------------------------------|---|
| Customer Services Field - Operations | Non-RAMP | Yes | Yes | <p>Cost: The spending variance is due to lower than forecasted number of orders worked largely due to the COVID-related disconnection moratorium and less customer requested work.</p> <p>Units: Collection orders were lower than forecasted by 19,101 due to the temporary suspension of collection activities attributed to the COVID-related disconnection moratorium. In addition, customer-requested and company-generated work orders were lower than forecasted by 79,667 primarily due to a COVID-related temporary company policy suspending non-essential orders that require CSF technicians to enter a customer's home. Finally, the incomplete job orders were lower than forecast by 8,713 due to proactive resolution of access issues.</p> <p>Higher than forecasted job observations were realized as part of SDG&E's continued efforts to enhance safety engagement with field employees primarily through the following actions: (1) consistent scheduling to ensure observations are performed; (2) continually improving the contact rate with each employee by having regularly conducting peer to peer observations in all districts; and (3) performing full-scale observations of both vehicle parking/driving skills and technical field activities.</p> |
| Customer Services Field - Operations | Job Observation and Behavior Based Safety. | No | Yes | |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--|---|-------------------------------------|---|
| Customer Services Field - Operations | Workforce Planning Technical Training for Critical Roles - Service Technicians and Appliance Mechanics backfill for retirements | No | Yes | Higher than forecasted workforce training required due to higher attrition. |
| Customer Services Field - Supervision | Non-RAMP | No | Yes | Lower than forecasted field supervisor FTE due to higher than expected attrition and timing of the approval and onboarding process. |
| Customer Services Field - Dispatch | Non-RAMP | No | Yes | Lower than forecasted dispatch FTE due to a higher than forecast allocation of labor to the Capital Department Overhead Pool based on a recent labor study. |
| Customer Services Field - Support | Field observations of employee and contractor activities and safety behaviors | No | Yes | Higher than forecasted Behavior-Based Instructor FTE due to more time spent for job observations and training as part of SDG&E's continued efforts to enhance safety engagement with field employees. |
| Sub-Total Marketing Research & Analytics | | Yes | | While there was some carryover due to the pandemic and focusing on communicating assistance resources to customers, the reuse of multiple program assets and continued strategic focus on education and outreach spend, which included more low-cost and no-cost alternatives, reduced overall spend. The department also experienced several unfilled positions. |
| Customer Programs Pricing and Other Office | Natural Gas Appliance Testing (NGAT) is a safety-related program for Customer Assistance's Energy Savings Assistance (ESA) Program participants. | No | Yes | The primary reason for the variance between 2021 authorized NGAT units 7,931 and the actual number of NGATs performed in 2021 of 3,238 was due to the reduction in homes treated goal approved for the Energy Savings Assistance (ESA) Program Bridge Period for January through June of 2021 and authorized in D.21-06-015 for the remainder of the program year. The original forecast was based on an annual homes treated goal of 23,761, which was reduced to 11,946. While the program exceeded the 2021 homes treated goal, treating 13,658 homes, the overall number of NGATs performed fell well below the initial estimated number. |
| Advanced Metering Ops | Job Observation and Behavior Based Safety. | No | Yes | Higher than forecasted job observations were conducted as part of SDG&E's continued efforts to enhance safety engagement with field employees primarily through the following actions: (1) consistent scheduling to ensure observations were performed; (2) continually |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|--|
| | | | | improving contact rate with each employee by scheduling two observers to conduct regular field observations in all districts; and (3) performing full-scale observations of both vehicle parking/driving skills and technical shop activities. |
| Advanced Metering Ops | Workforce Planning | No | Yes | Lower than forecasted workforce training due to lower attrition. This resulted in not conducting an Electric Meter Tester Apprenticeship (EMTA) program or a Metering school in 2021. The cost of the EMTA program is being requested in the 2024 GRC cycle. |
| Credit & Collections | Meter Tampering and meter bypass investigation and remediation. | No | Yes | Lower than forecasted leads/investigations worked due to emergency customer protections during the COVID pandemic. These protections ensured customers received service without disruption during the pandemic. In addition, Meter Revenue Protection (MRP) reduced the number of leads/investigations as work was focused only on the most critical activities to ensure safety and reliability. This was to keep employees and the community safe by limiting the interaction with customers to reduce the spread of COVID. MRP employees' activities were reallocated to meet other business needs. Normal business is expected to resume late 2022/early 2023. |
| CCC Operations | Emergency calls taken by the Customer Contact Center including outage calls. | No | Yes | Lower than forecasted emergency and outage calls due to improvements in outage notifications to include increase customer sign-up for outage notifications, more reliable updates to customer contact information, enhancements to the "report an outage" feature on SDG&E.com and enhancements made to the outage map on SDG&E mobile app. Additionally, in 2021, we had fewer Public Safety Power Shutoff (PSPS) related events. |

iii. SDG&E Customer Services O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|--------------------------|--|---|--|
| Customer Services Field - Operations | Non-RAMP | SDG&E-17 GRM-9 to GRM-14 WP IFC001.000 | SDG&E-17 DHT-13 to DHT-18 WP IFC001.000 | The CS-F Operations cost category consists of labor and non-labor expenses for field technicians to provide service at customer premises, including both customer and company generated work orders. Examples of customer-generated work orders include requests to establish or remove gas and electric |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|--|---|---|---|
| | | | | service, light gas pilots, check gas appliances, shut off and restore gas service for fumigation, investigate the potential causes of high bills, respond to emergency incidents, investigate potential gas leaks, and other services. Examples of company generated work include meter and regulator changes, and other meter work necessary to maintain company assets, and collecting customer payments for delinquent bills. Non-labor costs include items such as uniform expenses, small tools and miscellaneous supplies used on the job. |
| Customer Services Field - Operations | Job Observation and Behavior Based Safety. | SDG&E-17 GRM-5 to GRM-8 WP 1FC001.000 | SDG&E-17 DHT-7 to DHT-9 WP 1FC001.000 | SDG&E-3 - Employee, Contractor, Customer, and Public Safety - This addresses the risk of non-adherence to safety programs, policies and procedures, which may result in severe harm to employees, contractors and the general public. |
| Customer Services Field - Operations | Workforce Planning for Critical Roles - Service Technicians and Appliance Mechanics backfill for retirements | SDG&E-17 GRM-5 to GRM-8 WP 1FC001.000 | N/A | SDG&E-17 - Workforce Planning - This addresses risk of the loss of employees with deep knowledge, understanding and experience in operations due to retirements |
| Customer Services Field - Supervision | Non-RAMP | SDG&E-17 GRM-19 to GRM-20 WP 1FC002.000 | SDG&E-17 DHT-20 to DHT-21 WP 1FC002.000 | Organizationally, CS-F Operations field employees report to field supervisors. Like field technicians and collectors, field supervisors are geographically dispersed across SDG&E's five operating bases. Field supervisors hire and coach employees, conduct safety and job observations, coordinate with dispatch and others to address and resolve field issues, respond to emergency incidents to provide on-site leadership, and manage the overall performance of CS-F employees who work at each of the operating bases. |
| Customer Services Field - Dispatch | Non-RAMP | SDG&E-17 GRM-21 to GRM-23 WP 1FC003.000 | SDG&E-17 DHT-22 to DHT-24 WP 1FC003.000 | Dispatch personnel route and dispatch work orders to CS-F employees, electric troubleshooters, electric crews and Gas Distribution field employees on a day before and same day basis, 24 hours a day, 365 days a year. Dispatchers handle all matters that arise during the day, including dispatch of emergency orders real time as they are received; redistribution of work when employees call in sick or otherwise are unavailable; redistribution of work orders when employees are not able to complete all work that has been assigned for the day; coordination of logistics such as material an equipment ordering, no park sign, traffic control, etc.; and employee availability and schedule of field employees. Non-labor expenses include cell phones, office supplies, and other miscellaneous expenses. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--|---|---|--|
| Customer Services Field - Support | Field observations of employee and contractor activities and safety behaviors | SDG&E-17 GRM-5 to GRM-8 WP 1FC004.000 | SDG&E-17 DHT-7 to DHT-9 WP 1FC001.000 | SDG&E-3 - Employee, Contractor, Customer, and Public Safety - This addresses the risk of non-adherence to safety programs, policies and procedures, which may result in severe harm to employees, contractors and the general public. |
| Customer Programs Pricing And Other Office | Natural Gas Appliance Testing (NGAT) is a safety-related program for Customer Assistance's Energy Savings Assistance (ESA) Program participants. | SDG&E-19 LCD-44 to LCD-49 WP 1IN004.000 | SDG&E-19 SFB-26 to SFB-38 WP 1IN002.001 | Customer Programs, Pricing, and Other Office (CP&P) consists of the Vice President of Customer Services and three key groups: Customer Assistance Programs (CAP), Customer Solutions and Customer Pricing. These groups are collectively responsible for analytical, technical and policy support for development of value-added customer solutions as well as rate design, strategy, electric load analysis, and demand forecasting. This workpaper is in scope of the spending accountability report due to Natural Gas Appliance Testing (NGAT) conducted for Energy Savings Assistance (ESA) program participants as described, designed to mitigate safety risks. |
| Advanced Metering Ops | Job Observation and Behavior Based Safety. | SDG&E-18 JDS-9 to JDS-18 WP 1OO001.000 | SDG&E-17 DHT-7 to DHT-9 WP 1FC005.000 | SDG&E-3 - Employee, Contractor, Customer, and Public Safety - This addresses the risk of non-adherence to safety programs, policies and procedures, which may result in severe harm to employees, contractors and the general public. |
| Advanced Metering Ops | Workforce Planning | SDG&E-18 JDS-9 to JDS-18 WP 1OO001.000 | N/A | SDG&E-17 - Workforce Planning - This addresses risk of the loss of employees with deep knowledge, understanding and experience in operations due to retirements |
| Credit & Collections | Meter Tampering and meter bypass investigation and remediation. | SDG&E-18 JDS-26 to JDS-30 WP 1OO003.000 | SDG&E-18 SFB-11 to SFB-17 WP 1OO001.001 | Credit & Collections consists of Credit and Collections, Customer Payment Services, and Meter Revenue Protection. This workpaper is in scope of the spending accountability report due to meter tampering and meter bypass as described, designed to mitigate safety risks. |
| CCC Operations | Emergency calls taken by the Customer Contact Center including outage calls. | SDG&E-18 JDS-49 to JDS-56 WP 1OO006.000 | SDG&E-18 SFB-21 to SFB-26 WP 1OO004.000 | The Customer Contact Center (CCC) expenses cover the costs of answering customer telephone calls; responding to incoming email from customers; responding to customer inquiries through on-line chat features; answering written customer correspondence regarding customer account activity; following up on all CPUC telephone referrals and informal and formal customer complaints; and responding to other customer account-related inquiries. This workpaper is in scope of the spending accountability report due to ESS emergency call training, emergency and outage calls handled by the CCC, and post filing mitigation program. |

iv. SDG&E Customer Services Capital Variances

The Customer Services witnesses did not sponsor any Capital costs in the TY 2019 GRC.

B. SDG&E Information Technology & Cybersecurity

i. SDG&E Information Technology & Cybersecurity O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------------------|---|-------------------------------------|
| Information Technology & Cybersecurity | | 86,876 | 97,079 | (10,203) | -11% | | | | | | | |
| | | 74,077 | 88,436 | (14,360) | -16% | | | | | | | |
| IT Applications NSS | Non-RAMP | 14,060 | 19,719 | (5,660) | -29% | | | | | | Yes | No |
| IT Infrastructure NSS | Non-RAMP | 8,221 | 13,604 | (5,383) | -40% | | | | | | Yes | No |
| Telecom Field Voice - SDG&E | Non-RAMP | 1,303 | 2,298 | (995) | -43% | 9 | 15 | (6) | -41% | FTE | No | Yes |
| Enterprise Integration Services | Non-RAMP | 1,596 | 1,858 | (262) | -14% | 12 | 14 | (3) | -18% | FTE | No | No |
| SSDS Project Office | Non-RAMP | 838 | 734 | 103 | 14% | 7 | 5 | 2 | 40% | FTE | No | Yes |
| Software Dev - Work Meas Systems | Non-RAMP | 545 | 365 | 180 | 49% | 3 | 3 | 0 | 0% | FTE | No | No |
| Software Dev - Database Administrator | Non-RAMP | 320 | 2,325 | (2,005) | -86% | 2 | 16 | (14) | -87% | FTE | No | Yes |
| Network Communication Services Director | Non-RAMP | 1,157 | 38 | 1,119 | 2955% | 2 | 0 | 2 | 100% | FTE | No | Yes |
| Client Technology & Depot Services | Non-RAMP | 2,182 | 1,860 | 322 | 17% | 10 | 11 | (0) | -4% | FTE | No | No |
| Middleware and Internet Engineering | Non-RAMP | 1,716 | 640 | 1,077 | 168% | 5 | 5 | 0 | 8% | FTE | No | No |
| Infrastructure Eng & Ops Director | Non-RAMP | 550 | 610 | (60) | -10% | 3 | 4 | (2) | -38% | FTE | No | Yes |
| Network/Telecom Services - SDG&E | Non-RAMP | 8,556 | 6,683 | 1,873 | 28% | | | | | | No | No |
| Enterprise Operations | Non-RAMP | 0 | 2 | (2) | -100% | 0 | 1 | (1) | -100% | Employee Cell Phone Charges | No | Yes |
| Server Management | Non-RAMP | 953 | 998 | (45) | -5% | 4 | 8 | (4) | -46% | FTE | No | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | | |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|---|-------------------------------|---------------|-----------------|---------------------|---|-------------------------------------|-----|----|
| Infrastructure Program Office | Non-RAMP | 14 | 414 | (399) | -97% | 0 | 2 | (2) | -100% | FTE | No | Yes | | |
| IT Network Field - LAN/WAN Voice Enterprise Command Center | Non-RAMP | 0 | 1 | (1) | -100% | 0 | 0 | 0 | 0% | FTE | No | No | | |
| | Non-RAMP | 1,862 | 2,345 | (483) | -21% | 12 | 17 | (6) | -32% | FTE | No | Yes | | |
| Shared Software Development Contracts | Non-RAMP | 6,146 | 7,025 | (879) | -13% | This workpaper contains variable O&M software maintenance and renewal costs for multiple IT systems. The maintenance pertains to financial, enterprise, and field operation applications. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| Project Improvement Office-NCS | Non-RAMP | 190 | 243 | (53) | -22% | 2 | 2 | 0 | 0% | FTE | No | No | | |
| Service Delivery - NCS | Non-RAMP | 1,861 | 862 | 999 | 116% | 4 | 7 | (3) | -43% | FTE | No | Yes | | |
| Service Development Program Management | Non-RAMP | 381 | 329 | 52 | 16% | 3 | 3 | 0 | 0% | FTE | No | No | | |
| Customer Analytics System | Non-RAMP | 871 | 546 | 324 | 59% | 3 | 2 | 1 | 45% | FTE | No | Yes | | |
| Field Force Program Delivery Team | Non-RAMP | 440 | 62 | 378 | 613% | 3 | 0 | 3 | 100% | FTE | No | Yes | | |
| SVP & CITO | Non-RAMP | 691 | 483 | 209 | 43% | 2 | 2 | (0) | -15% | FTE | No | No | | |
| Director IT Infrastructure | Non-RAMP | 3,038 | 1,234 | 1,804 | 146% | This workpaper encompasses contracts, managed services, and internal labor related to Data Analytics. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| Infrastr Prgm Office | Non-RAMP | 742 | 851 | (110) | -13% | 5 | 5 | (0) | -8% | FTE | No | No | | |
| Client Services Maintenance & Support | Non-RAMP | 0 | 2 | (2) | -100% | 0 | 1 | (1) | -100% | Employee Cell Phone | No | Yes | | |
| Voice Leased Circuits | Non-RAMP | 926 | 1,095 | (169) | -15% | This workpaper includes multiple types of lines of services from voice to data as well as various third-party support services. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| Managed Services Voice Enterprise | Non-RAMP | 1,224 | 2,694 | (1,470) | -55% | This workpaper includes third party support services to meet required service level agreements on system reliability such as operations support and maintenance of the Avaya Enterprise phone system and call recording software for customer call centers. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| Voice Enterp Support | Non-RAMP | 87 | 565 | (477) | -85% | 1 | 3 | (2) | -77% | FTE | No | Yes | | |
| Client Tech Svcs | Non-RAMP | 0 | 76 | (76) | -100% | 0 | 1 | (1) | -100% | FTE | No | Yes | | |
| IT Portfolio Management | Non-RAMP | 0 | 324 | (324) | -100% | 0 | 2 | (2) | -100% | FTE | No | Yes | | |
| Bi & Analytics Engineering-SAS Contracts | Non-RAMP | 5,651 | 5,414 | 237 | 4% | This workpaper contains software and hardware maintenance costs across multiple contracts/and purchase orders. The cost basis for these systems vary – some are based on capacity, some on user count, some a fixed annual fee. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | | No | No |
| IT & OTI Contracts SS | Non-RAMP | 7,028 | 11,729 | (4,701) | -40% | This workpaper contains O&M software and hardware maintenance costs across multiple contracts and purchase orders. | | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | | | | | | | |
| IT Telecom PMO | Non-RAMP | 44 | 99 | (55) | -55% | 1 | 1 | 0 | 0% | FTE | No | No |
| DCAM Program | Non-RAMP | 19 | 0 | 19 | 100% | 0 | 0 | 0 | 0% | FTE | No | No |
| IT Serv Contin Mgmt | Non-RAMP | 244 | 0 | 244 | 100% | 2 | 0 | 2 | 100% | FTE | No | Yes |
| Infrastructure Portf | Non-RAMP | 225 | 0 | 225 | 100% | 1 | 0 | 1 | 100% | FTE | No | Yes |
| SDG&E Network Engineering | Non-RAMP | 395 | 308 | 87 | 28% | 3 | 1 | 2 | 150% | FTE | No | Yes |
| Cybersecurity | | 12,799 | 8,643 | 4,156 | 48% | | | | | | | |
| Security Policy and Awareness | Cybersecurity risk and vulnerability | 1,599 | 1,075 | 523 | 49% | 8 | 8 | 0 | 0% | FTE | No | No |
| Director - Information Security | Cybersecurity risk and vulnerability | 513 | 412 | 101 | 24% | 2 | 2 | 0 | 5% | FTE | No | No |
| Security Engineering | Cybersecurity risk and vulnerability | 2,487 | 1,611 | 875 | 54% | 14 | 10 | 4 | 37% | FTE | No | Yes |
| Security Operations | Cybersecurity risk and vulnerability | 2,918 | 1,974 | 944 | 48% | 19 | 16 | 3 | 19% | FTE | No | No |
| Critical Infrastructure Protection | Cybersecurity risk and vulnerability | 4,017 | 3,103 | 914 | 29% | | | | | | No | No |
| Critical Infrastructure Protection | Incremental maintenance costs associated with Grid Modernization capital projects | 223 | 442 | (219) | -50% | | | | | | No | No |
| Sub-Total Critical Infrastructure Protection | | 4,240 | 3,545 | 696 | 20% | | | | | | No | |
| Information Security Programs | Cybersecurity risk and vulnerability | 323 | 25 | 298 | 1196% | 2 | 0 | 2 | 100% | FTE | No | Yes |
| Identity & Access Management | Cybersecurity risk and vulnerability | 719 | 0 | 719 | 100% | 5 | 0 | 5 | 100% | FTE | No | Yes |

ii. SDG&E Information Technology & Cybersecurity O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|---|
| IT Applications NSS | Non-RAMP | Yes | No | Negotiated significant reduction in O&M for legacy Customer Information System (CIS) maintenance and enhancements due to new CIS system replacement. In addition, the CISCO Wellness initiative was completed prior to 2020. |
| IT Infrastructure NSS | Non-RAMP | Yes | No | Shifted work from O&M to infrastructure capital projects in response to significant infrastructure outage. In addition, Microsoft Office 365 costs were capitalized due to increased functionality. |
| Telecom Field Voice - SDG&E | Non-RAMP | No | Yes | Internal Resources were charging more labor to Network capital projects undertaken to reduce technical debt. |
| SSDS Project Office | Non-RAMP | No | Yes | Internal resources were charging less labor to Capital as they were working on the IT strategy and roadmap planning that is O&M work. |
| Software Dev - Database Administrator | Non-RAMP | No | Yes | Reduction in FTEs is driven by a shift from internal labor to external resources. |
| Network Communication Services Director | Non-RAMP | No | Yes | Additional costs to operationalize and run a center of excellence around the scanning, analysis, validation, and remediation of open vulnerabilities, as well as increase compliance with Cybersecurity policies & procedures. In addition, implemented improved process and automation around IT Change management in order to reduce risk, decrease unplanned outages and downtime associated with IT related production changes. FTEs added to focus on design, build, implementation and management of system-wide network and telecommunications infrastructure. |
| Infrastructure Eng & Ops Director | Non-RAMP | No | Yes | Additional FTEs forecasted in director cost center were filled in other groups within the Utility and Financial Application Operation department. |
| Enterprise Operations | Non-RAMP | No | Yes | This cost center is now retired, the trailing employee cell phone charges were cancelled. |
| Server Management | Non-RAMP | No | Yes | Reduction in FTEs is driven by a shift from internal labor to external resources. This shift was due to the IT |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---------------------------------------|--------------------------------------|---|-------------------------------------|---|
| | | | | outsourced managed services agreement, where internal resources would focus on Capital-related work. |
| Infrastructure Program Office | Non-RAMP | No | Yes | Reduction in FTEs due to the launch of the Data Center and Application Modernization (DCAM) program became the hub for Infrastructure Project Management work. |
| Enterprise Command Center | Non-RAMP | No | Yes | Reduction in FTEs is driven by a shift from internal labor to external resources. |
| Service Delivery - NCS | Non-RAMP | No | Yes | Reduction in FTEs is driven by a shift from internal labor to external resources. |
| Customer Analytics System | Non-RAMP | No | Yes | Additional FTE needed for architectural framework support. |
| Field Force Program Delivery Team | Non-RAMP | No | Yes | Additional FTEs due to de-centralization of the Portfolio Management office. |
| Client Services Maintenance & Support | Non-RAMP | No | Yes | This cost center is now retired, the trailing employee cell phone charges were cancelled. |
| Voice Enterp Support | Non-RAMP | No | Yes | Reduction in FTEs is driven by a shift from internal labor to external resources. |
| Client Tech Svcs | Non-RAMP | No | Yes | This cost center is now retired, the function continuing in the Service Delivery - NCS workpaper. |
| IT Portfolio Management | Non-RAMP | No | Yes | These 2 positions have been eliminated due to a restructuring of the Portfolio Management Office. |
| IT&OTI Contracts SS | Non-RAMP | Yes | No | Lower than forecasted software and hardware costs resulting from successful contract negotiations and shift to IT capital project work. |
| IT Serv Contin Mgmt | Non-RAMP | No | Yes | Additional resources added focusing primarily on oversight and governance for the IT service continuity management function. |
| Infrastructure Portf | Non-RAMP | No | Yes | Additional resources added focusing primarily on oversight and governance for the Infrastructure portfolio. |
| SDG&E Network Engineering | Non-RAMP | No | Yes | Additional FTEs needed to support the growth due to new investments impacting the network infrastructure and operational needs in the network engineering function. |
| Security Engineering | Cybersecurity risk and vulnerability | No | Yes | Additional FTEs to support current Cybersecurity workforce needs. The Cybersecurity resources are working closely with our cloud Agile Development |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------|--------------------------------------|---|-------------------------------------|---|
| Information Security Programs | Cybersecurity risk and vulnerability | No | Yes | Methodology and application migrations, Industrial Control Systems to ensure cybersecurity risks are minimized. Current FTEs re-prioritized to higher O&M labor to meet business requirements for oversight of contracts and maintenance activities. |
| Identity & Access Management | Cybersecurity risk and vulnerability | No | Yes | Additional resources added focusing primarily on the support of evolving needs of identity life-cycle management process improvements, access and governance enforcement, engineering of new processes, and increasing our solution migration for broader cloud adoption. |

iii. SDG&E Information Technology & Cybersecurity O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--------------------------|--|--|--|
| IT Applications NSS | Non-RAMP | SDG&E-24-R CRO-11 WP IIT001.000 | SDG&E-25 TLB/WJE-13 WP IIT002.000 | The Non-Shared SDG&E IT Applications costs represent labor and non-labor for systems where 100% of the activities directly support SDG&E. The types of systems supported in this area include customer field operations, work order management, smart meter data management, customer billing, service order routing, scheduling and dispatching, revenue cycle processing, and customer assistance and customer contact functions, including self-service capabilities via MyAccount. |
| IT Infrastructure NSS | Non-RAMP | SDG&E-24-R CRO-12 WP IIT002.000 | SDG&E-25 TLB/WJE-14 WP IIT004.000 | These Non-Shared SDG&E IT Infrastructure costs represent labor and non-labor for the infrastructure area where 100% of the activities are for SDG&E. These costs are typically related to providing service to SDG&E-only facilities (e.g., construction and operations districts, and customer contact centers) and include network engineering infrastructure support. |
| Telecom Field Voice - SDG&E | Non-RAMP | SDG&E-24-R CRO-14 WP 2100-0207.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | This cost center is responsible for the installation and maintenance of telecom equipment including PBXs, |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|--|---|---|
| | | | | microwave, data and mobile radio services across the SDG&E service territory, including Corporate Center (parent). |
| SSDS Project Office | Non-RAMP | SDG&E-24-R CRO-14 WP 2100-3074.000 | SDG&E-25 TLB/WJE-17 WP 2100-3073.000 | This cost center is responsible for architecture and design of new systems and major enhancements to existing systems in the Shared application services department. Business Units supported include SDG&E and SoCalGas. |
| Software Dev - Database Administrator | Non-RAMP | SDG&E-24-R CRO-14 WP 2100-3091.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | This cost center provides maintenance and enhancement support for system wide database administration. |
| Network Communication Services Director | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3095.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | This cost center includes the Director of ITOTI and his administrative support. Activities include department level management for plan, design, build, implementation and management of system-wide network and telecommunications infrastructure. |
| Infrastructure Eng & Ops Director | Non-RAMP | SDG&E-24-R CRO-14 WP 2100-3102.000 | SDG&E-25 TLB/WJE-17 WP 2100-3073.000 | The director cost center manages the work activities and prioritization of the UOFAS department for project, operational and system support activities. |
| Enterprise Operations | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3334.000 | Not requested | This Operations support group is responsible for providing 24/7 coverage and maintainability for distributive UNIX class servers at prime locations of Rancho Bernardo, Century Park, San Diego Headquarters, Monterrey Park, and Gas Company Tower. This group also has the same responsibility for remote locations, such as company bases and payment offices. |
| Server Management | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3334 | SDG&E-25 TLB/WJE-18 & 19 WP 2100-0207.000 & 2100-0460.000 | This Operations support group is responsible for providing 24/7 coverage and maintainability for distributive UNIX class servers at prime locations of RB, CP, SD Headquarters, MPK, and GCT. This group also has this same responsibility for remote locations, such as company Bases and Payment Offices. |
| Infrastructure Program Office | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3498.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | The Infrastructure PMO provides project management and development for IT Related Projects enterprise wide. |
| Enterprise Command Center | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3502.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | The Enterprise command center organization provides 24/7 operation system-wide services to ensure network/telecom availability for all related business applications and services |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|--------------------------|--|---|---|
| | | | | that are dependent upon voice, data, microwave, etc., category of communication services. |
| Service Delivery - NCS | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3684.000 | SDG&E-25 TLB/WJE-18 WP 2100-3097.000 | Network and systems engineering, operations and maintenance activities to support the messaging and collaboration infrastructure, including E-mail, Instant Message, Conferencing and SharePoint services on a system-wide basis across Corporate Center, SDG&E, and SoCalGas. |
| Customer Analytics System | Non-RAMP | SDG&E-24-R CRO-15 WP 2100-3699.000 | SDG&E-25 TLB/WJE- 19 WP 2100-0460.000 | This cost center provides leadership in establishing policies, strategies, and architectural framework that help guide technology adoptions and alignment with the overall business. It develops awareness and statements of direction for emerging technology opportunities to enable key business strategies and goals. |
| Field Force Program Delivery Team | Non-RAMP | SDG&E-24-R CRO-15 WP 2100-3713.000 | SDG&E-25 TLB/WJE-17 WP 2100-3073.000 | This cost center is a part of the Project Management Office (PMO) dedicated to the build of IT Assets. It specifically manages the programming and coding for the various capital application builds. |
| Client Services Maintenance & Support | Non-RAMP | Emergent | Not requested | This cost center performs system services on a system-wide basis across Corporate Center, SDG&E, and SoCalGas. |
| Voice Enterp Support | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3885.000 | SDG&E-25 TLB/WJE-17 WP 2100-3073.000 | This cost center supports the managed services of Enterprise Voice support costs, Customer Contact Centers Voice and Computer Telephony Integration support costs and the Enterprise and Customer Contact Centers call recording support costs. |
| Client Tech Svcs | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3888.000 | Not requested | This cost center manages Client Technology Support and Solutions, SemptraHelp & IT Service Management, and IT Communications system-wide. |
| IT Portfolio Management | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3900.000 | Not requested | This cost center includes the PMO Director and her administrative support. The IT PMO & QA Director provides project management and development for IT Related Projects enterprise wide, as well as documentation for all business case and concepts. Also, project management for several SDG&E-funded projects. |
| IT&OTI Contracts SS | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3921.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | This cost center will contain all Computing Infrastructure contract costs that are shared between SDG&E, SoCalGas, and |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|--------------------------------------|--|--|---|
| | | | | the Parent. These contracts support system-wide resources and benefit the utilities and parent. |
| IT Serv Contin Mgmt | Non-RAMP | Emergent | SDG&E-26 LRM - 15 WP 2100-3101.000 | Oversight and governance for the IT service continuity management function. |
| Infrastructure Portff | Non-RAMP | Emergent | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | Oversight and governance for the Infrastructure portfolio. |
| SDG&E Network Engineering | Non-RAMP | SDG&E-24-R CRO-14 to CRO-15 WP 2100-3975.000 | SDG&E-25 TLB/WJE-18 WP 2100-0207.000 | Provides IT Network Engineering services, including preventive maintenance activities on network infrastructure (i.e., hardware, software, and facilities). |
| Security Engineering | Cybersecurity risk and vulnerability | SDG&E 25 GW-30 to GW-33 WP 2100-3774.000 | SDG&E-26 LRM - 15 WP 2100-3101.000 | The Security Engineering section provides enterprise-scale security functions and integration services for business, operational, and IT technology assets. |
| Information Security Programs | Cybersecurity risk and vulnerability | SDG&E 25 GW-25 to GW-27 WP 2100-3976.000 | SDG&E-26 LRM - 15 WP 2100-3101.000 | This cost center contains provides support for the Information Security portfolio of capital projects and maintenance contracts. |
| Identity & Access Management | Cybersecurity risk and vulnerability | Emergent | SDG&E-26 LRM - 15 WP 2100-3101.000 | This cost center is responsible for expanding opportunities to improve the identity lifecycle with emphasis in onboarding, continuous end-user authentication improvements, new policy frameworks and standards for Identity & Access Management at the utilities, expanding governance initiatives for access enforcement, furthering our integration models for application and data synchronization, and alignment and support of strategic company initiatives. |

iv. SDG&E Information Technology & Cybersecurity Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|-------------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|----|
| IT & Cybersecurity | | 130,138 | 75,318 | 54,820 | 73% | | | | | | | | |
| Total Information Technology | | 119,162 | 72,090 | 47,073 | 65% | | | | | | | | |
| IT - Enterprise - Application | Records Management | 15,122 | 9,683 | 5,440 | 56% | This workpaper for the Application - RAMP portfolio contains various projects within the following categories: 1. Work Management and Outage reporting modernizations 2. Geographic Information System (GIS) applications, portals and mobile communications modernization. | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|-----------------------------------|----------------------|---------------------------------|---------------------|-------------|--|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | |
| IT - Enterprise - Application | Electric Infrastructure Integrity | 4,580 | 0 | 4,580 | 100% | This workpaper for the Application - EII portfolio contains various projects that relate to the modernization of decision support for capital and O&M maintenance and replacement strategies. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | No | No |
| IT - Enterprise - Application | Non-RAMP | 44,124 | 6,681 | 37,443 | 560% | This workpaper for the Application portfolio contains various projects within the following categories: 1. CAISO-mandated 2. Outage & Reliability reporting modernization 3. Application Modernization & Vulnerability Reduction 4. Scheduling & Dispatch modernization 5. Builder Customer portal modernization 6. Data Foundation. Digitalization and Analytics Solution 7. Equipment inspections and vegetation management. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |
| Sub-Total IT Applications | | 63,827 | 16,364 | 47,463 | 290% | | | | | | Yes | |
| IT - Enterprise - Network - RAMP | Records Management | 0 | 3,010 | (3,010) | -100% | This workpaper for the Network - RAMP portfolio contains various projects which relate to the modernization of the Smart Meter analytics platform that enables data processing, enhanced reporting and analytics capabilities. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | No | No |
| IT - Enterprise - Network | Non-RAMP | 29,111 | 38,458 | (9,347) | -24% | This workpaper for the Network portfolio contains various projects within the following categories: 1. Field Area Network modernization 2. Wide Area Network modernization 3. Local Area Network modernization 4. Network communications and monitoring modernization 5. Network core modernization The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |
| Sub-Total IT Network | | 29,111 | 41,468 | (12,357) | -30% | | | | | | Yes | |
| IT - Enterprise - Infrastructure | Non-RAMP | 23,662 | 5,649 | 18,013 | 319% | This workpaper for the Infrastructure portfolio contains various projects within the following categories: 1. Virtual Desktop Infrastructure modernization 2. Data Center modernization 3. Storage modernization and capacity enhancements 4. Enterprise PC refresh The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |
| Sub-Total IT - Enterprise - Infrastructure | | 23,662 | 5,649 | 18,013 | 319% | | | | | | Yes | |
| Customer Services | Non-RAMP | 2,563 | 8,609 | (6,046) | -70% | This workpaper for the Customer Services portfolio contains various projects within the following categories: 1. Smart Meter modernizations 2. Customer Care Center modernization The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| IT - Enterprise - Cyber - RAMP | Cybersecurity | 10,976 | 3,229 | 7,747 | 240% | This workpaper for the Cybersecurity portfolio contains various projects within the following categories: 1. Internal Defense 2. Perimeter Defense 3. Obsolete IT Systems 4. Operational Technology (OT) Cybersecurity The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |

v. SDG&E Information Technology & Cybersecurity Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|----------------------------------|--------------------------|---|-------------------------------------|---|
| IT - Enterprise - Application | Records Management | Yes | No | Variance due to enterprise renewal of GIS Software. |
| IT - Enterprise - Application | Non-RAMP | Yes | No | Variance due to emergent needs and new technology availability driving business value, such as equipment inspections and vegetation management, Application Vulnerability & Modernization and Data Foundation and Analytics Solution. |
| IT - Enterprise - Network | Non-RAMP | Yes | No | Variance due to accelerated schedule in 2020 on network communications and monitoring modernization. |
| IT - Enterprise – Infrastructure | Non-RAMP | Yes | No | Variance due to significant infrastructure demand resulting in increased spend in the infrastructure portfolio. In addition, replacement of end of life/support for Enterprise PCs contributed to the variance. |
| Customer Services | Non-RAMP | Yes | No | Variance due to deferral of Smart Meter upgrade for SDG&E territory. |
| IT - Enterprise - Cyber - RAMP | Cybersecurity | Yes | No | Variance due to emergent needs to address SAP vulnerability management system and Data Protection Services. |

vi. **SDG&E Information Technology & Cybersecurity Capital Workpaper Descriptions and GRC Testimony Locations**

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------------|--------------------------|--------------------------------|---|---|
| IT - Enterprise - Application | Records Management | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-25 TLB/WJE-21 to TLB/WJE-75 | This workpaper for the Application - RAMP portfolio contains various projects within the following categories: 1. Work Management and Outage reporting modernizations 2. GIS applications, portals and mobile communications modernizations. |
| IT - Enterprise - Application | Non-RAMP | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-25 TLB/WJE-21 to TLB/WJE-75 | This workpaper for the Application portfolio contains various projects within the following categories: 1. CAISO-mandated 2. Outage & Reliability reporting modernization 3. Application Modernization & Vulnerability Reduction 4. Scheduling & Dispatch modernization 5. Builder Customer portal modernization 6. Data Foundation. Digitalization and Analytics Solution 7. Equipment inspections and vegetation management. |
| IT - Enterprise - Network | Non-RAMP | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-25 TLB/WJE-21 to TLB/WJE-75 | This workpaper for the Network portfolio contains various projects within the following categories: 1. Field Area Network modernization 2. Wide Area Network modernization 3. Local Area Network modernization 4. Network communications and monitoring modernization 5. Network core modernization |
| IT - Enterprise -- Infrastructure | Non-RAMP | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-25 TLB/WJE-21 to TLB/WJE-75 | This workpaper for the Infrastructure portfolio contains various projects within the following categories: 1. Virtual Desktop Infrastructure modernization 2. Data Center modernization 3. Storage modernization and capacity enhancements 4. Enterprise PC refresh |
| Customer Services | Non-RAMP | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-25 TLB/WJE-21 to TLB/WJE-75 | This workpaper for the Customer Services portfolio contains various projects within the following categories: 1. Smart Meter modernizations 2. Customer Care Center modernization |
| IT - Enterprise - Cyber - RAMP | Cybersecurity | SDG&E-25-R CRO-37 to CRO-53 | SDG&E-26 LRM-19 to LRM-27 | The Cybersecurity portfolio is composed of projects within the following categories: |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|---|
| | | | | 1. Internal Defense 2. Perimeter Defense 3. Obsolete IT Systems 4. Operational Technology (OT) Cybersecurity |

C. SDG&E Support Services
i. SDG&E Support Services O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Support Services | | 38,293 | 39,314 | (1,021) | -3% | | | | | | | |
| Environmental | | 5,189 | 5,304 | (115) | -2% | | | | | | | |
| Environmental SDG&E | Non-RAMP | 5,189 | 5,304 | (115) | -2% | 33 | 28 | 5 | 18% | FTE | No | No |
| NSS Cost Center | | | | | | | | | | | | |
| Real Estate and Facilities | | 33,104 | 34,010 | (906) | -3% | | | | | | | |
| SDG&E Facility Operations | Non-RAMP | 5,389 | 5,399 | (10) | 0% | 12 | 13 | (1) | -6% | FTE | No | No |
| SDG&E Facility Operations | Physical Security | 3,031 | 4,012 | (981) | -24% | 60 | 91 | (31) | -34% | Security Guards | No | Yes |
| Sub-Total SDG&E Facility Operations | | 8,420 | 9,410 | (990) | -11% | | | | | | No | |
| Land Services | Non-RAMP | 908 | 780 | 128 | 16% | 2 | 3 | (1) | -37% | FTE | No | Yes |
| SDG&E Rents & Maintenance | Non-RAMP | 19,707 | 18,420 | 1,287 | 7% | 31,000 | 28,400 | 2,600 | 9% | Sq Footage | No | No |
| RE Planning | Non-RAMP | 486 | 1,193 | (706) | -59% | 3 | 5 | (2) | -40% | FTE | No | Yes |
| HQ Rent & Facilities Maintenance | Non-RAMP | 1,165 | 2,495 | (1,329) | -53% | 4,200 | 7,800 | (3,600) | -46% | Sq Footage | No | Yes |
| Facilities & Capital Programs - Admin | Non-RAMP | 51 | 145 | (94) | -65% | 1 | 1 | 0 | 0 | FTE | No | No |
| RE Resources | Non-RAMP | 300 | 552 | (253) | -46% | 1 | 2 | (1) | -60% | FTE | No | Yes |
| Facilities Operations South Manager | Non-RAMP | 869 | 552 | 317 | 57% | 5 | 4 | 1 | 30% | FTE | No | Yes |
| RB Data Center | Non-RAMP | 658 | 449 | 209 | 46% | 12,000 | 7,100 | 4,900 | 69% | Sq Footage | No | Yes |
| RE Planning-Mac | Non-RAMP | 539 | 13 | 526 | 4146% | 2 | 0 | 2 | 100% | FTE | No | Yes |

ii. SDG&E Support Services O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------------|--------------------------|---|-------------------------------------|---|
| SDG&E Facility Operations | Physical Security | No | Yes | The underrun in the unit variance for this workpaper is due to less guards at our facilities as a result of SDG&E employees working from home during the pandemic. |
| Land Services | Non-RAMP | No | Yes | The underrun in the unit variance for this workpaper is a result of shifted focus to capital electric distribution land easements. |
| RE Planning | Non-RAMP | No | Yes | The underrun in the unit variance for this workpaper is due to a reorganization that split this department into a second group associated with move management functions (RE Planning-MAC). Two out of the five FTE's that were authorized in this workpaper have been reassigned to the RE Planning-MAC workpaper. |
| HQ Rent & Facilities Maintenance | Non-RAMP | No | Yes | The underrun in the unit variance for this workpaper is a result of less maintenance expenses due to a lower occupancy in the Sempra HQ building. |
| RE Resources | Non-RAMP | No | Yes | The underrun in the unit variance for this workpaper is a result of a shifted focus to capital in order to develop the software system module for Building Information Management (BIM) Archibus platform to manage facility operations. |
| Facilities Operations South Manager | Non-RAMP | No | Yes | The overrun in the unit variance is due to the addition of a resource coordinator to manage facility work order requests. |
| RB Data Center | Non-RAMP | No | Yes | The overrun in the unit variance for this workpaper is due to occupying additional space at the Rancho Bernardo (RB) Data Center to accommodate additional hosting of applications, servers and equipment. |
| RE Planning-Mac | Non-RAMP | No | Yes | The overrun in the unit variance for this workpaper is due to the reorganization of the Real Estate (RE) Planning group. The authorized dollars and units for this workpaper were included in the authorized amounts of the RE Planning workpaper. |

iii. SDG&E Support Services O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------------|--------------------------|--|--|---|
| SDG&E Facility Operations | Physical Security | SDG&E-22 RDT-7 to RDT-9 WP 1RE001.000 | SDG&E-23 DT-7 to DT-18 WP 1RE004.000 | This workpaper funds the company contracted security guards who secure and physically protect assets and people. |
| Land Services | Non-RAMP | SDG&E-22 RDT-16 to RDT-17 WP 1RE002.000 | SDG&E-23 DT-10 to DT-13 WP 1RE002.000 | Land Services consists of the Land Management, Right of Way and Survey departments which provide for protection and enforcement of land rights, securing easements and right of way, as well as the management of survey contractors. |
| RE Planning | Non-RAMP | SDG&E-22 RDT-23 to RDT-24 WP 2100-0706.000 | SDG&E-23 DT-25 to DT-26 WP 2100-0706.000 | The Real Estate Planning group provides space planning services for SDG&E and Corporate Center. Long- term facility space plans are developed with operating and support departments and alternatives are explored with respect to property acquisitions and facility expansions or upgrades. |
| HQ Rent & Facilities Maintenance | Non-RAMP | SDG&E-22 RDT-25 to RDT-26 WP 2100-0708.000 | SDG&E-23 DT-19 to DT-21 WP 2100-0708.000 | This cost center manages the building maintenance services for the Semptra HQ building. |
| RE Resources | Non-RAMP | SDG&E-22 RDT-24 to RDT-25 WP 2100-3303.000 | SDG&E-23 DT-19 to DT-21 WP 2100-3323.000 | Real Estate Resources supports the workplace technology tools that supports and manage all aspects of Corporate Real Estate including maintenance management, sustainability management, and space planning. |
| Facilities Operations South Manager | Non-RAMP | SDG&E-22 RDT-20 to RDT-21 WP 2100-3323.000 | SDG&E-23 DT-19 to DT-21 WP 2100-3323.000 | This cost center contains the area manager and support staff for the facility operations function at SDG&E. |
| RB Data Center | Non-RAMP | SDG&E-22 RDT-20 to RDT-21 WP 2100-3610.000 | SDG&E-23 DT-19 to DT-21 WP 2100-3323.000 | This cost center represents the facility maintenance costs for the Rancho Bernardo Data Center and the Rancho Bernardo Annex which are occupied by a portion of SDG&E's IT staff. |
| RE Planning-Mac | Non-RAMP | SDG&E-22 RDT-23 to RDT-24 WP 2100-3977.000 | SDG&E-23 DT-25 to DT-26 WP 2100-0706.000 | This cost center contains the costs associated with coordinating employee moves involving furniture and equipment. |

iv. SDG&E Support Services Capital Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | | |
|---|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|-----|----|
| Support Services - Real Estate, Land Services & Facilities | | | | | | | | | | | | | |
| WP Activity Description | 49,438 | 48,224 | 1,213 | 3% | | | | | | | | | |
| Land Blanket | 316 | 344 | (29) | -8% | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket includes funding for the installation of new landscaping or renovation of existing landscape and irrigation systems and other improvements on existing Company property and various Company property works (i.e., Substations, transmission line right-of-way) including but not limited to fencing, masonry screening or retaining walls, access gates, signs, grading, paving, drainage improvements, landscaping and landscape irrigation. | | | | | | | No | No |
| Structures and Improvements | 10,878 | 4,534 | 6,344 | 140% | Units not available for these workpapers due to highly diverse project scope and the absence of like units that would be comparable over a multi-year period. This capital blanket funds building shell modifications, site improvements and other facility upgrades of a structural, civil or weatherproofing nature. These projects vary year to year based on need, but address the capital replacement or addition of basic, individual interior and exterior facilities construction components, including site lighting, fencing, gates, paving, roofing, canopies, training areas, windows and storage racking or sheds. | | | | | | | Yes | No |
| Environmental/Safety Blanket | 1,833 | 1,571 | 262 | 17% | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket funds the installation of concrete pads, hazardous waste storage and other requirements to mitigate environmental risks. Safety projects vary in nature but can include communication systems, fall protection, on-campus traffic improvements, canopies, or any other improvements to reduce employee risk. | | | | | | | No | No |
| Environmental/Safety Blanket | 1,835 | 165 | 1,670 | 1012% | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket funds improvements to meet stormwater management regulations. Stormwater compliance includes physical changes to the site including drainage control, curbs and berms, coverings to manage the flow of stormwater and other best management practices. | | | | | | | No | No |
| Sub-Total Environmental/Safety Blanket | 3,668 | 1,736 | 1,932 | 111% | | | | | | | | No | No |
| Misc. Equipment Blanket | 2,335 | 1,796 | 540 | 30% | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket funds the purchase and installation of miscellaneous equipment that does not fall under the scope of any other | | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Imputed Authorized | | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---------------------------------------|----------------------|---------------------------------|---------------------|------------|-------------------------|---|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | Units | Units | | | | | |
| | | | | | | | capital project. Types of equipment included in this budget code are replacements of small equipment such as kitchen, audio-visual, specialized mechanical equipment used in the fleet garages. | | | | | |
| Security Systems | Physical Security Systems | 5,061 | 4,185 | 876 | 21% | | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket funds projects that address the security of the company employees, operations, and assets. Common project types covered in this budget code are card readers, cameras, video recorders, physical barriers, and controlled automated gates and turnstiles. | | No | No | No | |
| Infrastructure & Reliability | Non-RAMP | 12,558 | 5,861 | 6,697 | 114% | | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket funds the purchase and installation of items such as chillers, boilers, air handlers, heating, ventilation and air conditioning (HVAC) replacements, generators, UPS (Uninterruptible Power Supply) and building management system (BMS) systems, electrical distribution systems and computer room infrastructure. | | Yes | No | No | |
| Remodel/Relocate/Reconfig Blanket | Non-RAMP | 11,044 | 16,945 | (5,901) | -35% | | Units not available for these workpapers due to highly diverse project scope and the absence of like units that would be comparable over a multi-year period. The remodel, reconfigure, and relocation blanket budget funds tenant improvement construction, spatial remodels and associated workstation moves, and changes needed to provide adequate and efficient office space and work environments for employees. | | Yes | No | No | |
| Remodel/Relocate/Reconfig Blanket | Modernization of Grid Control Centers | 0 | 3,453 | (3,453) | -100% | | Units not available for these workpapers due to highly diverse project scope and the absence of like units that would be comparable over a multi-year period. The scope of the project associated with this RAMP mitigation included the installation of new video display systems, operator consoles, furniture and other accessories. | | No | No | No | |
| Business Unit Expansion Blanket 2017 - 2019 | Non-RAMP | 1,918 | 8,073 | (6,155) | -76% | | Units not available for these workpapers due to highly diverse project scope and the absence of like units that would be comparable over a multi-year period. The purpose of this blanket is to fund building and facility expansions and improvements that are necessary to adequately support growing corporate business objectives and initiatives. The projects under this blanket include master planning, expansion, relocation, building construction and facility consolidation projects at various company buildings and facilities. | | Yes | No | No | |
| Archibus Business Systems Improvements | Non-RAMP | 1,660 | 1,298 | 362 | 28% | | Units not available for this workpaper due to highly diverse nature of the system development that takes place over a multi-year period. Archibus is an integrated work management system used by Real Estate & Facilities | | No | No | No | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|--|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| | | | | | | employees to capture preventative maintenance for real estate assets and facilities. | | | | support requests and manage real estate assets and facilities. | | |

v. SDG&E Support Services Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------------|--------------------------|---|-------------------------------------|---|
| Structures and Improvements | Non-RAMP | Yes | No | This overrun was driven by the continued investments in high priority reliability, maintenance and safety projects, primarily the replacement of end-of-life roofing, storage improvements, and concrete and asphalt paving projects at company construction and operations centers. |
| Infrastructure & Reliability | Non-RAMP | Yes | No | This overrun was driven by the re-prioritization of high priority infrastructure reliability projects from other facilities budget codes in 2021, including continued investments in the electrical system reliability at the Rancho Bernardo Data Center as well as HVAC system, generator replacements, Building Management System (BMS) and fire protection improvements at various critical SDG&E facilities. |
| Remodel/Relocate/Reconfig Blanket | Non-RAMP | Yes | No | This underrun was driven primarily by the deferral of the tenant improvement projects at Century Park Buildings 4 & 5. The tenant improvement projects were deferred so that SDG&E could evaluate and develop the needs of the post-pandemic work environment and design the projects accordingly. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|---|
| Business Unit Expansion Blanket 2017 - 2019 | Non-RAMP | Yes | No | This underrun was driven by extended ministerial agency permit review and prolonged onsite easement negotiations with the City of San Diego related to interior and exterior storage expansion projects at Miramar. |

vi. SDG&E Support Services Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--------------------------|--|---------------------------------|---|
| Structures and Improvements | Non-RAMP | SDG&E - 23 RDT-29 Category B - WP 701 | SDG&E - 22 RDT-29 WP 701A | This workpaper funds minor building modifications, upgrades and facility improvements to adequately support corporate business initiatives, to extend the life of the asset, or increase the functionality of a building or site. Small projects under \$1 million are bundled, when possible, for economies of scale in sourcing. These projects vary year to year based on need, but address the capital replacement or addition of basic, individual interior and exterior facilities construction components, including site lighting, fencing, gates, paving, roofing, flooring, windows and storage racking or sheds. Each year's requirements are prioritized to manage and protect the facility assets, keep the employees safe and optimize real estate value. Scope of work may include modernization projects and/or offer best alternatives for cost avoidance compared to other scenarios. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|--|---------------------------------|---|
| Infrastructure & Reliability | Non-RAMP | SDG&E - 23 RDT-33 Category F - WP 708 | SDG&E - 22 RDT-33 WP 708A | Units not available for this workpaper due to highly diverse project scope and the absence of like units that would be comparable year over year. This capital blanket funds the purchase and installation of items such as Chillers, Boilers, Air Handlers, HVAC Replacements, Generators, UPS systems, Electrical Distribution Systems and Computer Room Infrastructure. |
| Remodel/Relocate/Reconfig Blanket | Non-RAMP | SDG&E - 23 RDT-34 Category G - WP 709 | SDG&E - 22 RDT-34 WP 709A | This workpaper funds tenant improvement construction, spatial remodels and associated workstation moves and changes needed to provide adequate and efficient office space and work environments for employees. Requirements are based on business needs and functionality needed to meet business and resource objectives. Space standards and guidelines are used to manage space allocations and modifications effectively in reconfigurations. Ergonomics are considered in the upgrades to provide improved working conditions and safety for employees |
| Business Unit Expansion Blanket 2017 - 2019 | Non-RAMP | SDG&E - 23 RDT-35 Category F - WP 710 | SDG&E - 22 RDT-41 WP 710A | This workpaper funds the building and facility expansions and improvements that adequately support corporate business objectives and initiatives. The projects identified include Master Planning, Expansion, Relocation and Facility Consolidation projects at various existing company buildings/facilities or those newly acquired or leased. These projects would satisfy current and future space requirements to appropriately house employees and provide expanded workspace and storage capacities to keep pace with company growth. |

D. SDG&E Administrative & General

i. SDG&E Administrative & General O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|------------------------|---|-------------------------------------|
| WP Activity Description Administrative & General | | 78,271 | 61,514 | 16,757 | 27% | | | | | | | |
| Accounting & Finance, Legal, Regulatory Affairs, External Affairs | | 512 | 836 | (323) | -39% | | | | | | | |
| Operations Cost Center -USS- Controllers-Business Controls | Non-RAMP | 387 | 273 | 114 | 42% | 2.9 | 3.0 | (0) | -3% | FTE | No | No |
| Operations Cost Center -USS- Controllers-Business Controls | Consulting expertise to improve records management program | 125 | 563 | (438) | -78% | | | | | | No | No |
| Sub-Total Operations Cost Center -USS- Controllers-Business Controls | | 512 | 836 | (323) | -39% | | | | | | No | |
| Compensation & Benefits | | 166 | 293 | (128) | -43% | | | | | | | |
| Health Benefits - Emp Assistance Program | Non-RAMP | 166 | 293 | (128) | -43% | 4,668 | 4,515 | 153 | 3% | Average Employee Count | No | No |
| Corporate Center - General Administration | | 73,932 | 52,807 | 21,125 | 40% | | | | | | | |
| SECC Outside Services Employees - F923.1 | Non-RAMP | 72,466 | 50,005 | 22,461 | 45% | | | | | | Yes | No |
| SECC Outside Services Employees - F923.1 | Records Management | 108 | 108 | (0) | 0% | | | | | | No | No |
| SECC Outside Services Employees - F923.1 | Workplace Violence/Corporate Security | 1,358 | 1,358 | 0 | 0% | | | | | | No | No |
| SECC Outside Services Employees - F923.1 | Cybersecurity | 0 | 1,336 | (1,336) | -100% | | | | | | No | No |
| Sub-Total SECC Outside Services Employees - F923.1 | | 73,932 | 52,807 | 21,125 | 40% | | | | | | Yes | |
| Risk Management | | 635 | 4,338 | (3,703) | -85% | | | | | | Yes | No |
| Risk Management | Non-RAMP | 635 | 4,338 | (3,703) | -85% | 1 | 1 | 0 | 0% | FTE | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| VP Enterprise Risk Management | Non-RAMP | 418 | 484 | (66) | -14% | 2 | 2 | 0 | 0% | FTE | No | No |
| Operations Risk Management SDG&E | Non-RAMP | 2,607 | 2,756 | (148) | -5% | 1 | 1 | 0 | 0% | FTE | No | No |

ii. SDG&E Administrative & General O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--------------------------|---|-------------------------------------|---|
| SECC Outside Services Employees - F923.1 | Non-RAMP | Yes | No | The variance in 2021 actuals is due to higher than authorized costs allocated to SDG&E by Corporate Center for the LTIP and SERP programs, higher finance and bank fees incurred, net additional staffing/labor and non-labor costs, and an increase in outside legal services. |
| SECC Outside Services Employees - F923.1 | Cybersecurity | No | No | The Cybersecurity group transferred staff from SECC to SDG&E at the end of 2020, thus the 2021 Actuals are reported in the Information Technology and Cybersecurity section. |
| Risk Management | Non-RAMP | Yes | No | Lower than imputed authorized costs are due to the funding for this item being included in SDG&E's TY 2019 GRC as a shared service function. However, in 2020, SoCalGas began directly accounting for portions of the costs for this activity. |

iii. SDG&E Administrative & General O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|---|-------------------------------------|--|
| SECC Outside Services Employees - F923.1 | Non-RAMP | SDG&E-26-R (SCG-28-R) MLD-10 to MLD-14 | SDG&E-27 (SCG-23) DRC-3 to DRC-5 | Corporate center allocated costs include security services provided to protect utility assets and employees, security systems, and the Corporate Security (CSS) department. The CSS department is responsible for the development and management of programs and policies for security systems, security investigations, workplace violence avoidance, as well as crisis and security risk |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|--|-------------------------------------|---|
| | | | | management services. Corporate Center function is also actively involved in activities designed to mitigate the identified risk of workplace violence by supporting the planning and incident management investigation as well as programs designed to mitigate the risk event before it occurs. This includes training, investigation, employee awareness, new hire screening, employee assistance, and corporate security activities. |
| SECC Outside Services Employees - F923.1 | Cybersecurity | SDG&E-26-R (SCG-28-R) MLD-46 | SDG&E-26 (Entire Exhibit) | The CIO, Corporate Systems, and Security (CCSS) department is responsible for the development and management of programs and policies for security systems, security investigations, and workplace violence avoidance, as well as crisis and security risk management services. The CCSS department also jointly investigates violations of cybersecurity policy and potential cyber-crimes together with the utility's Information Security & Information Security Compliance department. The CCSS department has also newly established the Office of the CIO which has responsibility for enterprise strategy, architecture, and innovation, and vendor management. The costs associated with activities of the Office of the CIO are included above in Chief Information Officer, Info Security Ops Center, Semptra Energy Cybersecurity, IS Strategy, Governance & Architecture, Emergency Management & Business Resumption and IS Governance, Awareness & Oversight cost centers. |
| Risk Management | Non-RAMP | SDG&E-02 GSF-3 to GSF-6 WP 2100-3590.000 | SDG&E-31 KJD-53 to KJD-61 WP 1SM005 | This cost center has focused on the development of risk frameworks and tools. As SoCalGas and SDG&E expand the implementation of risk management practices, the Director of Operational Risk Management cost center will have primary responsibility to refresh the risk registries, apply new risk models to the risk identification, analysis, and evaluation processes, and support the implementation of operating unit registries. |

iv. SDG&E Administrative & General Capital Variances

The Administrative & General witnesses did not sponsor any capital costs in the TY 2019 GRC.

E. SDG&E Human Resources

i. SDG&E Human Resources O&M Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Human Resources Dept, Safety, LTD & WC | 8,019 | 8,034 | (16) | 0% | | | | | | | |
| Safety, Wellness & Disability Services | 1,550 | 0 | 1,550 | 100% | | | | | | No | No |
| Safety, Wellness & Disability Services | 201 | 271 | (70) | -26% | | | | | | No | No |
| Safety, Wellness & Disability Services | 1,716 | 1,429 | 287 | 20% | | | | | | No | No |
| Safety, Wellness & Disability Services | 0 | 45 | (45) | -100% | | | | | | No | No |
| Safety, Wellness & Disability Services | 0 | 56 | (56) | -100% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Safety, Wellness & Disability Services | VPP Application and Implementation | 0 | 113 | (113) | -100% | | | | | | No | No |
| Safety, Wellness & Disability Services | OSHA Required Training and Training Required per Company Safety Standards | 5 | 0 | 5 | 100% | | | | | | No | No |
| Sub-Total Safety, Wellness & Disability Services | | 3,472 | 1,914 | 1,558 | 81% | | | | | | No | |
| Organizational Effectiveness | Non-RAMP | 1,410 | 2,018 | (609) | -30% | 15 | 14 | 1 | 8% | FTE | No | No |
| Organizational Effectiveness | Supervisor Effectiveness Training | 291 | 113 | 178 | 159% | | | | | | No | No |
| Organizational Effectiveness | Working Foreman Training and Human Performance | 44 | 89 | (45) | -51% | | | | | | No | No |
| Organizational Effectiveness | Workforce Planning Efforts / Supervisor Effectiveness Program | 73 | 253 | (180) | -71% | | | | | | No | No |
| Sub-Total Organizational Effectiveness | | 1,818 | 2,474 | (656) | -27% | | | | | | No | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Offices Of The President And COO | Non-RAMP | 1,404 | 1,550 | (146) | -9% | 4 | 4 | 0 | 0% | FTE | No | No |
| SDG&E Field Safety | Safety Programs & Projects | 1,023 | 1,091 | (69) | -6% | 7 | 6 | 1 | 17% | FTE | No | No |
| Safety Compliance | Safety Regulations, Policies, and Guidelines | 176 | 676 | (500) | -74% | 2 | 4 | (2) | -50% | FTE | No | Yes |
| Employee Assistance Program (EAP) And Wellness Programs | Non-RAMP | 127 | 330 | (203) | -62% | 2 | 2 | (1) | -29% | FTE | No | Yes |

ii. SDG&E Human Resources O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|--|
| Safety Compliance | Safety Regulations, Policies, and Guidelines | No | Yes | The unit variance is mainly due to an incorrect mapping of the actual costs. The remaining \$500K costs are mapped to Workpaper 1HR001.000 instead of the Safety Compliance Workpaper 2100-3414.000. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|---|
| Employee Assistance Program (EAP) And Wellness Programs | Non-RAMP | No | Yes | Due to organizational changes, the Project Manager hours were split amongst other efforts. In addition, many on-site employee wellness activities were halted in 2021, due to COVID social distancing requirements that most employees work remotely. |

iii. SDG&E Human Resources O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--|--|---|---|
| Safety Compliance | Safety Regulations, Policies, and Guidelines | SDG&E-30 TT-33 to TT-34 WP 2100-3414.000 | SDG&E-31 KJD-39 to KJD-45 WP 1SM002.001 | Safety Compliance program is comprised of the Mandatory Employee Health and Safety Training Programs and Standardized Policies. |
| Employee Assistance Program (EAP) And Wellness Programs | Non-RAMP | SDG&E-30 TT-36 to TT-37 WP 2100-3506.000 | SDG&E-32 AGT-38 to AGT-40 WP 2100-3506 | Wellness Programs is responsible for managing and administering the company's EAP services, back up care program, and company wellness programs and activities. |

iv. SDG&E Human Resources Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Human Resources | | 3,428 | 0 | 3,428 | 100% | | | | | | | |
| Contractor Field Safety Management Pool | Field Safety Oversight | 3,428 | 0 | 3,428 | 100% | | | | | | Yes | No |
| This is a new overhead pool created to capture the contractor field safety expenses. Due to costs being spread across multiple business units and a mixture of 3rd party vendors and internal labor, it is infeasible to identify a single unit of measurement. | | | | | | | | | | | | |

v. SDG&E Human Resources Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|---|
| Human Resources | | | | |
| Contractor Field Safety Management Pool | Field Safety Oversight | Yes | No | Variance is due to the creation of the field safety management pool, which includes over twenty 3rd party field labor vendors to support the contracted field safety oversight, internal management hours and safety culture costs. |

vi. SDG&E Human Resources Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|-----------------------------|---|---|
| Human Resources | | | | |
| Contractor Field Safety Management Pool | Field Safety Oversight | NA | SDG&E-31 KJD-83 to KJD-85 WP S09060 | This new OH pool will collect the costs of managing contractor safety oversight across the company, except for those costs associated with major projects, which are charged directly to the project. |

4. SDG&E BALANCED PROGRAMS – DIMP, TIMP, TREE TRIMMING, ELECTRIC DISTRIBUTION OVERHEAD POOLS AND WILDFIRE MITIGATION

A. SDG&E Balanced Programs Direct O&M Costs

i. SDG&E Balanced Programs Direct O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|------------------------------|--|----------------------|---------------------------------|---------------------|------------|---|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| Total TIMP & DIMP | | 10,934 | 12,367 | (1,432) | -12% | | | | | | | |
| TIMP | Assessments of transmission pipelines in High Consequence Areas (49 CFR Part 192 Subpart O) to evaluate and remediate threats and minimize risk. | 8,682 | 5,613 | 3,069 | 55% | 3 | 1 | 2 | 200% | In-line Inspections (ILI) | Yes | Yes |
| DIMP | Programs in place to minimize integrity risks to distribution pipelines | 2,252 | 6,754 | (4,502) | -67% | 1 | 9 | -8 | -89% | External Corrosion Direct Assessments (ECDA) | No | Yes |
| | | | | | | This activity and the work completed in 2021 consists of work associated with managing and developing programs/projects and activities to address risk (PAARs); it includes risk analysis, data collection and management, database | | | | | | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| | and minimize infrastructure damage. | | | | | | | | | | | |
| Total ED Wildfire Mitigation Program | Infrastructure Balanced | 173,300 | 63,510 | 109,790 | 173% | | | | | | | |
| Wildfire Mitigation Program | Utility Asset Management - (WAMP) | 341 | 1,326 | (985) | -74% | 1 | 1 | 0 | 0% | Consultant Contract | No | No |
| Wildfire Mitigation Program | Wildfire Communications | 9,702 | 278 | 9,424 | 3394% | 469,108,364 | 103,031,368 | 366,076,996 | 355% | Gross Impressions | Yes | Yes |
| Wildfire Mitigation Program | Fire Science & Climate Adaptation | 6,028 | 4,420 | 1,608 | 36% | | | | | There is no single number of like units that would be comparable year over year that can be identified because there are several activities such as Weather Monitoring & Forecasting; Forecast of Fire Potential Index (FFI) or similar; Contracted Firefighting Resources; PSPS Situational Awareness dashboards; etc. | No | No |
| Wildfire Mitigation Program | UAS Safety Program | 177 | 183 | (6) | -3% | 1 | 1 | 0 | 0% | UAS Safety Management System | No | No |
| Wildfire Mitigation Program | System Hardening and Helo | 9,534 | 12,120 | (2,586) | -21% | 12 | 12 | 0 | 0% | Months of helicopter availability | Yes | No |
| Wildfire Mitigation Program | Inspection and Preventative Maintenance | 1,733 | 12,828 | (11,095) | -86% | | | | | There is no single number of like units that would be comparable year over year that can be identified because there are several activities such as Detailed Inspections of Distribution Electric Lines & Equipment; Patrols of Distribution Lines & Equipment; HFTD Tier 3 Inspections; Infrared/Corona Inspections, etc. | Yes | No |
| Wildfire Mitigation Program | Meteorology Studies and Education | 0 | 454 | (454) | -100% | 2 | 2 | (0) | -13% | Climate vulnerability assessment | No | No |
| Wildfire Mitigation Program | Emergency Prep Trainings | 9,165 | 1,776 | 7,389 | 416% | | 81 | 40 | 49% | Number of Training sessions for first responders and emergency response personnel | Yes | Yes |
| Wildfire Mitigation Program | Records Management | 341 | 510 | (169) | -33% | | | | | Asset Management RAMP activity is annual records management compliance. Groups are to perform a self-assessment of the department's compliance with the records management policies and procedures. The assessments are then reviewed by the Records Management group. | No | No |
| Wildfire Mitigation Program | Fuels Management | 4,416 | 0 | 4,416 | 100% | 463 | 0 | 463 | 100% | Number of Structures Cleared | Yes | Yes |
| Wildfire Mitigation Program | Asset Management & Inspections | 938 | 0 | 938 | 100% | | | | | There is no single number of like units that would be comparable year over year that can be identified because the variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Wildfire Mitigation Program | Drone Inspection Program | 33,048 | 0 | 33,048 | 100% | 22,040 | 0 | 22,040 | 100% | Number of HFTD Inspections | Yes | Yes |
| Wildfire Mitigation Program | Hotline Clamps | 3,648 | 0 | 3,648 | 100% | 2,744 | 0 | 2,744 | 100% | Number of Hotline Clamps Removed | Yes | Yes |
| Wildfire Mitigation Program | Resiliency Grant Programs | 7,892 | 0 | 7,892 | 100% | 2,310 | 0 | 2,310 | 100% | Number of Generators | Yes | Yes |
| Wildfire Mitigation Program | Standby Power Programs | 8,934 | 0 | 8,934 | 100% | 400 | 0 | 400 | 100% | Number of Generators | Yes | Yes |
| Wildfire Mitigation Program | Resiliency Assistance Programs | 745 | 0 | 745 | 100% | 735 | 0 | 735 | 100% | Number of Generators | No | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|---|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|------------------------------------|---|-------------------------------------|----|
| Wildfire Mitigation Program | Microgrids | 1,492 | 0 | 1,492 | 100% | 6 | 0 | 6 | 100% | Number of Microgrids | No | Yes | |
| Wildfire Mitigation Program | PSPS Communications Protocols | 2 | 0 | 2 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several activities to improve coordination and customer awareness during fires or PSPS events. | | | | | | No | No |
| Wildfire Mitigation Program | WMP Tribal Customer Support | 54 | 0 | 54 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several initiatives aimed at reducing impacts, improving coordination and Tribal customer awareness during fires or PSPS events. | | | | | | No | No |
| Wildfire Mitigation Program | WMP AFN Customer Support | 1,127 | 0 | 1,127 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several initiatives aimed at reducing impacts, improving coordination and Medical Baseline and Access and Functional Needs (AFN) customer awareness for during fires or PSPS events. | | | | | | No | No |
| Wildfire Mitigation Program | Emergency Management Operations (PSPS) | 3,793 | 0 | 3,793 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several activities related to reducing risk by effectively responding to fires or extreme fire potential events. | | | | | | Yes | No |
| Wildfire Mitigation Program | Wildfire Mitigation Personnel | 3,823 | 0 | 3,823 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several initiatives to track and report on wildfire mitigation programs through quarterly reports and annual WMP. | | | | | | Yes | No |
| Wildfire Mitigation Program | Risk Assessment & Mapping | 608 | 0 | 608 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several activities such as the development of specific risk modeling tools, such as Wildfire Risk Reduction Model (WRRMA) and WRRM-Operational System (WRRM-Ops). | | | | | | No | No |
| Wildfire Mitigation Program | Data Governance | 1,082 | 0 | 1,082 | 100% | There is no single number of like units that would be comparable year over year that can be identified because there are several activities such as the centralization of wildfire data, WMP metrics, data repository, and documentation of models. | | | | | | No | No |
| Wildfire Mitigation Program | LIDAR Flights | 1,151 | 0 | 1,151 | 100% | There is currently no single number of like units that would be comparable year over year that can be identified because LiDAR inspections is a new and evolving initiative using light detection and ranging surveys. | | | | | | No | No |
| Wildfire Mitigation Program | Covered Conductor | 518 | 0 | 518 | 100% | 13 | 0 | 13 | 100% | Number of miles hardened (Capital) | No | Yes | |
| Wildfire Mitigation Program | Strategic Undergrounding | 4,812 | 0 | 4,812 | 100% | 26 | 0 | 26 | 100% | Number of Miles UG (Capital) | Yes | Yes | |
| Wildfire Mitigation Program | Vegetation Restoration Initiative | 393 | 0 | 393 | 100% | There are currently no reportable units for 2021, the Vegetation Restoration Initiative is a new program. In 2021, SDG&E established the 10,000 tree initiative and built the framework for the "Right Tree Right Place" program. | | | | | | No | No |
| Sub-Total Wildfire Mitigation Program | | 115,498 | 33,895 | 81,602 | 241% | | | | | | Yes | | |
| Vegetation Management (Pole Brushing) | Safety Policies & Programs | 5,555 | 4,155 | 1,400 | 34% | 35,186 | 54,706 | (19,520) | -36% | Poles brushed | No | Yes | |
| Vegetation Management (Pole Brushing) | Joint Power Line Inspections with CalFire | 52 | 39 | 13 | 34% | 0 | 0 | 0.0 | 0% | FTEs utilized | No | No | |
| Sub-Total Vegetation Management (Pole Brushing) | | 5,608 | 4,194 | 1,414 | 34% | | | | | | No | | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---------------------------------------|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---------------------------|---|-------------------------------------|
| Vegetation Management (Tree Trimming) | Programs to inspect and maintain trees in SDG&E's service territory that have the potential to encroach within the minimum required compliance distance between vegetation and overhead power lines. | 52,195 | 25,420 | 26,775 | 105% | 482,588 | 454,893 | 27,695 | 6% | Number of Trees Inspected | Yes | No |

ii. SDG&E Balanced Programs Direct O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|--|
| TIMP | Assessments of transmission pipelines in High Consequence Areas (49 CFR Part 192 Subpart O) to evaluate and remediate threats and minimize risk. | Yes | Yes | TIMP activities include threat identification, risk analysis, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. The number of assessment projects vary year to year primarily based on the timing and intervals of prior assessments and compliance dates. Furthermore, integrity assessments remain variable based on external factors (e.g., risks and threats) and individual project costs will differ. The higher than forecasted expenditures in 2021 are also attributable to an overall steady increase in contractor costs to perform assessments in the SDG&E territory. 2021 units were not proposed in SDG&E's TY 2019 GRC, and for the purposes of the RSAR, SDG&E adopted 2019 authorized units for 2021 reporting. As stated previously, the number of assessments vary year to year based on prescribed compliance-driven assessment cycles. Additionally, PHMSA allows the use of multiple assessment methods to comply with 49 CFR Part 192, Subpart O and the selected method may vary depending |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------|---|---|-------------------------------------|---|
| | | | | on SDG&E's system knowledge, prior assessments, and findings. Units should be reviewed in aggregate rather than by assessment method. |
| DIMP | Programs in place to minimize integrity risks to distribution pipelines and minimize infrastructure damage. | Yes | No | As described in the TY 2019 GRC testimony, DIMP costs are driven by existing and new projects and activities to assess risk (PAARs), and while SDG&E continues to develop PAARs to address distribution integrity risks, integrity management activity and expenditures remain variable. Costs are balanced to the GRC authorized cycle rather than on an individual year basis, and accordingly, activities fluctuate year to year. Individual year expenditures may vary from the authorized amount. This year's lower than forecasted expenses are attributable to the slower ramp up of new PAAR-related work contemplated in the TY 2019 GRC; as the programs mature, costs are expected to stabilize. |
| Wildfire Mitigation Program | Wildfire Communications | Yes | Yes | Increased cost and unit variance due to significantly expanded Wildfire efforts, including PSPS communications and drone inspections. |
| Wildfire Mitigation Program | System Hardening and Helo | Yes | No | Variance is due to lower Wildfire Mitigation Plan O&M associated with traditional hardening (e.g., Fire Risk Mitigation (FiRM) & Pole Risk Mitigation & Engineering (PRiME) and increased emergent related costs such as Covered Conductor and Strategic Undergrounding. |
| Wildfire Mitigation Program | Inspection and Preventative Maintenance | Yes | No | Variance is due to lower WMP O&M associated with traditional inspection & preventative maintenance (e.g., HFTD Inspections & Repairs, infrared Inspections) and increased emergent related costs, such as the Drone Inspection Program. |
| Wildfire Mitigation Program | Emergency Prep Trainings | Yes | Yes | Increased cost and unit pressures due to significantly expanded wildfire preparation and response efforts. The number of preparation and response efforts increased, and the dollars and units associated with each effort significantly increased. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------|---------------------------|---|-------------------------------------|---|
| Wildfire Mitigation Program | Fuels Management | Yes | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Fuels Management Program is an incremental activity managing fuel reduction involving thinning, pruning, and removal of vegetation along SDG&E rights of way and adjacent fire-prone corridors. |
| Wildfire Mitigation Program | Drone Inspection Program | Yes | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Drone Inspection Program is an incremental activity deploying advanced inspection technologies to inspect and repair electrical infrastructure in the HFTD. |
| Wildfire Mitigation Program | Hotline Clamps | Yes | Yes | After SDG&E filed its 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Hotline Clamp Program is an incremental activity replacing hotline clamps with compression connections to eliminate the risk of the wire down failure associated with hotline clamps. Units are higher than planned primarily due to faster program completion timelines, forecasted units are reduced by 2,533 units in 2024 from the 2021 values, due to completion of the replacements in the HFTD. |
| Wildfire Mitigation Program | Resiliency Grant Programs | Yes | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------|--------------------------------|---|-------------------------------------|---|
| | | | | GRC. The Resiliency Grant Program is an incremental activity focused on enhancing PSPS resiliency among vulnerable customer segments and includes several projects aimed at providing customers with renewable backup power options during PSPS events. |
| Wildfire Mitigation Program | Standby Power Programs | Yes | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Standby Power Program is an incremental activity aimed at providing alternative energy solutions to targeted participating customers ensuring a comprehensive source of power to energize their entire home or business. |
| Wildfire Mitigation Program | Resiliency Assistance Programs | No | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Resiliency Assistance Programs is an incremental activity providing eligible customers impacted by PSPS with point-of-sale rebates for generators, batteries, and power station purchases. Units are lower than primarily planned due to lower than planned fire weather activity and subsequent customer generator requests. |
| Wildfire Mitigation Program | Microgrids | No | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Microgrid Program is an incremental activity reducing the scope of PSPS to customers by designing and building microgrids that can be electronically isolated |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------|--|---|-------------------------------------|---|
| | | | | during a PSPS event. Units are higher than planned primarily due to updated calculations on locations of microgrids to reduce PSPS impacts to customers. |
| Wildfire Mitigation Program | Emergency Management Operations (PSPS) | Yes | No | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Emergency Management Operations (PSPS) mitigation is an incremental activity and includes costs related to Emergency Operations Center (EOC) activations, responding to high-risk fire weather events. |
| Wildfire Mitigation Program | Wildfire Mitigation Personnel | Yes | No | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. Wildfire Mitigation Personnel is an incremental activity and includes costs for several initiatives to track and report on wildfire mitigation programs through quarterly reports and annual WMP. |
| Wildfire Mitigation Program | Covered Conductor | No | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Covered Conductor program is an incremental activity utilizing conductors manufactured with an internal semiconducting layer and external insulating ultraviolet-resistant layers to provide incidental contact protection. |
| Wildfire Mitigation Program | Strategic Undergrounding | Yes | Yes | After SDG&E filed its TY 2019 GRC Application, Senate Bill 901 required electric corporations, including SDG&E, to annually submit Wildfire Mitigation Plans. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---------------------------------------|--|---|-------------------------------------|--|
| | | | | There, SDG&E proposed additional wildfire mitigation activities beyond or incremental to those included in the GRC. The Strategic Undergrounding program is an incremental activity converting overhead systems to underground, providing the dual benefits of nearly eliminating wildfire risk and the need for PSPS events in these areas. |
| Vegetation Management (Pole Brushing) | Safety Policies & Programs | No | Yes | Decreased unit variance is representative of the total poles brushed in 2021 vs. imputed actual units that can include multiple activities for the same pole (e.g., Notification = inspect pole, notify customer, & check for ability to apply chemicals; Chemical Application; Mechanical Clearing; Re-Clearing; and Chemical Warranty). |
| Vegetation Management (Tree Trimming) | Programs to inspect and maintain trees in SDG&E's service territory that have the potential to encroach within the minimum required compliance distance between vegetation and overhead power lines. | Yes | No | Increased cost variance due to higher than planned contractor costs as a result of Senate Bill 247 increasing labor costs. |

iii. SDG&E Balanced Programs Direct O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--|--|---|--|
| TIMP | Assessments of transmission pipelines in High Consequence Areas (49 CFR Part 192 Subpart O) to evaluate and remediate threats and minimize risk. | SDG&E-11 MTM-9 to MTM-16 WP 1TD000.000 | SDG&E-09 AK-TS-0 to AK-TS-8 WP 1TD001.000 | TIMP complies with 49 CFR 192, Subpart O—Gas Transmission Pipeline Integrity Management and includes activities such as threat identification and risk assessment, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|---|---|---|---|
| DIMP | Programs in place to minimize integrity risks to distribution pipelines and minimize infrastructure damage. | SDG&E-11 MTM-16 to MTM-21 WP 1TD000.001 | SDG&E-09 AK-TS-9 to AK-TS-15 WP 1TD002.000 | DIMP complies with 49 CFR 192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006. |
| Wildfire Mitigation Program | Wildfire Communications | SDG&E-15-2R Table WS-2 (see SDG&E- 1 Wildfires Caused by SDG&E Equipment), WHS-6 to WHS-9, and WHS-13 WP 1ED000.000 | SDG&E-13 JTW-86 to JTW-88 WP 1WM008.000 | This workpaper was created for purposes of this report to provide in a single workpaper for SDG&E’s wildfire-related prevention and mitigation O&M activities. While this was not presented in this manner in the 2019 GRC Application, it is consistent with the GRC activities that are now included in SDG&E’s subsequently filed Wildfire Mitigation Plans (See Rulemaking (R.) 18-10-007). |
| Wildfire Mitigation Program | System Hardening and Helo | SDG&E-15-2R Table WS-2 (see SDG&E- 1 Wildfires Caused by SDG&E Equipment), WHS-6 to WHS-9, and WHS-13 WP 1ED000.000 | SDG&E-13 JTW-48 to JTW-53 WP 1WM003.000; and JTW-73 to JTW-74 WP 1WM006.000 | This workpaper was created for purposes of this report to provide in a single workpaper for SDG&E’s wildfire-related prevention and mitigation O&M activities. While this was not presented in this manner in the 2019 GRC Application, it is consistent with the GRC activities that are now included in SDG&E’s subsequently filed Wildfire Mitigation Plans (See Rulemaking (R.) 18-10-007). |
| Wildfire Mitigation Program | Inspection and Preventative Maintenance | SDG&E-15-2R Table WS-2 (see SDG&E- 1 Wildfires Caused by SDG&E Equipment), WHS-6 to WHS-9, and WHS-13 WP 1ED000.000 | SDG&E-13 JTW-54 to JTW-58 WP 1WM004.000 | This workpaper was created for purposes of this report to provide in a single workpaper for SDG&E’s wildfire-related prevention and mitigation O&M activities. While this was not presented in this manner in the 2019 GRC Application, it is consistent with the GRC activities that are now included in SDG&E’s subsequently filed Wildfire Mitigation Plans (See Rulemaking (R.) 18-10-007). |
| Wildfire Mitigation Program | Meteorology Studies and Education | SDG&E-15-2R Table WS-2 (see SDG&E- 1 Wildfires Caused by SDG&E Equipment), WHS-6 to | N/A | This workpaper was created for purposes of this report to provide in a single workpaper for SDG&E’s wildfire-related prevention and mitigation O&M activities. While this was not presented in this manner in the 2019 GRC Application, it is consistent with the GRC activities that are now |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--------------------------|---|---|---|
| Wildfire Mitigation Program | Emergency Prep Trainings | SDG&E-15-2R Table WS-2 (see SDG&E- 1 Wildfires Caused by SDG&E Equipment), WHS-6 to WHS-9, and WHS-13 WP 1ED000.000 | SDG&E-13 JTW-31 to JTW-35 WP 1WM001.000 | included in SDG&E's subsequently filed Wildfire Mitigation Plans (See Rulemaking (R.) 18-10-007). This paperwork was created for purposes of this report to provide in a single paperwork for SDG&E's wildfire-related prevention and mitigation O&M activities. While this was not presented in this manner in the 2019 GRC Application, it is consistent with the GRC activities that are now included in SDG&E's subsequently filed Wildfire Mitigation Plans (See Rulemaking (R.) 18-10-007). Protecting SDG&E's electric system from wildfires is critical to system reliability and first responder and public safety. SDG&E's Fuels Management program sustainably manages land through selective vegetation thinning to mitigate the risk of wildfire affecting SDG&E's energy infrastructure and the communities it serves. Wildland fuel reduction involves the thinning, pruning, and in some cases, removal of vegetation along SDG&E rights-of-way and adjacent fire-prone corridors to minimize source material that could ignite and propagate a wildfire. The reduction of wildland fuel in these areas has the potential to slow the spread of a fire and make it more likely to be contained. |
| Wildfire Mitigation Program | Fuels Management | N/A | SDG&E-13 JTW-62 to JTW-63 WP 1WM005.000 | The O&M costs associated with the DIAR program include performing the drone flights, assessing the drone imagery, performing minor repairs, and maintenance to keep running machine learning models that review drone imagery for infractions. Documentation of forecasted DIAR O&M costs are included with supplemental capital workpapers. See SDG&E-13-CWP Budget Code 202480. |
| Wildfire Mitigation Program | Drone Inspection Program | N/A | SDG&E-13 JTW-55 WP 1WM004.000 | Replacement of hotline clamps with compression connections to eliminate the risk of the wire down failure associated with hotline clamps, which in turn will reduce wire down events and ignitions associated with connection failures. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--------------------------------|-----------------------------|--|--|
| Wildfire Mitigation Program | Resiliency Grant Programs | N/A | SDG&E-13 JTW-50 to JTW-54 WP 1WM003.000 | SDG&E's Resiliency Grant Programs focus on enhancing PSPS resiliency among vulnerable customer segments in SDG&E's territory. This program consists of several projects aimed at providing customers with renewable backup power options during PSPS events. The primary initiative in this category is the Generator Grant Program (GGP), which was launched in 2019. The GGP offers portable battery units with solar charging capacity to customers, leveraging cleaner, renewable generator options to give vulnerable customers a means to keep small devices and appliances charged and powered during PSPS events. While these are not whole facility solutions, they allow vulnerable customers access to needed power to support life saving devices and means of communication. |
| Wildfire Mitigation Program | Standby Power Programs | N/A | SDG&E-13 JTW-50 to JTW-54 WP 1WM003.000 | SDG&E's Standby Power Programs provide alternative energy solutions aimed at providing the participating customer a comprehensive source of power to energize their entire home or business. Targeted customers –residential, small commercial, critical facilities, and mobile home park clubhouses will experience fewer PSPS risks as a result of this program. This program is aimed at providing whole facility power solutions for backcountry residences, businesses, and local communities in the HFTD that may not benefit from planned hardening initiatives. SDG&E is also minimizing risk by increasing customer resilience through its Resiliency Assistance Programs, which provide eligible customers point-of-sale rebates for generators purchased through traditional retailers. The Resiliency Assistance Programs were enhanced in several ways starting 2021. Expansion of the type of offered rebates allowed customers more choice and opened supply chain options to additional local and national retailers by allowing customers to purchase |
| Wildfire Mitigation Program | Resiliency Assistance Programs | N/A | SDG&E-13 J TW-50 to JTW-54 WP 1WM003.000 | |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--|-----------------------------|--|--|
| | | | | generators at their preferred stores and then redeem coupons post purchase. In an effort to provide new options for customers, SDG&E also added portable batteries and power station options to the rebate program, following demonstrated demand for these products at other utilities in California and beyond. |
| Wildfire Mitigation Program | Microgrids | N/A | SDG&E-13 JTW-50 to JTW-54 WP 1WM003.000 | The Microgrid program designs and builds microgrids that can be electrically isolated during a PSPS event, thereby maintaining electric service to customers who would otherwise be affected. Microgrids are comprised of capital spend and are thus further discussed in the capital section. |
| Wildfire Mitigation Program | Emergency Management Operations (PSPS) | N/A | SDG&E-13 JTW-31 to JTW-35 WP 1WM001.000 | The Emergency Services Division (Emergency Services) facilitates SDG&E's emergency planning, preparedness, response, and recovery through the Emergency Operations Center (EOC) for incidents regardless of cause, size, or complexity. The EOC plays a substantial role in driving forward SDG&E's longstanding commitment to safety, reliability, and security risk mitigation. Cross-functional subject matter experts virtually or physically assemble in the EOC to assess and provide situational awareness to internal and external stakeholders, establish overarching incident objectives, planning, anticipation, response, communications, and coordination. Operating within a utility-compatible Incident Command System (ICS) framework, the EOC coordinates emergency response and preparedness activities. |
| Wildfire Mitigation Program | Wildfire Mitigation Personnel | N/A | SDG&E-13 J TW-76 to JTW-79 WP 1WM007.000 | Wildfire Mitigation Personnel consists of three departments overseen by the Director of Wildfire Mitigation: (1) The Wildfire Mitigation Programs group is involved with the various regulatory proceedings that address wildfire and de-energization as well as legislative and media inquiries; (2) The Wildfire Mitigation Strategy group develops metrics, leads vision projects, promotes |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--------------------------|-----------------------------|---|---|
| | | | | <p>new ways to enhance fire safety, and explores advancements to further drive improvement and change including risk modeling capabilities; (3) The Wildfire Mitigation Accountability group is responsible for monitoring fire-related metrics, tracking WMP activities, complying with reporting requirements, and providing for governance specifications and procedures.</p> |
| Wildfire Mitigation Program | Covered Conductor | N/A | SDG&E-13 JTW-48 to JTW-54 WP 1WM003.000 | <p>SDG&E has a number of initiatives, including covered conductor and strategic undergrounding that reduce risk events on utility equipment, thus lowering the likelihood of ignition. Protection and equipment programs such as advanced protection, the expulsion fuse replacement program, and the lightning arrester program further aid in reducing ignition risk. These programs reduce the chance that a risk event results in an ignition by utilizing protection settings and/or equipment that address a specific failure mode known to lead to ignition. Replacement of hotline clamps with compression connections to eliminate the risk of the wire down failure associated with hotline clamps, which in turn will reduce wire down events and ignitions associated with connection failures.</p> |
| Wildfire Mitigation Program | Strategic Undergrounding | N/A | SDG&E-13 JTW-48 to JTW-54 WP 1WM003.000 | <p>SDG&E has a number of initiatives, including covered conductor and strategic undergrounding that reduce risk events on utility equipment, thus lowering the likelihood of ignition. Protection and equipment programs such as advanced protection, the expulsion fuse replacement program, and the lightning arrester program further aid in reducing ignition risk. These programs reduce the chance that a risk event results in an ignition by utilizing protection settings and/or equipment that address a specific failure mode known to lead to ignition. Replacement of hotline clamps with compression connections to eliminate the risk of the wire down</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|--|--|---|--|
| | | | | failure associated with hotline clamps, which in turn will reduce wire down events and ignitions associated with connection failures. |
| Vegetation Management (Pole Brushing) | Safety Policies & Programs | SDG&E-15-2R WHS-66 to WHS-69 WP 1ED021.000 | SDG&E-13 JTW-61 to JTW-62 WP 1WM005.000 | Pole brushing for SDG&E involves the clearing of flammable brush and vegetation away from SDG&E distribution poles subject to the California Public Resource Code (PRC), section 4292. PRC 4292 is intended to prevent energized electrical hardware from igniting a fire by keeping the area under the subject poles clear of flammable vegetation at all times. |
| Vegetation Management (Tree Trimming) | Programs to inspect and maintain trees in SDG&E's service territory that have the potential to encroach within the minimum required compliance distance between vegetation and overhead power lines. | SDG&E-15 WHS-69 to WHS-72 WP 1ED021.000 | SDG&E-13 JTW-68 to JTW-70 WP 1WM005.001 | SDG&E's Vegetation Management program complies with CPUC GO 95, Rule 35; Public Resources 25 Code, sections 4292 and 4293; and NERC FAC-003 and is responsible for inspecting and maintaining an inventory of approximately 450,000 trees. The tree trimming work includes pruning healthy trees growing into overhead power lines as well as the pruning or removal of dead, dying, diseased, or structurally unsound trees with the potential to fall into overhead lines. |

B. SDG&E Balanced Programs Direct Capital Costs

i. SDG&E Balanced Programs Direct Capital Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| TIMP & DIMP | 60,551 | 27,801 | 32,750 | 118% | | | | | | | |
| TIMP | 2,290 | 8,366 | (6,076) | -73% | | | | | | Yes | No |
| DIMP | 58,261 | 19,435 | 38,825 | 200% | 52 | 27 | 25 | 93% | Miles | Yes | Yes |
| IT WMP - Balanced | 80,348 | 13,509 | 66,838 | 495% | | | | | | | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|--|-----------------|-----------------|---|-------------------------------------|-------------------|
| | | | | | | | | | | | | | 2021 Actual Units |
| Customer Services | Stakeholder Cooperation & Community Engagement | 4,488 | 0 | 4,488 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| PSPP Enhancements | Communication Practices | 528 | 0 | 528 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT WMP - Balanced | LTE Communication Network | 49,902 | 13,509 | 36,392 | 269% | | | The workpaper contains several foundational components of the LTE network, including spectrum license acquisition, data center core implementation and field deployment. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No | |
| IT - Enterprise - Application | Emergency Planning & Preparedness | 349 | 0 | 349 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Data Governance (BC 208750) | (162) | 0 | (162) | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Data Governance (BC 208910) | 3,691 | 0 | 3,691 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Situational Awareness & Forecasting | 54 | 0 | 54 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Resource Allocation Methodology | 159 | 0 | 159 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Asset Management | 2,047 | 0 | 2,047 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Emergency Management Operations | 3,140 | 0 | 3,140 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Communication Practices | 1,083 | 0 | 1,083 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | |
| IT - Enterprise - Application | Centralized Repository for Data | 15,071 | 0 | 15,071 | 100% | | | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No | |
| Sub-Total IT - Enterprise - Application | Emergency Management Operations | 25,430 | 0 | 25,430 | 100% | | | | | | | | |
| Facilities WMP - Balanced | Emergency Management Operations | 20 | 688 | (669) | -97% | | | No 2021 units, 2021 actuals for design and engineering activities. | | | No | No | |
| Electric Distribution Balanced | Projects | 483,520 | 218,088 | 265,432 | 122% | | | | | | | | |
| RAMP Base - Annual Pole Reinforcement (WMP) | GO165: Distribution Inspect and Repair program | 13,180 | 11,129 | 2,051 | 18% | | | 665 | 600 | 65 | 11% | No | No |
| RAMP Base - Wireless Fault Indicators | Design and Engineering Approaches | 1,106 | 1,781 | (675) | -38% | | | 544 | 516 | 28 | 5% | No | No |
| Overhead System Hardening | System Hardening | 132,705 | 56,516 | 76,189 | 135% | | | 121 | 99 | 22 | 22% | Yes | Yes |
| HFTD Fuse Replacements Enhancements | Expulsion Fuse Replacements | 6,053 | 0 | 6,053 | 100% | | | 3507 | 0 | 3507 | 100% | Yes | Yes |
| HFTD Undergrounding | PSPS Sectionalizing | 1,904 | 0 | 1,904 | 100% | | | 13 | 0 | 13 | 100% | No | Yes |
| Meteorology - Fire Science Enhancements | Strategic Undergrounding | 69,538 | 0 | 69,538 | 100% | | | 26 | 0 | 26 | 100% | Yes | Yes |
| | WRRM - OPS | 1,446 | 0 | 1,446 | 100% | | | 62 | 0 | 62 | 100% | No | Yes |
| Backup Power for Resiliency | Microgrids | 13,053 | 0 | 13,053 | 100% | | | Purchased materials, land acquisition for Cameron Corners, Ramona, Butterfield and Shelter Valley and Design & Engineering. Additional land surveys and capacity load studies for all four microgrids. Installed solar array at Cameron Corners. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|--|----------------------|---------------------------------|---------------------|------------|--|-------------------------------|---------------|-----------------|--------------------------------------|---|-------------------------------------|----|
| CNF - RAMP | System Hardening | 12,497 | 12,781 | (284) | -2% | 7 | 7 | 0 | -2% | Distribution Circuit Miles | No | No | |
| TL649 Otay-San Ysidro-Border SW Pole Repl - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 10 | 0 | 10 | 100% | This project is energized and in the closeout phase. The actual costs are for trailing closeout charges. | | | | | | No | No |
| TL691 Avo-Mon Wood to Steel - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 109 | 0 | 109 | 100% | No 2021 units. 2021 actuals for design activities. | | | | | | No | No |
| TL6912 Wood to Steel Pole Replacement - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | 267 | 0 | 267 | 100% | This project is energized and in the closeout phase. The actual costs are for trailing closeout charges. | | | | | | No | No |
| TL6926 Rincon to Valley Center Fire Hardening | OH Trans Fire Hardening Dist Underbuild | 1,536 | 0 | 1,536 | 100% | No 2021 units. 2021 actuals for design and engineering activities. | | | | | | No | No |
| TL690E - Camp Pendleton - Wood to Steel | Inspection Repair Maintenance & Replacement Programs | 146 | 0 | 146 | 100% | No 2021 units. 2021 actuals for design and engineering activities. | | | | | | No | No |
| TL692 Homo Pulgas (Camp Pend) | Inspection Repair Maintenance & Replacement Programs | 2,225 | 0 | 2,225 | 100% | This project is complete and in the closeout phase. The actual costs are for trailing closeout charges. | | | | | | No | No |
| TL639 Wood to Steel Replacement | Inspection Repair Maintenance & Replacement Programs | 81 | 0 | 81 | 100% | No 2021 units. 2021 actuals for design and engineering activities. | | | | | | No | No |
| TL636 Wood to Steel Replacement | Inspection Repair Maintenance & Replacement Programs | 39 | 0 | 39 | 100% | Emergent project. FERC-driven project transmission loop-in with minor common/general plant allocations for CPUC components. | | | | | | No | No |
| TL13831 Wood to Steel Replacement (Talega - Rancho Mission Viejo) | Inspection Repair Maintenance & Replacement Programs | 133 | 0 | 133 | 100% | No 2021 units. 2021 actuals for design and engineering activities. | | | | | | No | No |
| TL23001 TL23004 Wood to Steel Replacement (Mission - San Luis Rey) | Inspection Repair Maintenance & Replacement Programs | 6 | 0 | 6 | 100% | This project is energized and in the closeout phase. The actual costs are for trailing closeout charges. | | | | | | No | No |
| Lightning Arrestor Replacement Program | Inspection Repair Maintenance & Replacement Programs | 1,795 | 0 | 1,795 | 100% | 1,812 | 0 | 1,812 | 100% | Lightning Arrestors | No | Yes | |
| Aerial Mesh Network Expansion | Aviation Firefighting Program | 15 | 0 | 15 | 100% | This project is now in the closeout phase. The actual costs are for trailing closeout charges. | | | | | | No | No |
| Drone Investigation Assessment And Repair | Distribution System Inspection Drone Inspections | 12,386 | 0 | 12,386 | 100% | 355 | 0 | 355 | 100% | Pole Replacements Completed | Yes | Yes | |
| AVIATION FIREFIGHTING PROGRAM | Grid Operations & Operating Protocols | 10,461 | 0 | 10,461 | 100% | No 2021 units. Helicopter has not been placed into service. | | | | | | Yes | No |
| Elect Transmission Line Reliability Projects | Transmission System Inspection | 337 | 566 | (229) | -41% | The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | No | No |
| Trans Fiber Links HFTD | LTE Communication Network | 6,642 | 196 | 6,446 | 3283% | 31 | 1 | 30 | 2970% | ADSS Miles | Yes | Yes | |
| Ramp Base - Install SCADA On-Line Capacitors | Expand and Maintain Distribution Advanced SCADA infrastructure | 1,945 | 1,784 | 161 | 9% | 50 | 53 | -3 | -6% | Number of SCADA Capacitors Installed | No | No | |
| RAMP Base - Weather Station Adv Detection | Advanced Detection | 392 | 554 | (162) | -29% | No more units (weather stations) are being purchased for this project. The actual costs are associated with software upgrades. | | | | | | No | No |
| TL6916 Sycamore Canyon to Scripps Wood to Steel | OH Trans Fire Hardening Dist Underbuild | 427 | 52 | 375 | 725% | No 2021 units. 2021 actuals for design activities. The variance is due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------------------------|---|-------------------------------------|
| TL698 Monserate - Avocado Wood to Steel | OH Trans Fire Hardening Dist Underbuild | 272 | 305 | (34) | -11% | | | | | | No | No |
| TL694 Wood To Steel | OH Trans Fire Hardening Dist Underbuild | 0 | 153 | (153) | -100% | | | | | | No | No |
| TL695/6971 Talega-Cristianitos Japanese (Camp Pend) | OH Trans Fire Hardening Dist Underbuild | 126 | 0 | 126 | 100% | | | | | | No | No |
| TL13838 Wood to Steel Replacement (Magarita - Rancho Mission Viejo) | OH Trans Fire Hardening Dist Underbuild | 93 | 0 | 93 | 100% | | | | | | No | No |
| TL690C Camp Pendleton Wood to Steel | OH Trans Fire Hardening Dist Underbuild | 8 | 0 | 8 | 100% | | | | | | No | No |
| Helicopter HD/IR Cameras | Aviation Firefighting Program | 817 | 0 | 817 | 100% | | | | | | No | No |
| Twin Engine Med Lift Helicopter | Aviation Firefighting Program | 2,182 | 0 | 2,182 | 100% | | | | | | No | No |
| Transmission DIAR UAS Purchase | Aviation Firefighting Program | 113 | 0 | 113 | 100% | | | 5 | 100% | Number of Unmanned Aerial Systems | No | Yes |
| IR Flir Monocular | Inspection Repair Maintenance & Replacement Programs | 175 | 0 | 175 | 100% | | | 40 | 100% | Number of Monoculars | No | Yes |
| Advanced Protection | Inspection Repair Maintenance & Replacement Programs | 10,787 | 10,907 | (120) | -1% | | | 4 | 0% | Number of Circuits | No | No |
| Sub-Total WMP Projects (Balanced Costs) | | | | | | | | | | | | |
| | | 305,005 | 96,723 | 208,282 | 215% | | | | | | | |
| Local Engineering Pool - Electric Distribution | Non-RAMP | 143,736 | 83,220 | 60,516 | 73% | | | | | | Yes | No |
| Local Engineering Pool - ED RAMP | Works Standards and Methods | 0 | 840 | (840) | -100% | | | | | | No | No |
| Sub-Total Local Engineering Pool – Electric Distribution | | | | | | | | | | | | |
| | | 143,736 | 84,060 | 59,676 | 71% | | | | | | Yes | |
| Local Engineering Pool - Substation | Non-RAMP | 3,296 | 23,598 | (20,302) | -86% | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Department Overhead Pool | Non-RAMP | 18,306 | 5,605 | 12,701 | 227% | Department Overheads are those costs for supervision and administration of crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project but benefit many projects, or the Construction and Operation (C&O) districts as a whole. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |
| Contract Admin Pool - RAMP Base | Administration of Projects performed by Contractors | 13,177 | 8,101 | 5,076 | 63% | The Contract Administration (CA) pool consists of those expenses necessary for the administration of projects that are performed by contractors for SDG&E. The expenses to this pool consist of labor for Contract Administrators and support personnel, as well as the associated non-labor support costs such as office and field supplies. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |
| Sub-Total ED Overhead Pools (Balanced Costs) | | 178,515 | 121,365 | 57,150 | 47% | | | | | | No | |

ii. SDG&E Balanced Programs Direct Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|--|
| TIMP | TIMP ILI/ECDA | Yes | No | TIMP complies with 49 CFR 192, Subpart O - Gas Transmission Pipeline Integrity Management and includes threat identification, risk analysis, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. The spending variance is driven by the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above. |
| DIMP | DIMP DREAMS | Yes | Yes | DIMP complies with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management and includes threat identification, risk assessment, and various programs to minimize threats and integrity concerns to reduce risk of pipeline incidents. The spending variance is driven by the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above. |

| WP_Activity_Description | RAMP_Mitigation_Activity | Spending_Variance_Explanation_Required? | Unit_Variance_Explanation_Required? | Variance_Explanation |
|-------------------------------|---------------------------------|---|-------------------------------------|--|
| | | | | The units identified in this report are a component and not the entirety of activities and costs supporting the DIMP. They represent the Vintage Integrity Plastic Plan (VIPP) work on non-state-of-the-art distribution pipeline. SDG&E's year-over-year replacements are informed by the Distribution Risk Evaluation and Monitoring System (DREAMS) model, and activity levels have increased since TY2019 in alignment with the D.19-09-051. |
| IT WMP - Balanced | LTE Communication Network | Yes | No | The 2021 increase against imputed authorized reflects a ramp up in the build out/deployment of the network assets and the spectrum license purchase. In addition, the calculation used to impute authorized funding at the activity level for the GRC post-test years is contributing to the variance. The CPUC approved a post-test year mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. |
| IT - Enterprise - Application | Centralized Repository for Data | Yes | No | Variance due to emergent need to implement systems to support wildfire mitigation activities |
| Overhead System Hardening | System Hardening | Yes | Yes | Since filing the TY 2019 GRC Application, SDG&E has consolidated multiple overhead fire hardening programs as described in the 2021 and 2022 WMP to mitigate wildfire-related risk. These programs are called Traditional Hardening and Covered Conductor. Higher than authorized units and capital investment due to the increase of fire hardening projects within the High Fire Threat District (HFTD). This initiative has replaced aged conductor, aged splices, overloaded poles, as well as other conditions that are known to be a risk in the fire-prone areas. |
| HFTD Fuse Replacements | Expulsion Fuse Replacements | Yes | Yes | Since filing the TY 2019 GRC Application, SDG&E has implemented this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. This project has replaced at-risk electric distribution cutout bodies and fuses in HFTD Tier 2 and Tier 3 with Cal Fire-approved devices in order to reduce the risk of wildfire ignition. |
| PSPS Engineering Enhancements | PSPS Sectionalizing | No | Yes | Since filing the TY 2019 GRC Application, SDG&E has implemented this program within its Wildfire Mitigation Plan to |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--|---|-------------------------------------|---|
| | | | | mitigate wildfire-related risk. This project has placed distribution sectionalizing devices in the High Fire Threat District (HFTD) areas to minimize customer impacts during Public Safety Power Shut-Off (PSPS) events. |
| HFTD Undergrounding | Strategic Undergrounding | Yes | Yes | Since filing the TY 2019 GRC Application, SDG&E has implemented this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. Overhead to underground infrastructure conversions are performed to mitigate risk of wildfire ignitions caused by overhead infrastructure failures. |
| Meteorology - Fire Science Enhancements | WRRM - OPS | No | Yes | Since filing the TY 2019 GRC Application, SDG&E has implemented this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. New tools and technologies are developed to enhance current technologies such as the Fire Potential Index and create the next generation of fire weather tools. |
| Backup Power for Resiliency | Microgrids | Yes | No | Since filing the TY 2019 GRC Application, SDG&E has implemented this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. Microgrids provide backup power at strategic locations to ensure resiliency during PSPS events and mitigate the impact of PSPS events to the community. |
| Lightning Arrestor Replacement Program | Inspection Repair Maintenance & Replacement Programs | No | Yes | Since filing the TY 2019 GRC Application, SDG&E has implemented this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. This program has replaced outdated lightning arrestors with CAL FIRE-approved lightning arrestors to prevent surge voltages during lightning strikes or other faults. |
| Drone Investigation Assessment And Repair | Distribution System Inspection Drone Inspections | Yes | Yes | Since filing the TY 2019 GRC Application, SDG&E has identified this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. This program has utilized drones to collect photos of distribution facilities and implement necessary capital improvements. |
| AVIATION FIREFIGHTING PROGRAM | Grid Operations & Operating Protocols | Yes | No | Since filing the TY 2019 GRC Application, SDG&E has identified this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. This project provides funding to purchase a helicopter and aviation equipment and make |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--|---|-------------------------------------|---|
| | | | | necessary modifications for firefighting and heavy construction needs in the HFTD. |
| Trans Fiber Links HFTD | LTE Communication Network | Yes | Yes | When SDG&E presented this program in the TY 2019 GRC Application, it was intended to cover work completed in both the HFTD and non-HFTD areas. Since then, SDG&E has split the program to track the HFTD spend separately within balanced along with the entire authorized spend. Additional fiber optic work has continued to be performed within the HFTD due to the importance of system protection and controls, automation, and communications. |
| Transmission DIAR UAS Purchase | Aviation Firefighting Program | No | Yes | Since filing the TY 2019 GRC Application, SDG&E has identified this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. American-made drones were purchased in order to support projects implemented on Department of Defense land. |
| IR Flir Monocular | Inspection, Repair, Maintenance & Replacement Programs | No | Yes | Since filing the TY 2019 GRC Application, SDG&E has identified this program within its Wildfire Mitigation Plan to mitigate wildfire-related risk. Monoculars are used in the field to capture thermal imaging for enhanced situational awareness and real-time centralized information. |
| Local Engineering Pool - Electric Distribution | Non-RAMP | Yes | No | This program spent more than imputed authorized levels due to an increase in the amount of contractor resources primarily to support the increase of wildfire-related work and also the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. Over the GRC cycle, SDG&E intends to manage the overhead pool program at authorized levels. |
| Local Engineering Pool - Substation | Non-RAMP | Yes | No | The Local Engineering - Substation pool is loaded onto electric distribution substation capital jobs and electric transmission substation capital jobs. The actual spend was lower than imputed authorized primarily due to less substation capital design work compared to other years. Over the GRC cycle, |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---------------------------------|---|---|-------------------------------------|--|
| | | | | SDG&E intends to manage the overhead pool program at authorized levels. |
| Department Overhead Pool | Non-RAMP | Yes | No | This variance is primarily due to the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. Over the GRC cycle, SDG&E intends to manage the overhead pool program at authorized levels. |
| Contract Admin Pool - RAMP Base | Administration of Projects performed by Contractors | Yes | No | This program spent more than imputed authorized levels in the calendar year due to an increase in the amount of contractor resources primarily to support the increase of wildfire-related work and also the calculation used to impute authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SDG&E attrition years, as described in further detail in section 2.D above. Over the GRC cycle, SDG&E intends to manage the overhead pool program at authorized levels. |

iii. SDG&E Balanced Programs Direct Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|---|--|--|
| TIMP | TIMP ILI/ECDA | SDG&E-11 MTM-22 to MTM-23 WP 034680 | SDG&E-09 AK-TS-30 to AK-TS-33 WP 034680 | TIMP complies with 49 CFR 192, Subpart O— Gas Transmission Pipeline Integrity Management, and includes activities such as threat identification and risk assessment, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. |
| DIMP | DIMP DREAMS | SDG&E-11 MTM-24 to MTM-25 WP 095460 | SDG&E-09 AK-TS-34 to AK-TS-35 WP 095460 | DIMP complies with 49 CFR 192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|---------------------------------|--|--|---|
| IT WMP - Balanced | LTE Communication Network | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-13 JTW-111 to JTW-112 WP 198730 | The workpaper contains several foundational components of the LTE network, including spectrum license acquisition, data center core implementation and field deployment. |
| IT - Enterprise - Application | Centralized Repository for Data | SDG&E-24-R CRO-16 to CRO-31 | SDG&E-13 JTW-152 to JTW-153 WP 208910 | This workpaper for Wildfire Mitigation IT Application contains various projects within the following categories: 1. Electric Distribution Asset Investment Prioritization 2. WSD Data Schema 3. Wildfire Mitigation Advanced Analytics |
| Overhead System Hardening | System Hardening | SDG&E-14-R AFC-123 to AFC-126; AFC-111 to AFC-112 WP 132470 & 17254A | SDG&E-13 JTW-108 to JTW-111 JTW-115 to JTW-116 WP 202840 and WP 202850 | To address Wildfire risk, this initiative will address aged conductor, aged splices, overloaded poles, as well as other conditions that are known to be a risk in the fire-prone areas. The combination of these fire mitigation methods effectively and efficiently reduces the risk of fire initiation and propagation while prioritizing the highest risk assets for strategic targeting by the FiRM project. When replacing these high-risk assets, poles, conductor, and other hardware are designed and constructed in accordance with current regulatory requirements as well as known local weather conditions for increased preparedness. In all, the FiRM project provides substantive fire risk reduction for SDG&E and its customers. |
| HFTD Fuse Replacements | Expulsion Fuse Replacements | N/A | SDG&E-13 JTW-117 to JTW-118 WP 192420 | Pursuant to SDG&E's Wildfire Mitigation Plan, this budget provides funding to proactively replace at-risk electric distribution cutout bodies and fuses in HFTD Tier 2 and Tier 3 with Cal Fire-approved devices in order to reduce the risk of wildfire ignition. Infrastructure upgrades as required to facilitate these fuse changeouts may also be implemented. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--|-----------------------------|--|---|
| PSPS Engineering Enhancements | PSPS Sectionalizing | N/A | SDG&E-13 JTW-129 WP 192450 | Pursuant to SDG&E's Wildfire Mitigation Plan, this budget provides funding to add distribution sectionalizing devices in the High Fire Threat District (HFTD) areas to minimize customer impacts during Public Safety Power Shut-Off (PSPS) events. This project will deliver substantial improvements to fire weather operational response efforts and is expected to reduce the risk of wildfire ignitions. |
| HFTD Undergrounding | Strategic Undergrounding | N/A | SDG&E-13 JTW-132 to JTW-134 WP 192460 | Pursuant to SDG&E's Wildfire Mitigation Plan, this budget provides funding to perform distribution overhead to underground conversions in an effort to mitigate risk of wildfire ignitions caused by overhead infrastructure failures. |
| Meteorology - Fire Science Enhancements | WRRM - OPS | N/A | SDG&E-13 JTW-94 to JTW-96 WP 192480 | Pursuant to SDG&E's Wildfire Mitigation Plan, this budget provides funding to enhance the fire science capabilities at SDG&E. New tools and technologies will be developed to greatly enhance current technologies such as the Fire Potential Index and create the next generation of fire weather tools. |
| Backup Power for Resiliency | Microgrids | N/A | SDG&E-13 JTW-124 to JTW-126 WP 192490 | These projects support critical facilities and impacted areas during PSPS events. SDG&E's Wildfire Mitigation Plan includes microgrids to provide backup power at strategic locations to ensure resiliency during PSPS events and mitigate the impact of PSPS events to the community. |
| Lightning Arrestor Replacement Program | Inspection Repair Maintenance & Replacement Programs | Emergent | SDG&E-13 JTW-121 to JTW-123 WP 202820 | This program will replace outdated lightning arrestors with CAL FIRE-approved lightning arrestors within the HFTD and WUI. Lightning arrestors are installed on the distribution system throughout the service territory to protect electric power equipment from exceeding thermal insulation ratings in the event of surge voltages due to lightning strikes or other faults. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|---|---|--|---|
| Drone Investigation Assessment And Repair | Distribution System Inspection Drone Inspections | N/A | SDG&E-13 JTW-141 to JTW-144 WP 202480 | Pursuant to SDG&E's Wildfire Mitigation Plan, this budget provides funding to utilize drones to collect photos of distribution facilities in the high fire threat district (HFTD), identify items that could pose a fire risk and implement any necessary repairs or improvements to mitigate the risk in accordance with regulatory requirements and SDG&E standards. |
| AVIATION FIREFIGHTING PROGRAM | Grid Operations & Operating Protocols | N/A | SDG&E-13 JTW-145 to JTW-148 WP 202770 | Pursuant to SDG&E's Wildfire Mitigation Plan, this budget provides funding to purchase and equip a new Sikorsky S-70i Fire hawk helicopter. The S-70i Fire hawk will complete firefighting and heavy construction needs for SDG&E. The twin-engine Fire hawk will be equipped with a 9,000 lb. construction hook, a 1,000-gallon belly-mounted firefighting water tank, FLIR camera, helicopter mesh network downlink system and other highly specialized mission equipment. |
| Trans Fiber Links HFTD | LTE Communication Network | SDG&E-14-R AFC-142 to AFC-143 WP 071440 | SDG&E-13 JTW-113 to JTW-114 WP 191340 | The project when completed will provide a self-healing network to carry multi-gigabit data on demand. Our microwave network will also be upgraded to or be replaced with higher bandwidth (622 Mbps or higher) system, which is key to real-time applications. Create a solid backbone of Synchronous Optical Network (SONET) consisting of fiber optic and high-speed digital microwave network. Modern protection relays require high-speed, dependable, and secure communication for protection and control. Presently, SDG&E's existing communication infrastructure is inadequate for protection of transmission lines, compromising protection dependability and security. SDG&E is lagging behind the industry in providing the quality of communication necessary to meet the demands of today's protection equipment. This project will install Fiber Optic communication on all 138kV |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--|---|---|---|
| | | | | and above transmission lines in the next 3 years and convert major 69 kV system to fiber in 5 years for safe grid operation. It will reduce single-use telecom infrastructures. It will position SDG&E for future automation application, Condition Based Maintenance (CBM), Smart Meter (AMI), and Smart Grid. |
| Transmission DIAR UAS Purchase | Aviation Firefighting Program | N/A | N/A | Transmission DIAR UAS Purchase. American-made drones were purchased in order to support projects implemented on Department of Defense land. |
| IR Flir Monocular | Inspection Repair Maintenance & Replacement Programs | N/A | N/A | Monoculars are used to capture thermal imaging for enhanced situational awareness and real-time centralized information. |
| Local Engineering Pool - Electric Distribution | Non-RAMP | SDG&E-14-R AFC-69 to AFC-70 WP 009010 | SDG&E-11 OR-87 to OR-88 WP E09010 | Local Engineering activities are required to follow a project from inception to completion. Due to the volume of capital work that takes place on the distribution system, the most effective and efficient way to allocate the planning and engineering activities is through the use of the overhead pools. It is not feasible to charge directly for each electric distribution job due to the tremendous amount of work orders. |
| Local Engineering Pool - Substation | Non-RAMP | SDG&E-14-R AFC-70 to AFC-72 WP 009040 | SDG&E-11 OR-88 to OR-90 WP E09040 | The Local Engineering – Substation Pool consists of the pool of planners, designers and engineers and support personnel who research, analyze, and design the facilities needed to serve customers. These persons address the engineering needs for substation projects. These persons also address the interaction with internal and external customers in preparing a work order package for construction. This pool includes the costs that will be allocated to electric distribution and transmission substation capital activities. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------|---|---|---|--|
| Department Overhead Pool | Non-RAMP | SDG&E-14-R AFC-70 to AFC-72 WP 009050 | SDG&E-11 OR-90 to OR-91 WP E09050 | Department Overheads are those costs for supervision and administration of crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects, or the C&O districts as a whole. The non-labor piece consists of administrative expenses such as: office supplies, telephone expenses, mileage, employee uniforms and professional dues. This pool includes costs that will be allocated to electric capital activities. |
| Contract Admin Pool - RAMP Base | Administration of Projects performed by Contractors | SDG&E-14-R AFC-73 to AFC-74 WP 00806A | SDG&E-11 OR-91 to OR-92 WP E09060 | The Contract Administration (CA) pool consists of those expenses necessary for the administration of projects that are performed by contractors for SDG&E. The expenses to this pool consist of labor for Contract Administrators and support personnel, as well as the associated non-labor support costs such as office and field supplies. This pool includes costs that will be allocated to contracted work. |

C. SDG&E Balanced Program Regulatory Account 2021 Cumulative Balances

i. SDG&E Regulatory Account – DIMPBA

| SDG&E DIMPBA Details Revenue Requirements (\$000) | | | | | | |
|---|-------------------|--------|------------|-------------------------|----------|-----------------------|
| Program Cycle 2019-2023 | | | | | | |
| Two-Way | | | | | | |
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | (16,182) | | | | | |
| O&M | | 3,431 | | | | |

| SDG&E DIMPBA Details Revenue Requirements (\$000) | | | | | |
|---|-----------------|---------------|-----------------|----------------|-----------------|
| Program Cycle 2019-2023 | | | | | |
| Two-Way | | | | | |
| Capital-Related Costs | | 10,244 | | | |
| Adjustments ¹ | | | | | |
| Interest | | | | (14) | |
| Subtotal | (16,182) | 13,675 | (16,681) | (3,006) | (14) |
| | | | | | (19,202) |

ii. SDG&E Regulatory Account – TIMPBA

| SDG&E TIMPBA Details Revenue Requirements (\$000) | | | | | | |
|---|--------------------------|---------------|-------------------|--------------------------------|-----------------|-----------------------|
| Program Cycle 2019-2023 | | | | | | |
| Two-Way | | | | | | |
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | 3,627 | | | | | |
| O&M | | 11,561 | | | | |
| Amortization | | | | | | |
| Capital-Related Costs | | 1,009 | | | | |
| Interest | | | | | 3 | |
| Subtotal | 3,627 | 12,570 | (11,060) | 1,510 | 3 | 5,140 |

iii. SDG&E Regulatory Account – Tree Trimming Balancing Account

| SDG&E Tree Trimming Balancing Account Details Revenue Requirements (\$000) | | | | | | |
|--|--------------------------|---------------|-------------------|--------------------------------|-----------------|-----------------------|
| Program Cycle 2019-2023 | | | | | | |
| Two-Way | | | | | | |
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | 53,900 | | | | | |

| SDG&E Tree Trimming Balancing Account Details Revenue Requirements (\$000) | | | | | |
|--|---------------|---------------|-----------------|---------------|---------------|
| Program Cycle 2019-2023 | | | | | |
| Two-Way | | | | | |
| O&M | | 52,167 | | | |
| Amortization | | | | | |
| Interest | | | 47 | | |
| Subtotal | 53,900 | 52,167 | (25,421) | 26,746 | 80,693 |

iv. SDG&E Regulatory Account – Overhead Pools Balancing Account

| SDG&E Overhead Pools Balancing Account Details Revenue Requirements (\$000) | | | | | | |
|---|--------------------------|----------------|-------------------|--------------------------------|-----------------|-----------------------|
| Program Cycle 2019-2023 | | | | | | |
| One-Way | | | | | | |
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | (26,527) | | | | | |
| Funding | | 169,637 | | | | |
| Interest | | | | | | |
| Subtotal | (26,527) | 169,637 | (121,364) | 48,273 | 0 | 21,746 |

v. SDG&E Regulatory Account – Wildfire Mitigation Plan (WMP) Memorandum Account

| SDG&E Wildfire Mitigation Plan Memorandum Account Details Revenue Requirements (\$000) | | | | | | |
|--|--------------------------|---------------|-------------------|--------------------------------|-----------------|-----------------------|
| Program Cycle 2019-2023 ² | | | | | | |
| Two-Way | | | | | | |
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | 93,107 | | | | | |
| O&M | | 114,299 | | | | |

SDG&E Wildfire Mitigation Plan Memorandum Account Details Revenue Requirements (\$000)
Program Cycle 2019-2023*
Two-Way

| | | | | |
|-----------------------|---------------|----------------|-----------------|---------------|
| Capital-Related Costs | 46,919 | | | |
| Interest | | | 77 | |
| Subtotal | 93,107 | 161,218 | (76,434) | 84,784 |
| | | | 77 | 177,968 |

D. SDG&E Balanced Program Regulatory Account Disposition

i. TIMP & DIMP

Per D.19-09-051, the TIMPBA and Post-2011 DIMPBA will continue for the 2019 GRC cycle. Any over- or under-collected balance at the end of each year within the GRC cycle will be carried over to the following year. For any under-collections as a result of overspending up to 35% of the total authorized O&M and capital expenditures, SDG&E will submit a Tier 3 advice letter seeking recovery of the under-collected amount. For under-collections due to overspending greater than 35% of the total authorized O&M and capital expenditures, SDG&E will seek recovery through a separate application. If SDG&E has not overspent in excess of the total authorized O&M and capital expenditures for the current GRC cycle, but an under-collection exists due to compounding of actual capital revenue requirement recorded in the balancing account, SDG&E will incorporate the under-collected balance in its annual regulatory account balance update submittal for recovery in the subsequent year's rates. For any unspent funds at the end of the current GRC cycle, SDG&E will propose in its next GRC proceeding to return the unspent funds in rates to customers.

ii. DIMPBA

In its TY 2019 GRC, SDG&E proposed to return to customers the Post-2011 DIMPBA over- collected balance as of December 31, 2018.3 Per D.19-09-052, the DIMPBA balance as of December 31, 2018, was transferred to CFCA and NFCA to be included in rates.

iii. TIMPBA

Pursuant to D.13-05-010, the Transmission Integrity Management Program Balancing Account (TIMPBA) was established to record actual Operations and Maintenance (O&M) and capital related costs associated with SDG&E's TIMP, to track the difference between authorized and actual expenditures. Pursuant to D.16-06-054 and AL 2777-G, SDG&E is authorized to recover the January 2016 – December 2018 costs reasonably incurred for pipeline integrity-related expenses. TIMPBA is a two-way balancing account.

iv. Tree Trimming Balancing Account

Pursuant to D.19-09-051, TY 2019 GRC, effective January 1, 2019, the TTBA will continue for the 2019 GRC cycle. TTBA is a two-way balancing account. SDG&E is required to file a Tier 3 advice letter for recovery of under-collections up to 35 percent of the revenue requirement and an application for under-collections above 35 percent. Any over-collected balance at the end of each year will be amortized in connection with its annual regulatory account balance update filing, for rates effective January 1 of the following year.

v. Overhead Pools Balancing Account

Pursuant to D.19-09-051, the Overhead Pools Balancing account (OPBA) was established as a non-interest bearing, one-way balancing account, to be in effect during the TY 2019 GRC cycle and evaluated at the end of the cycle. The OPBA shall apply to Electric Distribution customers, except for those specifically excluded by the Commission. The four overhead capital pools that are covered by this balancing account are the Local Engineering Electric Distribution pool; Local Engineering – Substation pool; the Department Overhead pool and the Contract Administration pool. This is a tracking account only and is not posted to the general ledger. The account will be evaluated for ratemaking purposes over the entire cycle covered by the TY 2019 GRC. If the account is over-collected at the end of the TY 2019 GRC cycle, the amount will be calculated into a revenue requirement to be refunded to

ratepayers. This adjustment will be included in the next available rate change following the TY 2019 GRC cycle.

vi. Wildfire Mitigation Plan Memorandum Account

Pursuant to D.19-05-039 and AL 3454-E / 2817-G, SDG&E established the Wildfire Mitigation Plan Memorandum Account (WMPMA) to record costs incurred to implement SDG&E's Commission-approved Wildfire Mitigation Plan, effective May 30, 2019. The WMPMA is a two-way memorandum account; it records the revenue requirement authorized in SDG&E's GRC (or other proceeding deemed appropriate by the Commission) for wildfire-related activities beginning on May 30, 2019, and O&M and capital-related costs associated with work performed based on activities in SDG&E's Wildfire Mitigation Plan, beginning on May 30, 2019. Accordingly, the WMPMA balance reflects those costs net of revenue requirement authorized in SDG&E's GRC. The WMPMA shall remain open until the Commission authorizes closure of the account. The WMPMA may be addressed in SDG&E's GRC proceeding or another proceeding deemed appropriate by the Commission.

APPENDIX – SDG&E’s EMERGENT, CANCELLED, AND DEFERRED PROJECT LIST

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|---------------------|----------------|--------------------------------|--------------------------|---|--|----------|
| Electric Generation | O&M | Electric Project Development | Non-RAMP | | Electric Project Development includes labor for (1) Manager - Electric Project Development and associated administrative expenses. This activity provides project management and business planning for existing and planned electric projects. | |
| Electric Generation | Capital | Palomar Adv Gas Path Overhaul | Non-RAMP | Capital project to enhance the operating performance of the two combustion turbines at Palomar Energy Center. Upgrades included installing improved turbine materials, enhancing air and gas flow, and increasing firing temperature. | | |
| Electric Generation | Capital | Palomar Green Hydrogen Systems | Non-RAMP | Capital project focused on demonstrating multiple use cases of electrolytically produced hydrogen to support decarbonizing natural gas-powered plant operations. This pilot project focuses on increased understanding of hydrogen’s behavior and impact on SDG&E’s turbines; the impact on various emissions; how to design, operate, and maintain hydrogen equipment; and | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|---------------------------------|--------------------------|--|-----------|----------|
| | | | | how to reduce the unit cost of hydrogen. | | |
| Gas Distribution | O&M | Field O&M - Main Maintenance | Emergent RAMP (GED) | Gas Emergency Department – When SDG&E is notified of a gas emergency, it is critical to respond immediately and take measures to control escaping gas in the interest of public safety. To improve gas emergency response time, SDG&E established the GED. The GED is organized as two-person crews dedicated to gas emergency response. The GED operates 24/7 in overlapping shifts to provide ample coverage during peak periods, allowing for rapid response to calls of escaping gas. These dedicated “specialist” crews responding to gas emergencies reduce the risk of injuries and property damage to both the public and crew responding to the incident. | | |
| Gas Distribution | O&M | Field O&M - Service Maintenance | Emergent RAMP (GED) | Gas Emergency Department – When SDG&E is notified of a gas emergency, it is critical to respond immediately and take measures to control escaping gas in the interest of public safety. To improve gas emergency response time, SDG&E established the | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|---------------------------------|--------------------------|--|-----------|----------|
| | | | | <p>GED. The GED is organized as two person crews dedicated to gas emergency response. The GED operates 24/7 in overlapping shifts to provide ample coverage during peak periods allowing for rapid response to calls of escaping gas. These dedicated “specialist” crews responding to gas emergencies reduce the risk of injuries and property damage to both the public and crew responding to the incident.</p> | | |
| Gas Distribution | O&M | Field O&M - Service Maintenance | Emergent Leak Repair | <p>Leak Repair – SDG&E’s maintenance crews investigate leak indications and make repairs as needed. Completing leak repairs generally requires excavating in paved streets and landscaped areas to determine the exact location of the leak. This work often involves pavement cutting, trenching, and then repair of pipe facilities, followed by backfilling the excavation, compacting the soil, and making permanent repairs to pavement and landscaping as needed. Main leak evaluation and repair work is generally completed to mitigate risks associated with hazards to</p> | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|---------------------------|---|---|-----------|----------|
| Gas Distribution | Capital | New Business | New Business: Field and Public Safety - CSF Orders related to Public Safety | public safety, and to address infrastructure condition, and material degradation. Field and Public Safety includes the purging of customer houselines. Purge orders are issued to promote customer safety by confirming customer owned gas houselines are safe and leak-free and odorant is readily detectable. Purge orders usually involve large gas meter installations and customer-owned gas systems for multifamily residential, commercial, and industrial customers. These jobs usually relate to new construction projects where Gas Distribution Pipeline Operations sets a large gas meter and the Company schedules a date for Customer Service Field to test and purge the houseline. | | |
| Gas Distribution | Capital | GD Local Engineering Pool | Gas Handling Plans RAMP | The Gas Handling Plan is developed, reviewed and signed by design, engineering, and construction supervisory personnel and is a site-specific document with detailed procedures and graphical flow depictions describing the step-by-step | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|------------------------------|--|--|-----------|----------|
| Gas Distribution | Capital | GD Local Engineering Pool | RAMP Geographic Information System Group | <p>processes, to “handle” the diversion of gas flow internal to the piping system.</p> <p>This is the base expense for the Gas GGIS department in Gas Distribution for pipeline records management.</p> <p>The activities included in this non-RAMP Department Overhead pool consists of expenses for supervision and administration of gas crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects, or the Construction and Operation (C&O) districts as a whole. Certain costs are incurred by capital projects that originate from central activities, which are subsequently distributed to those capital projects. These central activity costs are also called ‘pooled’ or ‘overhead’ costs.</p> | | |
| Gas Distribution | Capital | Gas Department Overhead Pool | Non-RAMP | <p>This activity included in this non-RAMP Contract Administration (CA) pool consists of those expenses necessary for the administration of projects that</p> | | |
| Gas Distribution | Capital | Gas Contract Admin Pool | Non-RAMP | | | |

| Business Unit | O&M or Capital | WP Activity or Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|---|---|---|--|---|
| | | | | are performed by contractors for SDG&E. The expenses to this pool consist of labor for Contract Administrators and support personnel and the associated non-labor support costs, such as office and field supplies. This pool includes the costs that will be allocated to contracted work. | | |
| Gas Distribution | Capital | GD Local Engineering Pool | Improvements to Cathodic Protection reliability | | In an effort to streamline resources between SoCalGas and SDG&E, SDG&E installed Real Time Monitoring Units to provide real time data on each rectifier station and is canceling algorithm program development and instead using the new quantitative risk assessment that is being developed by SoCalGas. | |
| Gas Transmission | Capital | GT M&R Stations | Non-RAMP | Biome Rule 39 - Sanco Project | | |
| Facilities | Capital | Remodel/Relocate/Reconfig Blanket | Non-RAMP | | | Century Park building 4 & 5 tenant improvements |
| Human Resources | Capital | Contractor Field Safety Management Pool | Field Safety Oversight | Newly created in 2021 to capture contractor safety expenses. | | |
| Human Resources | O&M | Safety, Wellness & Disability Services | Non-RAMP | Safety Management System Program | | |

| Business Unit | O&M or Capital | WP Activity or Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|--|---|--|---------------------------------------|--|
| Human Resources | O&M | Safety, Wellness & Disability Services | OSHA Required Training and Training Required per Company Safety Standards | OSHA Required Training and Training Required per Company Safety Standards | | |
| IT | O&M | DCAM Program | Non-RAMP | DCAM Program | | |
| IT | O&M | IT Serv Contin Mgmt | Non-RAMP | IT Service Contin Mgmt | | |
| IT | O&M | Infrastructure Portf | Non-RAMP | Infrastructure Portfolio | | |
| IT | O&M | Identity & Access Management | Cybersecurity risk and vulnerability | Identity & Access Management | | |
| IT | O&M | Enterprise Operations | Non-RAMP | Enterprise Operations | | |
| IT | O&M | Client Services Maintenance & Support | Non-RAMP | | Client Services Maintenance & Support | |
| IT | Capital | IT - Enterprise - Application | Non-RAMP | Equipment inspections and vegetation management, Application Vulnerability & Modernization and Data Foundation and Analytics Solution. | | |
| IT | Capital | IT - Enterprise – Infrastructure | Non-RAMP | | Mainframe Capacity Hardware Upgrade | |
| IT | Capital | Customer Services | Non-RAMP | | | Smart Meter upgrade for SDG&E territory |
| Customer Service | O&M | Advanced Metering Ops | Workforce Planning | | | Workforce Planning is the risk of the loss of employees with deep knowledge, understanding, and experience |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|---------------|----------------|-------------------------|--------------------------|----------|-----------|---|
| | | | | | | <p>in operations due to retirements. Employees age 62 or older who meet Company requirements are eligible and considered likely to retire. The departure of employees who fill critical operational roles could affect employee and/or public safety, as their knowledge and experience is essential to safely operating and maintaining SDG&E's gas and electric systems. Generally, these roles tend to be highly specialized, and employees tend to remain in these jobs for many years,</p> |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|-----------------------|----------------|--|--------------------------|--|-----------|---|
| | | | | | | gaining experience and a heightened awareness towards safety. |
| Electric Distribution | Capital | Planned Investments | Non-RAMP | Planned Investments | | |
| Electric Distribution | Capital | TL633 Reconductor (Bernardo - Rancho Carmel) | Non-RAMP | TL633 Reconductor (Bernardo - Rancho Carmel) | | |
| Electric Distribution | Capital | Electric Transmission Tools/Equipment | Non-RAMP | Electric Transmission Tools/Equipment | | |
| Electric Distribution | Capital | Blue Hornet Solar | Non-RAMP | Blue Hornet Solar | | |
| Electric Distribution | Capital | Fallbrook Battery Energy Storage - PTO | Non-RAMP | Fallbrook Battery Energy Storage - PTO | | |
| Electric Distribution | Capital | Gateway Energy Storage | Non-RAMP | Gateway Energy Storage | | |
| Electric Distribution | Capital | Kettle Solar One | Non-RAMP | Kettle Solar One | | |
| Electric Distribution | Capital | Mount Laguna Wind | Non-RAMP | Mount Laguna Wind | | |
| Electric Distribution | Capital | Rugged Solar Farm | Non-RAMP | Rugged Solar Farm | | |
| Electric Distribution | Capital | Top Gun PTO Interconnection | Non-RAMP | Top Gun PTO Interconnection | | |
| Electric Distribution | Capital | Valley Center Renewable | Non-RAMP | Valley Center Renewable | | |
| Electric Distribution | Capital | San Mateo Substation Rebuild (start in 2019) | Non-RAMP | San Mateo Substation Rebuild (start in 2019) | | |
| Electric Distribution | Capital | Avocado Sub 69KV Rebuild | Non-RAMP | Avocado Sub 69KV Rebuild | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|-----------------------|----------------|--|--|--|-----------|----------|
| Electric Distribution | Capital | Substation Mod to Support FLISR | Substation Modification To Support FLISR | Substation Mod to Support FLISR | | |
| Electric Distribution | Capital | Power Quality Program | Power Quality Monitor Deployment and Replacement | Power Quality Program | | |
| Electric Distribution | Capital | 12kV Substation Reliability | Torrey Pines 12kV Breaker Replacements | Torrey Pines 12kV Breaker Replacements | | |
| Electric Distribution | Capital | 12kV Substation Reliability | El Cajon 12kV Breaker Replacements | El Cajon 12kV Breaker Replacements | | |
| Electric Distribution | Capital | 12kV Substation Reliability | Non-RAMP | Melrose 12kV Breaker Replacements Kettner Rebuild | | |
| Electric Distribution | Capital | 12kV Substation Reliability | Granite 12kV Breaker & Switchgear Replacements | Granite 12kV Breaker & Switchgear Replacements | | |
| Electric Distribution | Capital | Coronado 69/12kV Transformer Replacement | Substation Reliability for Distribution Components - Coronado 69/12kV Transformer Replacements | Coronado 69/12kV Transformer Replacement | | |
| Electric Distribution | Capital | La Jolla 69/12kV Transformer Replacement | La Jolla 69/12kV Transformer Replacement | La Jolla 69/12kV Transformer Replacement | | |
| Electric Distribution | Capital | Non-HFTD WFI | Non-HFTD Wireless Fault Indicator | Non-HFTD WFI | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|-----------------------|----------------|---|--|---|-----------|----------|
| Electric Distribution | Capital | Mission 12kV Replacements | Mission 12KV Replacements | Mission 12kV Replacements | | |
| Electric Distribution | Capital | Transmission System Automation | Non-RAMP | Transmission System Automation | | |
| Electric Distribution | Capital | Artesian 230Kv Substation Expansion | Substation Reliability For Distribution Components - Proactive | Artesian 230Kv Substation Expansion | | |
| Electric Distribution | Capital | High Risk Switch Replacement Project | Distribution Overhead Switch Replacement Program | High Risk Switch Replacement Project | | |
| Electric Distribution | Capital | Urban Substation Rebuild | Substation Reliability For Distribution Components - Proactive | Urban Substation Rebuild | | |
| Electric Distribution | Capital | Mission Substation 230kV Rebuild | Non-RAMP | Mission Substation 230kV Rebuild | | |
| Electric Distribution | Capital | TL603 Loop-in (Sweetwater, National City, and Naval Station Metering) | Transmission OH Reliability Projects | TL603 Loop-in (Sweetwater, National City, and Naval Station Metering) | | |
| Electric Distribution | Capital | TL673 Direct Buried Cable Replacement (Rose Canyon - La Jolla) | Transmission OH Reliability Projects | TL673 Direct Buried Cable Replacement (Rose Canyon - La Jolla) | | |
| Electric Distribution | Capital | TL6975- Escondido - San Marcos | Transmission OH Reliability Projects | TL6975- Escondido - San Marcos | | |
| Electric Distribution | Capital | CBM - 4.2 Firmware Upgrade for Transformers | Non-RAMP | CBM - 4.2 Firmware Upgrade for Transformers | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|-----------------------|----------------|---|---|---|-----------|----------|
| Electric Distribution | Capital | Vista Fuel Cell | Non-RAMP | Vista Fuel Cell | | |
| Electric Distribution | Capital | TL698 AVOCADO SUB GATEWAY DB CBL REPLACE | Non-RAMP | TL698 AVOCADO SUB GATEWAY DB CBL REPLACE | | |
| Electric Distribution | Capital | TL23001/04 Insulator and Hardware Replacement | Non-RAMP | TL23001/04 Insulator and Hardware Replacement | | |
| Electric Distribution | Capital | Proactive Dead Front Terminator Deploy | Replacement of Live Front Equipment - Proactive | Proactive Dead Front Terminator Deploy | | |
| Electric Distribution | Capital | CAST Security Upgrades | Non-RAMP | CAST Security Upgrades | | |
| Electric Distribution | Capital | Datamation Secure Cabinet | Non-RAMP | Datamation Secure Cabinet | | |
| Electric Distribution | Capital | Rebuilding of Skills Training Yard | Non-RAMP | Rebuilding of Skills Training Yard | | |
| Electric Distribution | Capital | Overhead Public Safety | Overhead distribution modernization and hardening | Overhead Public Safety | | |
| Electric Distribution | Capital | Substation Security Proj under \$500K | Non-RAMP | Substation Security Proj under \$500K | | |
| Electric Distribution | Capital | TL600 - Reliability Pole Replacements | Non-RAMP | TL600 - Reliability Pole Replacements | | |
| Electric Distribution | Capital | TL674A Del Mar Reconfigure/TL666D RFS | Non-RAMP | TL674A Del Mar Reconfigure/TL666D RFS | | |
| Electric Distribution | Capital | SX-PQ 230 kV Line | Non-RAMP | SX-PQ 230 kV Line | | |
| Electric Distribution | Capital | Miguel Substation 230kV Rebuild | Non-RAMP | Miguel Substation 230kV Rebuild | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|-----------------------|----------------|--------------------------------------|---|--------------------------------|--------------------------------------|----------|
| Electric Distribution | Capital | Vault Restoration | Non-RAMP | | Vault Restoration | |
| Electric Distribution | Capital | OIR Worst Circuits | Non-RAMP | | OIR Worst Circuits | |
| Electric Distribution | Capital | Electric Distribution Grid Analytics | Non-RAMP | | Electric Distribution Grid Analytics | |
| Electric Distribution | Capital | Elect Integrity - RAMP (Non-WMP) | Wire Correction, Switch Replacement and Underground Connector Upgrade Program | | Elect Integrity - RAMP (Non-WMP) | |
| Balanced | O&M | Wildfire Mitigation Program | Fuels Management | Fuels Management | | |
| Balanced | O&M | Wildfire Mitigation Program | Asset Management & Inspections | Asset Management & Inspections | | |
| Balanced | O&M | Wildfire Mitigation Program | Drone Inspection Program | Drone Inspection Program | | |
| Balanced | O&M | Wildfire Mitigation Program | Hotline Clamps | Hotline Clamps | | |
| Balanced | O&M | Wildfire Mitigation Program | Resiliency Grant Programs | Resiliency Grant Programs | | |
| Balanced | O&M | Wildfire Mitigation Program | Standby Power Programs | Standby Power Programs | | |
| Balanced | O&M | Wildfire Mitigation Program | Resiliency Assistance Programs | Resiliency Assistance Programs | | |
| Balanced | O&M | Wildfire Mitigation Program | Microgrids | Microgrids | | |
| Balanced | O&M | Wildfire Mitigation Program | PSPS Communications Protocols | PSPS Communications Protocols | | |
| Balanced | O&M | Wildfire Mitigation Program | WMP Tribal Customer Support | WMP Tribal Customer Support | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|---------------|----------------|-------------------------------|--|--|-----------|----------|
| Balanced | O&M | Wildfire Mitigation Program | WMP AFN Customer Support | WMP AFN Customer Support | | |
| Balanced | O&M | Wildfire Mitigation Program | Emergency Management Operations (PSPS) | Emergency Management Operations (PSPS) | | |
| Balanced | O&M | Wildfire Mitigation Program | Wildfire Mitigation Personnel | Wildfire Mitigation Personnel | | |
| Balanced | O&M | Wildfire Mitigation Program | Risk Assessment & Mapping | Risk Assessment & Mapping | | |
| Balanced | O&M | Wildfire Mitigation Program | Data Governance | Data Governance | | |
| Balanced | O&M | Wildfire Mitigation Program | LiDAR Flights | LiDAR Flights | | |
| Balanced | O&M | Wildfire Mitigation Program | Covered Conductor | Covered Conductor | | |
| Balanced | O&M | Wildfire Mitigation Program | Strategic Undergrounding | Strategic Undergrounding | | |
| Balanced | O&M | Wildfire Mitigation Program | Vegetation Restoration Initiative | Vegetation Restoration Initiative | | |
| Balanced | Capital | Customer Services | Stakeholder Cooperation & Community Engagement | Stakeholder Cooperation & Community Engagement | | |
| Balanced | Capital | PSPP Enhancements | Communication Practices | Communication Practices | | |
| Balanced | Capital | IT - Enterprise - Application | Emergency Planning & Preparedness | Emergency Planning & Preparedness | | |
| Balanced | Capital | IT - Enterprise - Application | Data Governance (BC 208750) | Data Governance (BC 208750) | | |
| Balanced | Capital | IT - Enterprise - Application | Data Governance (BC 208910) | Data Governance (BC 208910) | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|---------------|----------------|---|-------------------------------------|--|-----------|----------|
| Balanced | Capital | IT - Enterprise - Application | Situational Awareness & Forecasting | Situational Awareness & Forecasting | | |
| Balanced | Capital | IT - Enterprise - Application | Resource Allocation Methodology | Resource Allocation Methodology | | |
| Balanced | Capital | IT - Enterprise - Application | Asset Management | Asset Management | | |
| Balanced | Capital | IT - Enterprise - Application | Emergency Management Operations | Emergency Management Operations | | |
| Balanced | Capital | IT - Enterprise - Application | Communication Practices | Communication Practices | | |
| Balanced | Capital | IT - Enterprise - Application | Centralized Repository for Data | Emergent need to implement systems to support wildfire mitigation activities: 1. Electric Distribution Asset Investment Prioritization 2. WSD Data Schema 3. Wildfire Mitigation Advanced Analytics | | |
| Balanced | Capital | HFTD Fuse Replacements | Expulsion Fuse Replacements | HFTD Fuse Replacements | | |
| Balanced | Capital | PSPS Engineering Enhancements | PSPS Sectionalizing | PSPS Engineering Enhancements | | |
| Balanced | Capital | HFTD Undergrounding | Strategic Undergrounding | HFTD Undergrounding | | |
| Balanced | Capital | Meteorology - Fire Science Enhancements | WRRM - OPS | Meteorology - Fire Science Enhancements | | |
| Balanced | Capital | Backup Power for Resiliency | Microgrids | Backup Power for Resiliency | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|---------------|----------------|--|--|--|-----------|---------------------|
| Balanced | Capital | TL691 Avo-Mon Wood to Steel - RAMP Incremental | Inspection Repair Maintenance & Replacement Programs | TL691 Avo-Mon Wood to Steel - RAMP Incremental | | |
| Balanced | Capital | TL639 Wood to Steel Replacement | Inspection Repair Maintenance & Replacement Programs | TL639 Wood to Steel Replacement | | |
| Balanced | Capital | TL636 Wood to Steel Replacement | Inspection Repair Maintenance & Replacement Programs | TL636 Wood to Steel Replacement | | |
| Balanced | Capital | Drone Investigation Assessment And Repair | Distribution System Inspection Drone Inspections | Drone Investigation Assessment And Repair | | |
| Balanced | Capital | AVIATION FIREFIGHTING PROGRAM | Grid Operations & Operating Protocols | Aviation Firefighting Program | | |
| Balanced | Capital | Transmission DIAR UAS Purchase | Aviation Firefighting Program | Transmission DIAR UAS Purchase | | |
| Balanced | Capital | IR Flir Monocular | Inspection Repair Maintenance & Replacement Programs | IR Flir Monocular | | |
| Balanced | Capital | TL694 Wood To Steel | OH Trans Fire Hardening Dist Underbuild | | | TL694 Wood To Steel |

ATTACHMENT B

SOCALGAS's 2021 RISK SPENDING ACCOUNTABILITY REPORT

1. SOCALGAS Gas

i. SoCalGas Gas Distribution Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|---|---|----------------------|---------------------------------|---------------------|------------|---|---|---------------|-----------------|-----------------|---|-------------------------------------|----|
| | | | | | | | | | | | | | |
| Gas Distribution | | 172,556 | 162,711 | 9,845 | 6% | | | | | | | | |
| Field Services Leadership & Operations Assessment | Non-RAMP | 409 | 311 | 98 | 31% | This activity consists of the salary and non-labor expenses for the Vice President of Gas Distribution Organization and non-labor expenses that benefit the entire organization. The variety of activities makes it infeasible to calculate units. | | | | | | No | No |
| Field Support | Non-RAMP | 17,267 | 14,606 | 2,661 | 18% | Recorded to Field Services Non-RAMP are a variety of support services to successfully complete daily Gas Distribution O&M activities. The primary components include: field supervision; clerical support; dispatch operations; off-production time; materials support; and removal of abandoned mains. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | No | No |
| Field Support | Maintenance - Pipeline observation "Standby" (From Field Support) | 0 | 3,763 | (3,763) | -100% | This activity is captured by the RAMP activity in the Locate & Mark Workpaper called "QA Job Observations Field Rides and Job Monitoring". | | | | | | Yes | No |
| Field Support | PPE and Safety Equipment | 0 | 22 | (22) | -100% | This RAMP activity is related to the purchase of Confined Space Air Monitoring System for Field Personnel. This RAMP activity was anticipated to occur in 2018 and 2019. No costs were incurred in 2020 or 2021 (i.e., there were no units in 2020 or 2021). | | | | | | No | No |
| Field Support | Qualifications of Pipeline Personnel | 4,994 | 2,677 | 2,317 | 87% | 147,956 | This activity is being tracked by student training hours. The variety of classes and fluctuating frequency of classes makes it infeasible to identify a single imputed authorized unit of measurement. | | | | | Yes | No |
| Field Support | Contractor Management and Traffic Control | 639 | 1,668 | (1,029) | -62% | This activity consists of the time of inspection, documentation of inspections, and invoicing related to contractors working on Gas Company facilities. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | Yes | No |
| Field Support | QA Job Observations Field Rides and Job Monitoring | 123 | 65 | 58 | 89% | 2,566 | This activity is being tracked by supervisor inspection hours, which consists of the time spent by supervisors observing Company crews while performing various field activities. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | | | No | No |
| Sub-Total Field Support | | 23,023 | 22,801 | 222 | 1% | | | | | | No | | |
| Leak Survey | Non-RAMP | 938 | 2,777 | (1,838) | -66% | 10,366 | These non-RAMP activities comply with 49 CFR part 192, Subpart M. These activities include Bar Per Policy (BPP) orders and Special Leakage Surveys. Both order types are driven by external factors that vary from year to year. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | | | Bar Per Policy (BPP) Orders | No |
| | | | | | | 586 | Special Survey Miles | Yes | No | | | | |
| Leak Survey | Maintenance - Leak Survey | 9,505 | 9,605 | (100) | -1% | 35,416 | This activity is being tracked by leakage survey orders. The objective of a leakage survey is to conduct a thorough search for gas leak | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|------------------------------------|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Sub-Total Leak Survey | | 10,443 | 12,381 | (1,938) | -16% | | | | | | No | |
| Locate & Mark | Non-RAMP | 1,789 | 43 | 1,746 | 4019% | | | | | | Yes | No |
| Locate & Mark | Locate & Mark Activities | 15,088 | 16,532 | (1,444) | -9% | 900,960 | | | | USA Tickets | No | No |
| Locate & Mark | QA Job Observations Field Rides and Job Monitoring | 3,481 | 1,783 | 1,698 | 95% | 3,440 | | | | Standby Orders | Yes | No |
| Sub-Total Locate & Mark | | 20,358 | 18,358 | 2,000 | 11% | | | | | | No | |
| Main Maintenance | Non-RAMP | 27,402 | 17,571 | 9,832 | 56% | 34,220 | | | | Main Maintenance Orders | Yes | No |
| Main Maintenance | Contracting for Traffic Control Delineation materials -- Distribution Only. Outside vendors | 1,255 | 1,853 | (598) | -32% | | | | | | No | No |
| Main Maintenance | Maintenance - Valve Inspection and Maintenance (From Field Support) | 1,013 | 933 | 80 | 9% | 6,417 | | | | Medium Pressure Valve Inspection Orders | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | 2021 | | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-----------------------------------|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---|---------------------------------------|-----------------|---|-------------------------------------|
| | | | | | | | | Imputed Units | Unit Variance | | | |
| Main Maintenance | High-Pressure Pipeline Failure, Project Maintenance - Valve Installation (Distribution High Pressure) (From Field Support) | 69 | 64 | 5 | 8% | 439 | 439 | work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. This activity supports compliance with 49 CFR 192.747. This activity is being tracked by valve inspection orders. This RAMP activity represents the high-pressure valve inspections. Valves are checked and serviced at intervals not exceeding 15 months, but at least once each calendar year. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | High Pressure Valve Inspection Orders | No | No | |
| Main Maintenance | Maintenance - Pipeline Patrol (From Field Support) | 79 | 214 | (135) | -63% | 434 | 434 | This activity is being tracked by Pipeline Patrol orders. The objective of the patrol program is to observe surface conditions on and adjacent to the pipeline right-of-way for indications of leaks, construction activity, and other factors affecting safety and operation to comply with 49 CFR 192.705 and 192.721. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | Pipeline Patrol Orders | No | No | |
| Main Maintenance | Maintenance - Bridge and Span (From Field Support) | 83 | 131 | (48) | -37% | 732 | 732 | This activity is being tracked by Bridge and Span orders and involves inspecting for signs of atmospheric corrosion on pipelines that are exposed to the atmosphere. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | Bridge and Span Orders | No | No | |
| Main Maintenance | Maintenance - Unstable Earth Inspection (From Field Support) | 12 | 8 | 4 | 43% | 140 | 140 | This activity is being tracked by Unstable Earth orders. The objective of unstable earth orders is to inspect locations where physical movement or external loading could occur that could cause failure or leakage. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | Unstable Earth Orders | No | No | |
| Sub-Total Main Maintenance | | 29,913 | 20,775 | 9,138 | 44% | | | | | | Yes | |
| Service Maintenance | Non-RAMP | 15,919 | 18,023 | (2,103) | -12% | 30,413 | 30,413 | The variety and scope of work for service maintenance (leak repair, leak investigation, leak re-evaluate, riser leak repair & maintenance, meter set leak repair & maintenance, misc. maintenance, etc.) makes it infeasible to identify a single imputed authorized unit of measurement. | Service Maintenance Orders | No | No | |
| Tools Fittings & Materials | Non-RAMP | 12,029 | 8,962 | 3,067 | 34% | | | Included in this category are materials used and expenses necessary for small tools, small pipe fittings, miscellaneous pipeline materials, and miscellaneous installation materials used during construction and maintenance activities and those held in inventory as vehicle truck stock. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit. | | Yes | No | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual/Authorized Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|------------|------------------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Tools Fittings & Materials | PPE and Safety Equipment – Company-wide purchases of personal protective equipment (PPE) | 1,913 | 750 | 1,163 | 155% | | | | | This RAMP activity is comprised of a variety of purchases related to personal protective equipment (PPE). The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit. | Yes | No |
| Tools Fittings & Materials | PPE and Safety Equipment - Uniform rentals for employees - both protective and for security | 600 | 1,117 | (517) | -46% | | | | | This RAMP activity is comprised of uniform rentals for employees that provide both protection and security for our employees. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit. | No | No |
| Sub-Total Tools Fittings & Materials | | 14,542 | 10,829 | 3,713 | 34% | | | | | This activity consists of services provided by the Technical Office. Activities performed by this office include identifying construction design requirements, evaluating pressure specifications, conducting pipeline planning, and obtaining permits. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit. | Yes | |
| Asset Management | Non-RAMP | 8,960 | 7,965 | 995 | 12% | | | | | This activity consists of maintaining and operating regulator stations and support services provided by management and administrative personnel. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit. | No | No |
| Measurement & Regulation | Non-RAMP | 8,502 | 9,702 | (1,199) | -12% | | | | | This activity consists of maintaining and operating regulator stations and support services provided by management and administrative personnel. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit. | No | No |
| Measurement & Regulation | Maintenance - Inspect meters, regulators, and gauges to evaluate and confirm overpressure protection is in place and maintained. | 1,811 | 1,588 | 223 | 14% | 3,644 | | | | This activity includes the inspection of meters, regulators and gauges. The variety and scope of work for this RAMP activity makes it infeasible to identify a single imputed authorized unit. | No | No |
| Measurement & Regulation | Maintenance - Inspections of meter set assemblies (MSA) in the system. | 5,401 | 5,713 | (312) | -5% | 21,605 | | | | This activity includes large MSA maintenance, investigations of unusual consumption, planned meter changes, customer regulator maintenance, replacements, etc. The variety and scope of work for this RAMP activity makes it infeasible to identify a single imputed authorized unit. | No | No |
| Sub-Total Measurement & Regulation | | 15,714 | 17,003 | (1,289) | -8% | | | | | | No | |
| Cathodic Protection | Requirements for Corrosion Control | 18,622 | 19,837 | (1,215) | -6% | 44,441 | | | | This activity includes impressed current reads, magnesium anode reads, down reads, anode installation, troubleshooting, etc. The variety and scope of work for this RAMP activity makes it infeasible to identify a single imputed authorized unit of measurement. | No | No |
| Cathodic Protection | Gas Facility and Pipeline Inspections | 2,018 | 1,002 | 1,016 | 101% | 40,103 | | | | This activity includes the inspection of separately protected pipe sections per 49 CFR 192 Subpart I. The method to calculate imputed authorized dollars makes it infeasible to identify a single imputed authorized unit of measurement. | Yes | No |
| Sub-Total Cathodic Protection | | 20,640 | 20,839 | (199) | -1% | | | | | | No | |
| Operations And Management | Non-RAMP | 8,621 | 7,333 | 1,288 | 18% | | | | | This activity includes support from operations leadership and field management. Operations leadership involves Company leaders responsible for setting the tone and direction of their respective organizations. Field | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actuals | | 2021 Imputed Authorized | | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|---|----------------------|---------------------------------|---------------------|------------|--------------|------------|-------------------------|------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | Units | Authorized | Units | Authorized | | | | | |
| Operations And Management | Policy, Procedures, Standards and ESCMP | 0 | 1,047 | (1,047) | -100% | | | | | | | | Yes | No |
| Sub-Total Operations And Management | | 8,621 | 8,379 | 241 | 3% | | | | | | | | No | |
| Regional Public Affairs | Non-RAMP | 4,013 | 5,046 | (1,033) | -20% | | | | | | | | Yes | No |

SoCalGas Gas Distribution O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|---|---|-------------------------------------|--|
| Field Support | Maintenance - Pipeline observation "Standby" (From Field Support) | Yes | No | The variance in this paperwork is due to an inadvertent error in the way this line item was presented in the TY 2019 GRC. The "standby" dollars should not be recorded within the Field Support paperwork. The costs for these activities are (and should be) presented in the RAMP Locate & Mark Workpaper, "QA Job Observations Field Rides and Job Monitoring." |
| Field Support | Qualifications of Pipeline Personnel | Yes | No | The variance is due to increased number of students and training classes to support increased hiring for field personnel. |
| Field Support | Contractor Management and Traffic Control | Yes | No | The variance is due to lower than forecasted contractor work requiring inspection. SoCalGas has been increasing its internal hiring in an effort to perform more work utilizing internal resources than forecasted prior to the GRC cycle. |
| Leak Survey | Non-RAMP | Yes | No | The variance is attributable to fewer orders than anticipated. Both order types (BPP and Special Leak Survey) are driven by external factors that are beyond SoCalGas's control. BPP orders are typically follow-up orders driven by customer requests through the Customer Services Department. Special Leak Survey orders are typically driven by Franchise (City) requests. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|----------------------------|--|---|-------------------------------------|---|
| Locate & Mark | Non-RAMP | Yes | No | The variance is driven by a combination of higher than anticipated costs in excavation to locate/depth check orders and USA Membership fees. |
| Locate & Mark | QA Job Observations Field Rides and Job Monitoring | Yes | No | Standby orders, which are driven by factors outside the control of SoCalGas, were higher than anticipated in 2021. SoCalGas believes this increase is likely attributed to a greater awareness by the public of the 811Call Before You Dig process, due to the efforts of SoCalGas's Damage Prevention Team and the Dig Safe Board. |
| Main Maintenance | Non-RAMP | Yes | No | The variance is due to repairing more leaks in 2021 than forecasted. In addition, activities to address paving orders also contributed towards increased non-labor costs. |
| Tools Fittings & Materials | Non-RAMP | Yes | No | The variance is due to higher than anticipated work volumes and incremental tool purchases for field personnel. |
| Tools Fittings & Materials | PPE and Safety Equipment – Company-wide purchases of personal protective equipment (PPE) | Yes | No | The variance is due to increased purchases of PPE and safety equipment associated with increased hiring of field personnel. |
| Cathodic Protection | Gas Facility and Pipeline Inspections | Yes | No | The variance is due to the need for higher CP10 remediation support by contractors due to increased environmental and safety rules. |
| Operations And Management | Policy, Procedures, Standards and ESCMP | Yes | No | The variance is attributable to the costs for these activities, as reported within the Gas System Integrity section of this report. |
| Regional Public Affairs | Non-RAMP | Yes | No | The variance is due to lower than forecast staffing levels during 2021. |

ii. SoCalGas Gas Distribution O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|---|---|---|---|
| Field Support | Maintenance - Pipeline observation "Standby" (From Field Support) | SCG-04-R GOM-62 to GOM-69 WP 2GD000.000 | SCG-04 MAA-28 to MAA-33 WP 2GD002 | Recorded to the Field Services workgroup are a variety of support services to successfully complete daily Gas Distribution O&M activities. Activities primarily include: field supervision, clerical support, dispatch operations, off-production time, materials support and removal of abandoned mains. This category |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--|---|---|--|
| | | | | includes costs for activities, as described, designed to mitigate employee safety risks. Recorded to the Field Services workgroup are a variety of support services to successfully complete daily Gas Distribution O&M activities. Activities primarily include: field supervision, clerical support, dispatch operations, off-production time, materials support and removal of abandoned mains. This category includes costs for activities, as described, designed to mitigate employee safety risks. |
| Field Support | Qualifications of Pipeline Personnel | SCG-04-R GOM-62 to GOM-69 WP 2GD000.000 | SCG-04 MAA-53 to MAA-58 WP 2GD000 | Recorded to the Field Services workgroup are a variety of support services to successfully complete daily Gas Distribution O&M activities. Activities primarily include: field supervision, clerical support, dispatch operations, off-production time, materials support and removal of abandoned mains. This category includes costs for activities, as described, designed to mitigate employee safety risks. |
| Field Support | Contractor Management and Traffic Control | SCG-04-R GOM-62 to GOM-69 WP 2GD000.000 | SCG-04 MAA-63 to MAA-66 WP 2GD010 | Recorded to the Field Services workgroup are a variety of support services to successfully complete daily Gas Distribution O&M activities. Activities primarily include: field supervision, clerical support, dispatch operations, off-production time, materials support and removal of abandoned mains. This category includes costs for activities, as described, designed to mitigate employee safety risks. |
| Leak Survey | Non-RAMP | SCG-04-R GOM-36 to GOM-40 WP 2DG000.001 | SCG-04 MAA-24 to MAA-28 WP 2GD001 | The activity in this workgroup is associated with federal and state pipeline safety regulations pertaining to surveying for gas leaks. |
| Locate & Mark | Non-RAMP | SCG-04-R GOM-31 to GOM-36 WP 2GD000.002 | SCG-04 MAA-28 to MAA-33 WP 2GD002 | The work in this workgroup is initiated by third-party excavators requesting SoCalGas to identify substructures at locations of planned excavations. The performed work is preventative in nature and required to avert damages caused by third-party excavators working near gas underground substructures. Activities primarily include: locating and marking SoCalGas's underground pipelines; conducting job observations; performing pothole operations; and performing depth checks. |
| Locate & Mark | QA Job Observations Field Rides and Job Monitoring | SCG-04-R GOM-31 to GOM-36 WP 2GD000.002 | SCG-04 MAA-28 to MAA-33 WP 2GD002 | The work in this workgroup is initiated by third-party excavators requesting SoCalGas to identify substructures at locations of planned excavations. The performed work is preventative in nature and |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|----------------------------|---|---|---|---|
| | | | | required to avert damages caused by third-party excavators working near gas underground substructures. Activities primarily include: locating and marking SoCalGas's underground pipelines; conducting job observations; performing pothole operations; and performing depth checks. |
| Main Maintenance | Non-RAMP | SCG-04-R GOM-49 to GOM-56 WP 2GD000.003 | SCG-04 MAA-37 to MAA-41 WP 2GD003 | Work in this workgroup is designed to meet federal (49 CFR 192) and state (GO 112-F, SB1371) pipeline safety regulations and to extend the life of distribution main pipelines and related infrastructure. Main maintenance is generally corrective in nature and required to keep the natural gas system operating safely and reliably. Activities primarily include: leak evaluation; leak repairs; franchise alterations; compliance maintenance; and miscellaneous main maintenance. |
| Tools Fittings & Materials | Non-RAMP | SCG-04-R GOM-69 to GOM-72 WP 2GD003.005 | SCG-04 MAA-58 to MAA-59 WP 2GD005 | Recorded to this workgroup is the purchase of small tools, small pipe fittings, miscellaneous pipeline materials, and miscellaneous installation materials used during construction and maintenance activities and those held in inventory as vehicle truck stock. These materials are necessary to obtaining complete and safe work results. Included within each category of materials are items such as small tools – screw drivers, wrenches, etc., small pipe fittings – couplings, ells, nipples, etc., miscellaneous pipeline materials – bolts, stakes, pipe straps, traffic vests, etc., and miscellaneous installation materials – cold patch asphalt, pre-mixed concrete, etc. Also recorded to this workgroup are expenses for the rental and laundering of uniforms. |
| Tools Fittings & Materials | PPE and Safety Equipment – Company-wide | SCG-04-R GOM-69 to GOM-72 WP 2GD003.005 | SCG-04 MAA-53 to MAA-58 WP 2GD000 | Recorded to this workgroup is the purchase of small tools, small pipe fittings, miscellaneous pipeline materials, and miscellaneous installation |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------|--|--|---|--|
| | purchases of personal protective equipment (PPE) | | | materials used during construction and maintenance activities and those held in inventory as vehicle truck stock. These materials are necessary to obtaining complete and safe work results. Included within each category of materials are items such as small tools – screw drivers, wrenches, etc., small pipe fittings – couplings, ells, nipples, etc., miscellaneous pipeline materials – bolts, stakes, pipe straps, traffic vests, etc., and miscellaneous installation materials – cold patch asphalt, pre-mixed concrete, etc. Also recorded to this workgroup are expenses for the rental and laundering of uniforms. |
| Cathodic Protection | Gas Facility and Pipeline Inspections | SCG-04-R GOM-45 to GOM-49 WP 2GD003.000 | SCG-04 MAA-49 to MAA-53 WP 2GD008 | Cathodic Protection is one method utilized by SoCalGas to mitigate the external corrosion on buried steel pipelines, without which the steel may corrode by reverting back to its natural state as an iron oxide. Mitigating external corrosion is required to decrease the potential for leaks and reduced useful life of the pipelines. |
| Operations And Management | Policy, Procedures, Standards and ESCMP | SCG-04-R GOM-77 to GOM-81 & SCG-05-R OR-24 to OR-33 WP 2GD004.000 & 2SI001.000 | SCG-05 WR-19 to WR-37 WP 2SI002.000 | Operations Management and Training is a critical component of managing the integrity of the pipeline system to prevent and reduce risks. The activities completed within this workgroup are categorized as Operations Leadership, Field Management, Operations Support and Field Technical Skills Training. This category includes costs for activities, as described, designed to mitigate system reliability risks. |
| Regional Public Affairs | Non-RAMP | SCG-04-R GOM-81 to GOM-87 WP 2GD005.000 | SCG-04 MAA-66 to MAA-72 WP 2GD011 | Regional Public Affairs (RPA) primarily supports field operations through its work with regional and local governments on issues regarding proposed regulations, franchises, permitting, and emergency preparedness and response. RPA also educates officials at the county and city levels about SoCalGas issues that could impact |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|---|
| | | | | customers. RPA further serves as the point of contact in the communities SoCalGas serves, educating stakeholders about SoCalGas activities, programs and services, responding to customer and media inquiries, and resolving customer complaints. |

iii. SoCalGas Gas Distribution Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------------|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|--|-----------------|---|---|-------------------------------------|
| Gas Distribution | | 374,031 | 331,747 | 42,284 | 13% | | | | | | | |
| New Business Construction | Non-RAMP | 57,732 | 42,379 | 15,353 | 36% | 39,651 | | The variety and scope for each new business (customer-driven gas service) makes it infeasible to identify a single imputed authorized unit of measurement. The number and timing of new pipeline projects is based on factors outside the control of SoCalGas. | | Number of new business meters installed | Yes | No |
| New Business - RAMP | MSA Inspections- Customer Service Initial Turn-Ons | 3,318 | 2,210 | 1,108 | 50% | 30,253 | | The variety and scope for each new business (customer-driven gas service) makes it infeasible to identify a single imputed authorized unit of measurement. The number and timing of new pipeline projects is based on factors outside the control of SoCalGas. | | Number of work orders issued | No | No |
| Sub-Total New Business | | 61,050 | 44,589 | 16,461 | 37% | | | | | | Yes | |
| Gas Meters | Non-RAMP | 20,705 | 28,313 | (7,608) | -27% | 90,544 | | This activity involves the purchase, warehouse handling, technical evaluation, and quality assurance associated with procuring new meters for the installation of new service meters or the replacement of existing meters. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | Number of Meters Purchased | Yes | No |
| Gas Regulators | Non-RAMP | 5,834 | 6,650 | (816) | -12% | 90,661 | | This activity involves the purchase of new regulators for the installation of new service or the replacement of an in-service regulator. Because of the different models and types of regulators and the many factors to consider when determining which model to purchase, it is infeasible to identify a single imputed authorized unit of measurement. | | Number of Regulators Purchased | No | No |
| Cathodic Protection - RAMP | Systems are in place to monitor and manage compliance activity schedules | 5,096 | 6,991 | (1,894) | -27% | 41 | | The work associated with this activity supports compliance with 49 CFR Part 192, Subpart I and includes a wide variety of CP related work related to installation and replacement of cathodic protection stations, including applying cathodic protection to existing steel mains and | | Number of installations or replacements - anodes and rectifiers | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|------------------------------------|---|----------------------|---------------------------------|---------------------|-------------|--|--|---------------|-----------------|--|---|-------------------------------------|
| | | | | | | | service lines, additions of new recifiers, shallow well and deep well anode bed replacements, as well as larger surface bed magnesium anode systems. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | |
| Electronic Pressure Monitors (EPM) | Non-RAMP | 272 | 1,054 | (783) | -74% | 124 | 448 | (324) | -72% | EPM Installations/Replacements | No | Yes |
| Remote Meter Reading | Non-RAMP | 0 | 2,250 | (2,250) | -100% | This workpaper consists of Customer Services Field (CSF) labor and non-labor expenses for curb meter replacements as part of the planned meter changes associated with the Advanced Metering Infrastructure (AMI) implementation. Work related to Remote Meter Reading was completed prior to 2021. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | | | Yes | No |
| Pressure Betterment Projects | Non-RAMP | 18,845 | 28,784 | (9,938) | -35% | 56 | This activity includes reinforcement and pressure betterment projects required to remedy low-pressure conditions and/or improve reliability to large single-feed areas. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | Field Completed Projects - Pressure Betterments | Yes | No |
| Main Replacements | Non-RAMP | 24,093 | 36,370 | (12,278) | -34% | 189 | This activity includes replacing main operating pipeline to address deteriorating pipe conditions, risk to the public, and increased maintenance costs. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | Field Completed Projects - Main Replacement | Yes | No |
| Main Replacements - RAMP | Contracting for Traffic Control Delineation materials | 4,169 | 2,473 | 1,696 | 69% | 1,758 | This RAMP activity includes all capital orders that involve contracting for traffic control delineation materials. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | Orders involving contracting for traffic control delineation materials | No | No |
| Sub-Total Main Replacements | | 28,262 | 38,843 | (10,582) | -27% | | | | | | Yes | |
| Main & Service Abandonments | Non-RAMP | 11,898 | 9,279 | 2,619 | 28% | 3,425 | This category includes activities associated with the abandonment of distribution pipeline mains and services. The work includes cutting and capping the pipe to be abandoned at the service-to-main connection. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | Field Completed Projects - Main & Service Abandonment | Yes | No |
| Service Replacements | Non-RAMP | 45,709 | 29,971 | 15,738 | 53% | 4,338 | The timing of service replacement projects is based on a number of factors, including the need for review of operating conditions, detailed planning requirements, acquiring the necessary permits, and coordination and scheduling of resources. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | | | Field Completed Projects - Service Replacements | Yes | No |

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|----------------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| Pipeline Relocations - Freeway | 3,376 | 8,999 | (5,623) | -62% | 7 | | | | Field Completed Projects - Freeway related work | Yes | No |
| Pipeline Relocations - Franchise | 24,398 | 21,133 | 3,265 | 15% | 85 | | | | Field Completed Projects -Franchise related work | No | No |
| Meter Guards | 7,046 | 3,069 | 3,976 | 130% | 12,005 | | | | Meter Guard Installations | Yes | No |
| Regulator Stations | 4,047 | 11,916 | (7,869) | -66% | 23 | | | | Orders | Yes | No |
| Regulator Stations - RAMP | 61 | 156 | (95) | -61% | 0 | | | | Orders | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|--|--|-----------------|---|-------------------------------------|
| Regulator Stations - RAMP | Systems are in place to monitor and manage compliance activity schedules related to medium pressure. | 4,184 | 35 | 4,149 | 11719% | 32 | | it infeasible to identify a single imputed authorized unit of measurement. | This RAMP activity complies with 49 CFR 192.739, Subpart M. This activity is tracked by installation, replacement, and repair work orders that are initiated to address the station conditions and public safety needs. The scope of work and corresponding costs associated with each order are project-specific and vary significantly from project to project. The variety of scopes of work and varying dollars associated with each order make it infeasible to identify a single imputed authorized unit of measurement. | Orders | Yes | No |
| Sub-Total Regulator Stations | | 8,292 | 12,107 | (3,815) | -32% | | | | | | Yes | |
| Supply Line Replacements | Non-RAMP | 175 | 3,832 | (3,657) | -95% | 2 | | The activities in this work category are tracked by work orders and include costs to replace high-pressure distribution pipelines (i.e., supply lines). Drivers for these supply line replacement projects include deteriorating pipe conditions, risk to the public, and increased maintenance costs. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | Field Completed Projects - Supply Line Replacement work | Yes | No | |
| Other Distribution Capital Projects | Non-RAMP | 7,218 | 3,862 | 3,356 | 87% | | | This non-RAMP activity is tracked by work orders that are initiated for capital relocations of SoCalGas facilities, not specifically included in franchise agreements or franchise work, and covers a wide variety of work and corresponding costs associated with collectible and non-collectible construction projects (e.g., related to relocation of service lines, MSAs, replacement or alterations of vaults, drips, traps, roads, fences and Excess Flow Valves (EFV)). The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | Yes | No | |
| Other Distribution Capital Projects - RAMP | Systems are in place to monitor and manage compliance activity schedules- Maintenance and Inspection of Medium Pressure Valves | 682 | 9 | 673 | 7518% | 9 | | This RAMP activity complies with 49 CFR Part 192.747. The scope of work and corresponding costs associated with each order is project-specific and varies significantly from project to project (e.g., projects may include the installation, replacement, relocation and/or maintenance of medium-pressure valves). The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Orders | No | No | |
| Other Distribution Capital Projects - RAMP | Valve Maintenance and Installation (Distribution High Pressure) | 352 | 26 | 326 | 1254% | 11 | | This RAMP activity complies with 49 CFR Part 192.747. The scope of work and corresponding costs associated with each order is project-specific and varies significantly from project to project (e.g., projects may include the installation, replacement, relocation and/or maintenance of medium-pressure valves). The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Orders | No | No | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Sub-Total Other Distribution Capital Projects | | 8,252 | 3,897 | 4,355 | 112% | | | | | | Yes | |
| Gas Energy Measurement Systems (GEMS) | Non-RAMP | 668 | 1,470 | (802) | -55% | 697 | 722 | (25) | -3% | GEMS Units Installed | No | No |
| Capital Tools & Equipment | Non-RAMP | 19,870 | 7,196 | 12,673 | 176% | | | | | This activity consists of various capital expenditures associated with the purchase of tools and equipment used by field personnel for the inspection, maintenance, and repair of gas pipeline systems. The range of costs and types of equipment makes it infeasible to identify a single unit of measurement. | Yes | No |
| Capital Tools & Equipment - RAMP | Prevention and Improvements | 844 | 910 | (66) | -7% | 190 | | | | The need for tools and equipment is influenced by the age and condition of the tools, technology, ergonomics, and changes in Company gas standards and procedures, which make it infeasible to identify a single imputed unit. | No | No |
| Capital Tools & Equipment - RAMP | Upgrade Nomex Coveralls & Fresh Equipment | 0 | 413 | (413) | -100% | 0 | | | | This activity involves purchasing clothing (Nomex Coveralls) and equipment (gloves, gas extraction suits, air respirators) utilized by field personnel working in flammable atmosphere environments. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | No | No |
| Capital Tools & Equipment - RAMP | Confined space air monitoring system for field personnel | 2,130 | 272 | 1,858 | 682% | 1,436 | | | | This activity involves the purchase of confined space air monitoring systems for field personnel. | No | No |
| Sub-Total Capital Tools & Equipment | | 22,844 | 8,792 | 14,052 | 160% | | | | | | Yes | |
| Field Capital Support | Non-RAMP | 99,115 | 70,862 | 28,253 | 40% | 707 | | | | This activity consists of a wide variety of work performed by multiple personnel that is associated with the installation of gas distribution capital assets (e.g., project planning, local engineering, clerical support, field dispatch, field management and supervision, and off-production time for support personnel and field crews who install gas distribution capital assets). The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | Yes | No |
| Field Capital Support - RAMP | Med Pressure Company Crew Inspections | 119 | 60 | 59 | 99% | 2471 | | | | FTEs Related to Field Capital Support | No | No |
| Field Capital Support - RAMP | Systems are in place to monitor and manage compliance activity schedules | 1,103 | 95 | 1,008 | 1055% | 8 | | | | This activity includes Field Team Leads and Field Operations Supervisors performing inspections on medium pressure pipeline projects as part of the Company's quality assurance / quality control program using the Field Audit Collection Tool/International Suppliers Network (FACT/ISN) reporting system. The variety of work activities in this category makes it infeasible to identify a single imputed authorized unit of measurement. | No | No |
| | | | | | | | | | | This activity complies with 49 CFR 192 Subpart M and involves work performed to process third party-initiated conflict review and/or right of way issues. The number and scope of projects is varied and dependent on factors outside | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Sub-Total Field Capital Support | | 100,337 | 71,017 | 29,319 | 41% | | | | | | Yes | |
| New Business Construction - Trench Reimbursements | Non-RAMP | 970 | 705 | 266 | 38% | | | | | | No | No |

This workpaper covers the reimbursable costs covered by SoCalGas if the customer provides the trench, which can vary significantly year over year, thus making it infeasible to identify a single unit of measurement.

iv. SoCalGas Gas Distribution Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------------|--------------------------|---|-------------------------------------|---|
| New Business Construction | Non-RAMP | Yes | No | This work activity involves making changes and/or additions to the existing distribution system to connect new residential, commercial and/or industrial customers. The variety and scope of work for each new business is customer-driven and therefore based on factors outside the control of SoCalGas. The variance is attributed to higher than anticipated customer-driven requests and expenditures related to more than anticipated new business projects. |
| Gas Meters | Non-RAMP | Yes | No | This activity involves the purchase, warehouse handling, technical evaluation, and quality assurance associated with procuring new meters for either the installation of new businesses, replacement of existing meters shop survey meters, routine meter change and/or planned meter changes. The variance is attributed to lower than anticipated volume of meters purchased in 2021 due to the lower than anticipated planned meter changes and the reuse of Meter Transmission Units (MTUs) as opposed to purchasing new units. |
| Electronic Pressure Monitors (EPM) | Non-RAMP | No | Yes | The variance is due to equipment and firmware compatibility, temporarily pausing installations of additional EPMs. Once resolved in 2022, SoCalGas plans to install more EPMs throughout the service territory. |
| Remote Meter Reading | Non-RAMP | Yes | No | Planned work was completed prior to 2021 as a part of the planned meter changes associated with the Advanced Metering Infrastructure (AMI) implementation and therefore resulted in no spend in 2021. The CPUC approved a post-test year mechanism for the SoCalGas attrition years, which can result in imputed dollars when a project has been |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------|--------------------------|---|-------------------------------------|--|
| | | | | completed. This is described in further detail in section 2.D above. |
| Pressure Betterment Projects | Non-RAMP | Yes | No | The variance is primarily attributed to delays in large projects due to permits and environmental restrictions. |
| Main Replacements | Non-RAMP | Yes | No | The variance is due to other programs outside of Gas Distribution that address the need for main replacement, as appropriate, under other leak remediation and main replacement. Such programs include the Distribution Integrity Management Plan (DIMP) in Pipeline Integrity for Transmission and Distribution. The variance is also due to construction delays, municipality permitting, project construction start date delays and crew availability, thus dollars were reallocated to other activities within Gas Distribution. |
| Main & Service Abandonments | Non-RAMP | Yes | No | Variance is due to higher than anticipated expenditures from an increase in customer requested abandonments. |
| Service Replacements | Non-RAMP | Yes | No | The variance is due to the higher than anticipated work volume of service replacements mitigating leakage, corrosion, encroachment, and other abnormal operating conditions to maintain system reliability. |
| Pipeline Relocations – Freeway | Non-RAMP | Yes | No | The variance is due to the less than anticipated demand for relocations of pipeline and related facilities from external agencies as well as the timing of work schedule. |
| Meter Guards | Non-RAMP | Yes | No | The Residential Meter Protection Program (RMPP) has had to increase its existing workforce and contractor pool to align with robust goals to reduce our inventory year over year. In addition, higher costs and supplier shortages associated with purchasing bollards have increased materials costs due to supply chain issues related to Covid-19. |
| Regulator Stations | Non-RAMP | Yes | No | The variance for this non-RAMP portion of Regulator Stations is due to the increased expenditure in the RAMP portion of regulator station installations, replacements, and repairs due to condition, discussed in “Regulator Stations – RAMP.” In addition, the non-RAMP activity expenditures consist of regulator station installation due to system demand growth, relocation due to external agency requests, and abandonment. This activity is primarily driven by external factors and was lower than anticipated. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------------|--|---|-------------------------------------|--|
| Regulator Stations – RAMP | Systems are in place to monitor and manage compliance activity schedules related to medium pressure. | Yes | No | The variance is due to the increase of projects related to regulator station installation, replacement, and repair due to condition as proposed in the 2019 GRC. This activity category addresses the regulator station work to further enhance the safety and reliability of the system. The pace of this work is anticipated to increase in 2022 and beyond. |
| Supply Line Replacements | Non-RAMP | Yes | No | The variance is primarily attributable to a large portion of Supply Line replacement work being performed and recorded under other activity categories (e.g., Pipeline Safety Enhancement Program and Pipeline Integrity) and allocation of funds to other higher-priority Distribution Capital projects discussed in “Other Distribution Capital Projects” below. |
| Other Distribution Capital Projects | Non-RAMP | Yes | No | The variance is primarily due to higher than anticipated EFV installations to comply with 49 CFR 192.383 and the temporary resources hired to support this effort. In addition, the capital investments driven by outstanding paving, survey invoice reconciliation efforts, and trailing invoices from various projects contributed to the expenditure. |
| Capital Tools & Equipment | Non-RAMP | Yes | No | The variance is due to higher than anticipated Capital Tools expenditures due to expanded purchases of Remote Methane Leak Detector units, air monitors, and Gas Surveyor. |
| Field Capital Support | Non-RAMP | Yes | No | The variance is due to higher than anticipated expenditures to support the field capital investment activities, including project management, engineering, field dispatch, field management/supervision, and off-production time expenditures. |

SoCalGas Gas Distribution Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------|--------------------------|---|---------------------------------------|---|
| New Business Construction | Non-RAMP | SCG-04-R GOM-93 to GOM-96 WP 1510 | SCG-04 MAA-78 to MAA-82 WP 1510 | This work category provides for changes and additions to the existing gas distribution system to connect new residential, commercial, and industrial customers. The activities of this category include installation of gas mains and services, meter set |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------------|--------------------------|---|---|---|
| Gas Meters | Non-RAMP | SCG-04-R GOM-126 to GOM-129 WP 1630 | SCG-04 MAA-114 to MAA-117 WP 1630 | assemblies, regulator stations and the associated facilities necessary to provide service to new customers. The expenditures included in the Meters work category are for materials, warehouse handling, technical evaluations, and quality assurance for the purchase of small meters, typical of residential and small business applications, and larger meters, typical of non-residential applications. This category includes costs for activities designed to mitigate system reliability risks. |
| Electronic Pressure Monitors (EPM) | Non-RAMP | SCG-04-R GOM-133 to GOM-134 WP 1810 | SCG-04 MAA-119 to MAA-121 WP 1810 | Electronic Pressure Monitors (EPM) are devices used by SoCalGas to remotely monitor distribution pipeline pressures in support of gas system capacity analysis; and for alarming of over or under-pressure events. Costs discussed here are for the materials purchased, labor cost for warehouse handling, equipment configuration, and associated cost for the field installation and replacement work. |
| Remote Meter Reading | Non-RAMP | SCG-04-R GOM-142 to GOM-144 WP 1820 | N/A | This cost category consists of Customer Services Field (CSF) labor and non-labor expenses for curb meter replacements as part of the planned meter changes associated with the Advanced Metering Infrastructure (AMI) implementation. Beginning in 2013, the AMI project assumed responsibility for above-ground Planned Meter Changes (PMC), including both planned and accelerated meter changes, and CSF shifted its focus to curb meter changes. This trade-off (i.e., the AMI |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------|--------------------------|---|---------------------------------------|--|
| | | | | project team focusing on above-ground meters and CSF focusing on curb meters) enabled a better match between the work and employee skill sets. Over the course of the deployment period, SoCalGas anticipates all GRC and AMI- funded planned meter changes will be completed. |
| Pressure Betterment Projects | Non-RAMP | SCG-04-R GOM-96 to GOM-99 WP 2510 | SCG-04 MAA-82 to MAA-84 WP 2510 | This work category records expenditures for Gas Distribution pressure betterment projects performed on a continuing basis to maintain system reliability and service to customers. This category includes costs for activities designed to mitigate system reliability risks. |
| Main Replacements | Non-RAMP | SCG-04-R GOM-101 to GOM-103 WP 2520 | SCG-04 MAA-84 to MAA-87 WP 2520 | This work category includes expenditures to replace mains operating at 60 psig and below, also referred to as medium-pressure main replacements. This category includes costs for activities designed to mitigate infrastructure integrity risks. |
| Main & Service Abandonments | Non-RAMP | SCG-04-R GOM-106 to GOM-108 WP 2540 | SCG-04 MAA-91 to MAA-93 WP 2540 | This work category includes expenditures associated with the abandonment of distribution pipeline mains and services without the installation of new pipeline to replace the old. Abandonment of mains and services are planned when the abandonment of the pipeline is anticipated not to cause a negative effect on the distribution system, otherwise, a replacement plan will be pursued. Mains are retired from service by stopping the flow of gas into the section of pipe to be abandoned. This is typically accomplished with pressure control fittings installed on both ends of the section of pipe to isolate from gas |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------|--------------------------|---|---|---|
| | | | | flow. Abandonment of service lines is accomplished by cutting and capping at the service-to-main connection. |
| Service Replacements | Non-RAMP | SCG-04-R GOM-103 to GOM-105 WP 2560 | SCG-04 MAA-87 to GOM-91 WP 2560 | Service replacements represented in this category include expenditures specific to the replacement of isolated distribution service pipelines to maintain system reliability and to safely deliver gas to the customer, thus mitigating the risks associated with loss of service and public safety. Services are replaced by two construction methods, "insertion" and "direct bury." With the insertion method, a new plastic replacement service pipe is inserted into the to-be abandoned steel service pipe such that the steel service becomes casing for the plastic pipe. The direct bury technique specifies to the construction crews that the installation of new pipe does not need casing, and any appropriate installation method can be utilized, such as boring or open trench. |
| Pipeline Relocations – Freeway | Non-RAMP | SCG-04-R GOM-116 to GOM-118 WP 2610 | SCG-04 MAA-103 to MAA-105 WP 2610 | The work in the Pipeline Relocations – Freeway category includes expenditures associated with relocating or altering SoCalGas facilities in response to external requests, as specified under the provisions of utility agreements with state and local agencies. This category includes costs for activities designed to mitigate public safety risks. |
| Meter Guards | Non-RAMP | SCG-04-R GOM-123 to GOM-125 WP 2640 | SCG-04 MAA-108 to MAA-110 WP 2640 | Meter guards consist of pipeline compatible materials with sufficient structural integrity to guard against damage to meter set assemblies. Posts installed into the |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------------|--|--|---|--|
| | | | | ground with welded cross braces, usually made of steel pipe, are fabricated and installed by SoCalGas field crews and contractors. |
| Regulator Stations | Non-RAMP | SCG-04-R GOM-109 to GOM-112 WP 2650 | SCG-04 MAA-93 to MAA-97 WP 2650 | Represented in this work category are expenditures for the upgrade, repair, and abandonment of regulator stations. This category includes costs for activities designed to mitigate infrastructure integrity risks. |
| Regulator Stations – RAMP | Systems are in place to monitor and manage compliance activity schedules related to medium pressure. | SCG-04-R GOM-109 to GOM-112 WP 2650 | SCG-04 MAA-93 to MAA-97 WP 2650 | Represented in this work category are expenditures for the installation, the replacement, and the relocation of regulator stations. This category includes costs for activities designed to mitigate infrastructure integrity risks. |
| Supply Line Replacements | Non-RAMP | SCG-04-R GOM-99 to GOM-100 WP 2670 | SCG-04 MAA-84 to MAA-87 WP 2520 | The Supply Line Replacements work category includes expenditures to replace high-pressure distribution pipelines, referred to as “supply lines” at SoCalGas. This category includes costs for activities designed to mitigate infrastructure integrity risks. |
| Other Distribution Capital Projects | Non-RAMP | SCG-04-R GOM-121 to GOM-123 WP 2700 | SCG-04 MAA-110 to MAA-114 WP 2700 | The Other Distribution Capital Projects work category covers construction projects not covered under franchise agreements, not related to freeway work, and not covered in other capital workpaper categories. This category includes costs for activities designed to mitigate public safety risks. |
| Capital Tools & Equipment | Non-RAMP | SCG-04-R GOM-134 to GOM-138 WP 725 & 906 | SCG-04 MAA-123 to MAA-125 WP 725 | The Capital Tools work category includes capital expenditures associated with the purchase of tools and equipment used by Gas Distribution field personnel for the inspection, maintenance, and repair of gas pipeline systems. This category |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|---|---|--|
| Field Capital Support | Non-RAMP | SCG-04-R GOM-138 to GOM-142 WP 9030 | SCG-04 MAA-123 to MAA-125 WP 9030 | includes costs for activities designed to mitigate employee safety risks. Traditional work elements recorded to this workpaper category include project planning, local engineering, clerical support, field dispatch, field management and supervision, and off-production time for support personnel and field crews who install the Gas Distribution capital assets. |

B. SoCalGas Gas Control & System Operations

i. SoCalGas Gas Control & System Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Control & System Operations – Planning | | 9,188 | 10,164 | (976) | -10% | | | | | | | |
| Energy Markets & Capacity Products – Director | Non-RAMP | 0 | 357 | (357) | -100% | 0 | 2 | (2) | -100% | FTE | No | Yes |
| Energy Markets & Capacity Products – Support | Non-RAMP | 686 | 701 | (15) | -2% | 5 | 6 | (1) | -17% | FTE | No | No |
| Energy Markets & Capacity Products – Manager | Non-RAMP | 906 | 697 | 209 | 30% | 6 | 6 | 0 | 0% | FTE | No | No |
| Gas Scheduling | Non-RAMP | 796 | 820 | (24) | -3% | 7 | 7 | 0 | 0% | FTE | No | No |
| Gas Control & SCADA Operation Group – USS | Non-RAMP | 0 | 14 | (14) | -100% | | | | | | No | No |
| Gas Control & SCADA Operation Group – USS | Fatigue Management | 873 | 487 | 386 | 79% | | | | | | No | No |
| Gas Control & SCADA Operation Group – USS | Operation | 0 | 2 | (2) | -100% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Control & SCADA Operation Group – USS | Gas Control Operation | 2,109 | 1,830 | 279 | 15% | | | | | | No | No |
| Gas Control & SCADA Operation Group – USS | SCADA Operation | 1,186 | 1,089 | 97 | 9% | | | | | | No | No |
| Sub-Total Gas Control & SCADA Operation Group – USS | | 4,168 | 3,422 | 746 | 22% | | | | | | No | |
| Gas Transmission Planning | Non-RAMP | 861 | 783 | 77 | 10% | 7 | 6 | 1 | 17% | FTE | No | No |
| Storage Products Manager | Non-RAMP | 250 | 179 | 71 | 40% | 1 | 1 | 0 | 0% | FTE | No | No |
| Emergency Services | Non-RAMP | 225 | 134 | 91 | 68% | 1 | 1 | 0 | -100% | FTE | No | No |
| Emergency Services | Safety, Wellness and Emergency Services Support | 1,296 | 3,070 | (1,774) | -58% | 10 | 19 | (9) | -46% | FTE | Yes | Yes |
| Sub-Total Emergency Services | | 1,521 | 3,204 | (1,683) | -53% | | | | | | Yes | |

SoCalGas Gas Control & System Operations O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|---|---|-------------------------------------|---|
| Energy Markets & Capacity Products – Director | Non-RAMP | No | Yes | During TY2019 GRC, Gas Scheduling and Energy Markets Departments reported to the same Director. When the Departments were separated, the Energy Markets Department reported directly to a Senior VP with no inline Director. The Gas Scheduling Department was moved to the Director of Gas Control & System Planning |
| Emergency Services | Safety, Wellness and Emergency Services Support | Yes | Yes | Units: SoCalGas has since reorganized personnel in Emergency Services to align resources with strategic priorities such as the Safety Management Systems organization that is partially recorded to the Gas Operations Training and Development workpaper in Gas |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|---|
| | | | | <p>Systems Integrity.</p> <p>Costs: Resources were shifted to support and manage the development and enhancement of new and existing health and safety policies, procedures and protocols company-wide. Additionally, SoCalGas reorganized Emergency Services to align resources with strategic priorities such as the Safety Management Systems organization that is partially recorded to the Gas Operations Training and Development workpaper in Gas Systems Integrity. Although SoCalGas was able to conduct the planned System-wide Emergency Exercises during the Pandemic in 2021, due to COVID-19 restrictions, this activity was limited to virtual environment participation instead of in-person participation. This action significantly reduced the overall cost for this activity.</p> |

ii. SoCalGas Gas Control & System Operations O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|---------------------------------------|--------------------------------|--|
| Energy Markets & Capacity Products – Director | Non-RAMP | SCG-13 DKZ-18 WP 2200-00246.000 | SCG-16 BCP-34 2IN004.000 | Energy Markets & Capacity Products’ shared service elements include both direct customer service and staff support. Specific groups in this area include Capacity Products Support and Capacity Products – Manager. These shared services provide capacity services for gas marketers that serve both SoCalGas and SDG&E customers, large nonresidential customers who choose to act as their own gas supplier, and core aggregators. The group also: manages business relationships with upstream pipelines that serve the SoCalGas and SDG&E systems; provides analytical and regulatory compliance support for Backbone |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|---|---|---|--|
| Emergency Services | Safety, Wellness and Emergency Services Support | SCG-13 DKZ-3 & DKZ-15 to DKZ-16 WP 2GS001.000 | SCG-13 NNM-54 to NMN-59 WP 2SM001.000 | Transportation Service, unbundled storage and Hub transactions; and represents SoCalGas in the development and modification of gas industry standards for gas scheduling. The SoCalGas Emergency Services department's main objective is to support SoCalGas's goals of maintaining comprehensive and coordinated emergency response and recovery programs to comply with applicable state and federal requirements. The department consists of four key groups (Core Emergency Operations Center Operations, Emergency Services Enhancement Program, Enterprise Planning/Tech Advancement/Training Program, and Regulatory Compliance/Stakeholder Outreach/Development Program). |

iii. SoCalGas Gas Control & System Operations Capital Variances

The Gas Control & System Operations witness did not sponsor any capital costs in the TY 2019 GRC.

C. SoCalGas Gas Engineering

i. SoCalGas Gas Engineering Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-------------------------------|---|-------------------------------------|
| Gas Engineering | | 28,191 | 32,698 | (4,507) | -14% | | | | | | | |
| Dir Eng & Tech Services | Non-RAMP | 691 | 574 | 117 | 20% | | | | | | No | No |
| Dir Eng & Tech Services | Information Management Systems | 288 | 342 | (54) | -16% | 2 | 2 | 0 | 0% | Consultant Services Contracts | No | No |
| Sub-Total Dir Eng & Tech Service | | 979 | 916 | 63 | 7% | | | | | | No | |
| MRC Management & Special Projects | Non-RAMP | 449 | 1,017 | (568) | -56% | | | | | | No | No |
| Measurement & Design | Non-RAMP | 715 | 1,319 | (604) | -46% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-------------------------------|---|-------------------------------------|
| Measurement Technologies | Non-RAMP | 1,493 | 1,450 | 43 | 3% | | | | | | No | No |
| Measurement Field Support | Non-RAMP | 741 | 1,416 | (676) | -48% | | | | | | No | No |
| Engineering Design Management Process Engineering & Design | Non-RAMP | 1,212 | 2,107 | (895) | -42% | | | | | | No | No |
| Engineering Design Management Process Engineering & Design | Information Management Systems | 359 | 249 | 110 | 44% | 3 | 3 | 0 | 0% | Consultant Services Contracts | No | No |
| Sub-Total Engineering Design Management Process Engineering & Design | | 1,571 | 2,356 | (785) | -33% | | | | | | No | |
| Pipeline Materials | Non-RAMP | 305 | 450 | (146) | -32% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Mechanical Design | Non-RAMP | 220 | 203 | 17 | 8% | | | | | The activities provided by the Mechanical Design group include the technical expertise needed to develop and implement mechanical engineering strategies and designs related to transmission and storage facilities, including compressor stations, instrument air systems, exhaust systems, pressure vessels, field piping, fire protection systems, and gas processing facilities. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Pipeline Engineering | Non-RAMP | 508 | 761 | (253) | -33% | | | | | Pipeline Engineering establishes engineering gas standards and procedures and material specifications and consists of a variety of activities involving assessments of pipelines for transmission, distribution, and storage fields including pressure testing, surface loadings, span evaluations, piping vibration and ground movement impacts. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Research, Planning & Development | Non-RAMP | 0 | 45 | (45) | -100% | | | | | Research Planning includes activities related to the program management of Environmental Research, and Gas Operations Research, Development and Demonstrations (RD&D) and includes participation in research projects related to environmental research with organizations such as Pipeline Research Council International (PRCI) and in gas operations RD&D projects such as methane detection using an un-manned aerial vehicle drone. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. This work was not cancelled or deferred, it was performed within the Balanced RD&D program. | No | No |
| MRC – Instrumentation Repair and Field Support | Non-RAMP | 746 | 1,501 | (755) | -50% | | | | | MRC Instrumentation Repair and Field Support includes activities that provide calibration of instruments used for: field maintenance of gas facilities; field inspection; and the configuration, programming, testing and repair/assessment of electronic measurement devices used for customer billing. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Engineering Analysis Center - Chemical Lab | Non-RAMP | 2,186 | 2,332 | (146) | -6% | | | | | | No | No |
| MRC Standards | Non-RAMP | 139 | 827 | (688) | -83% | | | | | | No | No |
| High Pressure & Distribution Engineering | Non-RAMP | 1,085 | 1,294 | (209) | -16% | | | | | | No | No |
| Electrical Design | Non-RAMP | 186 | 175 | 11 | 6% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Gas Engineering Analysis Center, NGV and Electrical Field | Non-RAMP | 10,653 | 6,934 | 3,719 | 54% | | | | | The Gas Engineering Analysis Center, Natural Gas Vehicle (NGV) and Electrical Field Maintenance workpaper includes several functional areas that cannot be described as a single unit of measure. These functional areas include: Compressor Services and Air Quality Testing, Materials Quality Management, Manufacturer Specifications (MSPs), Manufacturer Approvals and Audits, Chemical and Environmental Services, Non-Destructive Examination (NDE) Testing and Oversight Program, Materials Laboratory, Welding Procedure Evaluation, Natural Gas Vehicle Field Support and Maintenance, Electrical Maintenance and Applied Technologies. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| Land Services & Right of Way | Non-RAMP | 3,014 | 4,099 | (1,085) | -26% | | | | | Land Services and Right of Way manages and acquires the necessary property rights that allow for the access, construction, operation and maintenance of pipeline infrastructure. This workpaper also includes land lease administration. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| Civil Structural & Hazard Mitigation Engineering | Non-RAMP | 878 | 1,125 | (248) | -22% | | | | | The Civil Structural and Hazard Mitigation Engineering group is responsible for structural engineering design and Geological Hazard Engineering programs, which includes a seismic mitigation program, strain gauge programs, and satellite monitoring programs. This category includes activities, as described designed to mitigate geological hazards and climate change adaptation related risks. | No | No |
| Civil Structural & Hazard Mitigation Engineering | Monitoring of Land Movement & Flood zones | 612 | 1,236 | (624) | -50% | 2 | 3 | (1) | -33% | Flood Analysis Report Satellite Monitoring and Subsidence Monitoring | No | Yes |
| Civil Structural & Hazard Mitigation Engineering | Gas Infrastructure Resilience & Vulnerability Report | 252 | 367 | (115) | -31% | | | | | SoCalGas hires contractors to perform multiple resiliency and vulnerability reports of varying scope throughout the year. Invoices are submitted reflecting phases of these contracts. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Civil Structural & Hazard Mitigation Engineering | Real time monitoring of land movement via stress acting on infrastructure | 5 | 112 | (107) | -96% | | | | | Strain Gauge maintenance projects vary in size and scope. The variety of work activities in this category makes it infeasible to identify a single unit of measure. | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Sub-Total Civil Structural & Hazard Mitigation Engineering | | 1,747 | 2,841 | (1,094) | -39% | | | | | | Yes | |
| Meter Shop & Records | Non-RAMP | 1,456 | 2,761 | (1,305) | -47% | | | | | | Yes | No |
| This activity involves refurbishing, repairing and maintaining a variety of meter types. The variety of work makes it infeasible to identify an imputed unit. The 2021 Actual Dollars are associated with 14 FTEs. | | | | | | | | | | | | |

SoCalGas Gas Engineering O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|---|---|-------------------------------------|---|
| Gas Engineering Analysis Center, NGV and Electrical Field | Non-RAMP | Yes | No | The variance is attributed to higher than forecasted O&M activities related to the expansion of program areas in Material Quality Management, Non-Destructive Examination, and Hydrogen Blending. |
| Land Services & Right of Way | Non-RAMP | Yes | No | The variance is attributed to lower than forecasted increase of Right of Way lease payments required to manage necessary land rights. |
| Civil Structural & Hazard Mitigation Engineering | Monitoring of Land Movement & Flood zones | No | Yes | The variance is due to flood work analysis that was not completed due to a delay in obtaining permits. Activities are expected to be completed within the TY 2019 GRC cycle. |
| Sub-Total Civil Structural & Hazard Mitigation Engineering | | Yes | | The variance is due to incomplete projects such as flood work analysis investigations and seismic report activities that are expected to be completed within the TY 2019 GRC cycle. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|--|
| Meter Shop & Records | Non-RAMP | Yes | No | The variance is attributable to a higher proportion of capital meter refurbishment work than forecasted which resulted in lower O&M spend. |

ii. SoCalGas Gas Engineering O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|---|--|---|
| Gas Engineering Analysis Center, NGV and Electrical Field | Non-RAMP | SCG-09 DRH-12 to DRH-14 WP 2EN000.000 | SCG-07 MTM-v, MTM-8, MTM-9 to MTM-11; WP 2EN000.000 MTM-11 to MTM-13; WP 2EN002.000 MTM-viii, MTM-2, MTM-33 to MTM-35; WP 2200-0300.000 MTM-16 to MTM-18; MTM-20; MTM-27; WP 2EN003.000 | The Gas Engineering Analysis Center, Natural Gas Vehicle (NGV) and Electrical Field Maintenance workpaper includes several functional areas that cannot be described as a single unit of measure. These functional areas include: Compressor Services and Air Quality Testing, Materials Quality Management, Manufacturer Specifications (MSPs), Manufacturer Approvals and Audits, Chemical and Environmental Services, Non-Destructive Examination (NDE) Testing and Oversight Program, Materials Laboratory, Welding Procedure Evaluation, Natural Gas Vehicle Field Support and Maintenance, Electrical Maintenance and Applied Technologies. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. |
| Land Services & Right of Way | Non-RAMP | SCG-09 DRH-15 to DRH-16 WP 2EN001.000 | SCG-07 MTM-vi, MTM-13 to MTM-16 WP 2EN001.000 | Land Services and Right of Way manages and acquires the necessary property rights that allow for the access, construction, operation and maintenance of pipeline infrastructure. This workpaper also includes lease administration and Geographic Analysis and Survey. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|---|--|--|--|
| Civil Structural & Hazard Mitigation Engineering | Monitoring of Land Movement & Flood zones | SCG-9-R DRH-10, DRH-12 to DRH-14 WP 2EN002.000 | SCG-07 MTM-vi to MTM-vii, MTM-30 to MTM-32 WP 2200-0322.000 | The Civil Structural and Hazard Mitigation Engineering group is responsible for structural engineering design and Geological Hazard Mitigation Engineering, civil engineering analysis and structural design which includes activities designed to mitigate geological hazards and climate change adaption related risks |
| Meter Shop & Records | Non-RAMP | SCG-22-R DW-12 to DW-13 WP 2SS002.000 | SCG-07 MTM-11 to MTM-13 WP 2EN002 | Meter Shop & Records supports the field requirements for Meters and Meter Transmission Units (MTUs) such as planned meter changes, high bill investigations, new business, and routine meter changes. The Meter Shop also tests, repairs, and salvages Meters and MTUs previously removed from service. The Meter Records group tracks, reports, and reconciles all activity related to the life cycle of Meters and MTUs. |

iii. SoCalGas Gas Engineering Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Engineering | | 24,860 | 11,362 | 13,498 | 119% | | | | | | | |
| Laboratory Equipment – RAMP | Odorization | 2,723 | 2,872 | (149) | -5% | 48 | | | | Number of Pos | No | No |
| Supervision & Engineering Overhead Pool | Non-RAMP | 19,463 | 4,828 | 14,635 | 303% | | | | | | Yes | No |
| Land Rights & Buildings | Non-RAMP | 2,674 | 3,662 | (987) | -27% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | | | | | | | |

iv. SoCalGas Gas Engineering Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|--|
| Supervision & Engineering Overhead Pool | Non-RAMP | Yes | No | The variance is attributed to an increase in the volume and complexity of projects requiring more oversight and preliminary engineering support including capital costs applied by the PSEP PMO (see PSEP witness area, PSEP PMO-RAMP workpaper variance explanation). |

SoCalGas Gas Engineering Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|-------------------------------|---|--|
| Supervision & Engineering Overhead Pool | Non-RAMP | SCG-09 DRH-40 WP 009080 | SCG-07 MTM-39 to MTM-40 WP 009080 | Provide a pool for overhead charges from the Gas Engineering Supervisors or other employees. The charges get reassigned to the various workpaper categories on a direct basis. Charges reside in this workpaper category temporarily and are reassigned on a monthly basis. Overhead charges stemming from labor spend on capital projects and reassigned to Capital workpaper categories. |

D. SoCalGas Gas Major Projects

i. SoCalGas Gas Major Projects Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| WP Projects | | 3,969 | 4,521 | (552) | -12% | | | | | | | |
| Major Projects Management & Outreach | Non-RAMP | 829 | 2,558 | (1,729) | -68% | 3 | 15 | (12) | -81% | FTE | Yes | Yes |
| Major Projects Management & Outreach | Real-time pressure data and providing remote control to high priority distribution sites. | 479 | 1,593 | (1,114) | -70% | 3 | 10 | (7) | -70% | FTE | Yes | Yes |
| Sub-Total Major Projects Management & Outreach | | 1,308 | 4,151 | (2,843) | -68% | | | | | | Yes | |
| Project & Construction Management | Non-RAMP | 1,679 | 228 | 1,451 | 637% | 14 | 1 | 13 | 1613% | FTE | Yes | Yes |
| Project Controls and Estimating | Non-RAMP | 982 | 142 | 840 | 594% | 7 | 0 | 7 | 1700% | FTE | No | Yes |

SoCalGas Gas Major Projects O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------------|---|---|-------------------------------------|---|
| Major Projects Management & Outreach | Non-RAMP | Yes | Yes | The cost and unit variance in 2021 is due to additional time needed for scoping, engineering, planning, piloting, and implementation of the capital deployment activities for Optical Pipeline Monitoring (Fiber) stations, HCA (High Consequence Area) methane sensors, and operation technology enhancements (Pipeline Information Management System, or PIMS). The O&M maintenance and resource support costs for these activities will start to occur once these assets and technologies are operational in the field and control room. |
| Major Projects Management & Outreach | Real-time pressure data and providing remote control to high priority distribution sites. | Yes | Yes | O&M costs have been minimal in 2021 as a result of additional time needed for scoping, engineering, planning, and piloting of the capital field installations for the first real time monitoring and control regulator stations. O&M costs will continue as more employees are trained into this new classification and when the newly enhanced regulator stations are operational. Gas Control began hiring resources in late 2021. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------------|--------------------------|-----------------------------|---|-------------------------------------|--|
| Project & Construction Management | Non-RAMP | | Yes | Yes | The variance is due to the inclusion of the capital delivery project management functions that were consolidated into this workpaper and caused the staffing level to be higher than authorized. |
| Project Controls and Estimating | Non-RAMP | | No | Yes | The unit variance is due to a re-organization of the project controls, estimating, regulatory, financial performance, and contractor safety functions related to this sub-WP into a capital delivery organization responsible for a large portfolio of projects. The re-organization resulted in a large portfolio of projects that required a higher level of staffing. |

ii. SoCalGas Gas Major Projects O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|---|---|---|---|
| Major Projects Management & Outreach | Non-RAMP | SCG-08-R MAB-11 to MAB-12 WP 2MP001.000 | SCG-06 CHB-34 to CHB-40 WP 2MP001.000 | This workpaper captures the activities and expenses associated with the Vice President of Gas Engineering and Major Projects, Director of Project Management and Construction and Capital Projects Outreach. Activities include the O&M costs of leadership of engineering and project execution as well as the costs of public education regarding capital projects. |
| Major Projects Management & Outreach | Real-time pressure data and providing remote control to high priority distribution sites. | SCG-08-R MAB-11 to MAB-12 WP 2MP001.000 | SCG-04 MAA-33 to MAA-36 WP 2MP001.000 | This workpaper captures the activities and expenses associated with the Vice President of Gas Engineering and Major Projects, Director of Project Management and Construction and Capital Projects Outreach. Activities include the O&M costs of leadership of engineering and project execution as |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------------|--------------------------|---|---|---|
| | | | | well as the costs of public education regarding capital projects. |
| Project & Construction Management | Non-RAMP | SCG-08-R MAB-16 to MAB-17 WP 2MP002.000 | SCG-08 BGK-44 to BGK-46 WP 2PS000.001 | This workpaper captures the activities and O&M expenses associated with the management and execution of projects both regarding pipeline work and facilities work including but not limited to regulator stations, meter stations, compressor stations etc. The cost centers included are Project and Construction Management – Pipeline and Project and Construction Management. |
| Project Controls and Estimating | Non-RAMP | SCG-08-R MAB-17 to MAB-18 WP 2MP003.000 | SCG-08 BGK-44 to BGK-46 WP 2PS000.001 | This workpaper captures the activities and O&M expenses associated with the improvement of project execution efficiency as well as the cost estimation of projects. Additionally, this workpaper covers O&M costs of quality assessment of projects including compliance with governing entities and public safety. |

iii. SoCalGas Gas Major Projects Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Major Projects | | 15,734 | 7,837 | 7,897 | 101% | | | | | | | |
| Distribution Operations Control Center (DOCC) | Non-RAMP | 4,131 | 2,935 | 1,196 | 41% | | | | | | No | No |
| The non-RAMP portion of the workpaper includes several activities including installation of High-Consequence Area (HCA) methane sensors, Optical Pipeline Monitoring (fiber) stations, and Operations Technology enhancements (formerly the Pipeline Information Management System "PIMS") which will deliver several critical technologies to support the Control Center Modernization (CCM, formerly DOCC) field asset deployments and the collection of data from the enhanced Distribution Regulator Stations (DRS), Electronic Pressure Monitors (EPMs), meters, Optical Pipeline Monitoring (OPM) stations, and HCA methane sensors. The technology will help manage and transform the collected field asset data into information that will provide a comprehensive view of the overall gas system for Gas | | | | | | | | | | | | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|--|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Distribution Operations Control Center (DOCC) | Gas Control Operation | 11,603 | 4,902 | 6,701 | 137% | Control. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | Yes | No |
| Sub-Total (DOCC) | | 15,734 | 7,837 | 7,897 | 101% | | | | | | Yes | |

iv. SoCalGas Gas Major Projects Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--------------------------|---|-------------------------------------|---|
| Gas Major Projects | | | | |
| Distribution Operations Control Center (DOCC) | Gas Control Operation | Yes | No | The variance is attributed to activities carried over from 2020 into 2021. Additionally, higher execution costs for planning, engineering, and project management resources for the field deployment activities as well as the installation costs for the enhanced distribution regulator station sites are contributing to the variance. |

SoCalGas Gas Major Projects Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|---|---|---|
| Gas Major Projects | | | | |
| Distribution Operations Control Center (DOCC) | Gas Control Operation | SCG-08-R MAB-19 to MAB-25 WP 00343 | SCG-04 MAA-97 to MAA-99 WP 343.002 | SoCalGas and SDG&E plan to establish a distribution Control Center that is functionally similar and integrated into its existing transmission Gas Control Center operations. Control room functions include ensuring pipeline safety parameters as established by Federal and State agencies, analyzing and responding to abnormal and/or emergency conditions on the pipeline system, coordinating necessary pipeline shutdowns for maintenance and/or emergency measures, and |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|---|
| | | | | WP Activity Description serving as a communication center between various departments conducting maintenance on both the Distribution and Transmission pipeline systems. |

E. SoCalGas Gas System Integrity

i. SoCalGas Gas System Integrity Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|-------------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas System Integrity | | 31,237 | 37,400 | (6,162) | -16% | | | | | | | |
| USS – VP Gas System Integrity | Non-RAMP | 330 | 712 | (383) | -54% | 2 | 4 | (2) | -50% | FTEs | No | Yes |
| Business Process Enterprise System Support (ESS) Implementation and ESS Mobile Solution | Non-RAMP | 1,200 | 217 | 983 | 453% | 2 | 2 | 0 | 0% | FTEs | No | No |
| Business Process Enterprise System Support (ESS) Implementation and ESS Mobile Solution | Information Management System | 1,198 | 125 | 1,073 | 858% | 1 | 1 | 0 | 0% | FTEs | Yes | No |
| Sub-Total Business Process ESS Implementation and ESS Mobile Solution | | 2,398 | 342 | 2,056 | 601% | | | | | | Yes | |
| Applications | Non-RAMP | 84 | 542 | (457) | -84% | 2 | 4 | (2) | -51% | FTEs | No | Yes |
| ESS Production Support | Non-RAMP | 806 | 641 | 165 | 26% | 0 | 2 | (2) | -100% | FTEs | No | Yes |

| WP Activity Description | RAMM Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---------------------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| ESS Production Support | Information Management Systems | 808 | 114 | 694 | 612% | 1 | 3 | (2) | -70% | FTEs | No | Yes |
| Sub-Total ESS Production Support | | 1,614 | 755 | 859 | 114% | | | | | | No | |
| Wrk Mgmt & Databases | Non-RAMP | 1,030 | 1,877 | (847) | -45% | 3 | 12 | (9) | -78% | FTEs | No | Yes |
| Wrk Mgmt & Databases | Operational Compliance and Oversight | 200 | 227 | (27) | -12% | 2 | 2 | 0 | 0% | FTEs | No | No |
| Sub-Total Wrk Mgmt & Databases | | 1,230 | 2,104 | (874) | -42% | | | | | | No | |
| Contract & Maintenance | Non-RAMP | 528 | 633 | (105) | -17% | 0 | 1 | (1) | -100% | FTEs | No | Yes |
| Field Technologies | Non-RAMP | 703 | 471 | 232 | 49% | 6 | 3 | 3 | 100% | FTEs | No | Yes |
| Gas System Integrity Staff & Programs | Non-RAMP | 108 | 362 | (255) | -70% | 1 | 2 | (1) | -55% | FTEs | No | Yes |
| Operator Qualification | Non-RAMP | 1,003 | 1,311 | (309) | -24% | 11 | 11 | (0) | -2% | FTEs | No | No |
| Operator Qualification | Operations | 900 | 900 | 0 | 0% | 7 | 7 | 0 | 0% | FTEs | No | No |
| Sub-Total Operator Qualification | | 1,903 | 2,211 | (309) | -14% | | | | | | No | |
| Pipeline System Construction Policy | Non-RAMP | 0 | 0 | (0) | -100% | 0 | 0 | 0 | | FTEs | No | No |
| Pipeline System Construction Policy | Locate & Mark Activities | 654 | 1,389 | (735) | -53% | 7 | 7 | 0 | 0% | FTEs | No | No |
| Pipeline System Construction Policy | Policy Procedures Standards and ESCMP | 0 | 702 | (702) | -100% | 0 | 7 | (7) | -100% | FTEs | No | Yes |

| WP Activity Description | RAMMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|---------------------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Sub-Total Pipeline System Construction Policy | | 654 | 2,092 | (1,437) | -69% | | | | | | Yes | |
| Quality & Risk | Operational Compliance and Oversight | 535 | 1,376 | (841) | -61% | 5 | 12 | (7) | -58% | FTEs | No | Yes |
| Enterprise Geographic Information System (eGIS) | Non-RAMP | 1,228 | 2,255 | (1,007) | -45% | 12 | 12 | 0 | 3% | FTEs | Yes | No |
| Enterprise Geographic Information System (eGIS) | Operational Compliance and Oversight | 0 | 657 | (657) | -100% | 0 | 1 | 1 | 100% | FTEs | No | Yes |
| Sub-Total Enterprise Geographic Information System (eGIS) | | 1,228 | 2,891 | (1,664) | -58% | | | | | | Yes | |
| Shared Public Awareness Activities | Analysis | 102 | 608 | (506) | -83% | 1 | 2 | (1) | -47% | FTEs | No | Yes |
| Pipeline Safety & Compliance Manager | Non-RAMP | 877 | 967 | (90) | -9% | 8 | 7 | 1 | 14% | FTEs | No | No |
| Pipeline Safety Oversight | Non-RAMP | 627 | 649 | (22) | -3% | 6 | 4 | 2 | 50% | FTEs | No | Yes |
| Records Management – From 2200-2361 | Operational Compliance and Oversight | 0 | 1,869 | (1,869) | -100% | 0 | 15 | (15) | -100% | FTEs | Yes | Yes |
| Records Management – From 2200-2361 | Policy Procedures Standards and ESCMP | 168 | 1,020 | (851) | -83% | 2 | 4 | (2) | -58% | FTEs | No | Yes |
| Sub-Total Records Management – From 2200-2361 | | 168 | 2,888 | (2,720) | -94% | | | | | | Yes | |
| Gas Operations Training & Development | Non-RAMP | 2,192 | 1,447 | 745 | 52% | 11 | 4 | 7 | 175% | FTEs | No | Yes |

| WP Activity Description | RAMM Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|--|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|----|
| Gas Operations Training & Development | Qualifications of Pipeline Personnel – MP | 2,500 | 1,533 | 967 | 63% | 13 | 7 | 6 | 86% | FTEs | No | Yes | |
| Gas Operations Training & Development | Qualifications of Pipeline Personnel – HP | 1,130 | 135 | 995 | 738% | 11 | 1 | 10 | 1000% | FTEs | No | Yes | |
| Gas Operations Training & Development | Expand "Situation City" training props at Pico Rivera campus | 280 | 283 | (3) | -1% | 3 | 3 | 0 | 0% | FTEs | No | No | |
| Gas Operations Training & Development | Employee Skills Training | 2,800 | 1,817 | 983 | 54% | 14 | 7 | 7 | 100% | FTEs | No | Yes | |
| Gas Operations Training & Development | Locate & Mark Activities | 1,150 | 160 | 990 | 620% | 11 | 1 | 10 | 1000% | FTEs | No | Yes | |
| Sub-Total Gas Operations Training & Development | | 10,052 | 5,375 | 4,677 | 87% | | | | | | Yes | | |
| Pipeline Safety & Compliance | Non-RAMP | 0 | 690 | (690) | -100% | 0 | 7 | (7) | -100% | FTEs | No | Yes | |
| Pipeline Safety & Compliance | Operational Compliance and Oversight | 1,195 | 2,617 | (1,422) | -54% | 4 | 23 | (19) | -82% | FTEs | Yes | Yes | |
| Sub-Total Pipeline Safety & Compliance | | 1,195 | 3,307 | (2,112) | -64% | | | | | | Yes | | |
| Public Awareness | Non-RAMP | 0 | 319 | (319) | -100% | No single unit is available for this paperwork due to multiple activities including mailers sent and the number of customers. | | | | | | No | No |
| Public Awareness | Public Awareness | 1,612 | 1,574 | 37 | 2% | No single unit is available for this paperwork due to multiple activities including mailers sent and the number of customers. | | | | | | No | No |
| Sub-Total Public Awareness | | 1,612 | 1,894 | (282) | -15% | | | | | | No | | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Asset Management | Non-RAMP | 3,007 | 2,508 | 498 | 20% | 12 | 20 | (8) | -40% | FTEs | No | Yes |
| Asset Management | Operational Compliance and Oversight | 1,200 | 353 | 847 | 240% | 4 | 4 | 0 | 0% | FTEs | No | No |
| Sub-Total Asset Management | | 4,207 | 2,861 | 1,345 | 47% | | | | | | Yes | |
| Gas Contractor Controls | Contractor Management and Traffic Control | 0 | 4,359 | (4,359) | -100% | 0 | 20 | (20) | -100% | FTEs | Yes | Yes |
| Safety Excellence Management System | Non-RAMP | 279 | 0 | 279 | 100% | 3 | 0 | 3 | 100% | FTEs | No | Yes |
| Damage Prevention Strategies | Non-RAMP | 183 | 0 | 183 | 100% | 2 | 0 | 2 | 100% | FTEs | No | Yes |
| Policy Quality Assurance Cntl Effective | Non-RAMP | 592 | 0 | 592 | 100% | 2 | 0 | 2 | 100% | FTEs | No | Yes |
| Damage Prevention Program Management | Non-RAMP | 29 | 0 | 29 | 100% | 0 | 0 | 0 | 100% | FTEs | No | Yes |

SoCalGas Gas System Integrity O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------|--------------------------|---|-------------------------------------|--|
| USS – VP Gas System Integrity | Non-RAMP | No | Yes | The Company has since reorganized to align resources with strategic priorities. Half of the dollars and units associated with the vice president position previously titled VP of Gas Systems Integrity are now included in the costs for Gas Major Projects – Major Projects Management & Outreach. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|---------------------------------------|---|-------------------------------------|---|
| Business Process Enterprise System Support (ESS) Implementation and ESS Mobile Solution | Information Management System | Yes | No | Higher than forecasted costs due to unanticipated costs for migrating software to the cloud and related software license, consulting, and subscription expenses. |
| Sub-Total Business Process ESS Implementation and ESS Mobile Solution | | Yes | | The accounting rules for software licenses have changed and subscription costs are now accounted for as O&M. SoCalGas has migrated more software to the cloud which, in combination with the change in accounting rules, has increased O&M spend. |
| Applications | Non-RAMP | No | Yes | Contractors and consultants were used for this initiative instead of internal FTEs due to temporary scope of work. |
| ESS Production Support | Non-RAMP | No | Yes | Contractors and consultants were used for this initiative instead of internal FTEs due to temporary scope of work. |
| ESS Production Support | Information Management Systems | No | Yes | Contractors and consultants were used for this initiative instead of internal FTEs due to temporary scope of work. |
| Wrk Mgmt & Databases | Non-RAMP | No | Yes | Contractors and consultants were used for this initiative instead of internal FTEs due to temporary scope of work. |
| Contract & Maintenance | Non-RAMP | No | Yes | Contractors and consultants were used for this initiative instead of internal FTEs due to temporary scope of work. |
| Field Technologies | Non-RAMP | No | Yes | This group expanded beyond its originally proposed work scope to include the procurement of tools and equipment for initiatives to equip field operations employees. The additional FTEs coordinated tools and equipment procured to support incremental Distribution work and updates to the "Hazardous Atmosphere in Excavations" Gas Standard that impacted Customer Service – Field, Gas Distribution, and Gas Transmission. Both initiatives required ordering additional tools and equipment for field employees. |
| Gas System Integrity Staff & Programs | Non-RAMP | No | Yes | The Company has since reorganized to align resources with strategic priorities and Administrative Associate support was provided by a shared Administrative Associate. |
| Pipeline System Construction Policy | Policy Procedures Standards and ESCMP | No | Yes | A portion of the costs and units associated with this workpaper have reorganized into the Damage Prevention Strategies workpaper. Additionally, some Locate and Mark costs are not reflected in this cost center because they are distributed across Gas |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|---|
| | RAMP Mitigation Activity | | | Distribution, Gas Transmission, and Underground Storage organizations. |
| Sub-Total Pipeline System Construction Policy | | Yes | | A portion of the costs and units associated with this cost center (2200-2345) have reorganized into their own cost center (2200-2623). Additionally, some Locate and Mark costs are not included in this cost center because they are distributed across Gas Distribution, Gas Transmission, and Underground Storage organizations. |
| Quality & Risk | Operational Compliance and Oversight | No | Yes | The variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. Additionally, some resources were re-prioritized to support Gas Major Projects. |
| Enterprise Geographic Information System (eGIS) | Non-RAMP | Yes | No | The variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. |
| Enterprise Geographic Information System (eGIS) | Operational Compliance and Oversight | No | Yes | The variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. |
| Sub-Total Enterprise Geographic Information System (eGIS) | Operational Compliance and Oversight | Yes | | The variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. |
| Shared Public Awareness Activities | Analysis | No | Yes | A portion of the costs and units forecasted in this area were recorded to cost centers in Pipeline Integrity for Transmission and Distribution. The Company met the federally mandated Public Awareness program requirements, as prescribed in 49 CFR 192.616. |
| Pipeline Safety Oversight | Non-RAMP | No | Yes | The variance is due to hiring additional resources to investigate incidents, identify lessons learned, and implement continuous improvement opportunities company-wide. |
| Records Management – From 2200-2361 | Operational Compliance and Oversight | Yes | Yes | This area was forecasted to expand to perform enhanced activities, however, this variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. Additionally, some Records Management costs are included in Pipeline Integrity and IT Capital cost categories. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|---|
| Records Management – From 2200-2361 | Policy Procedures Standards and ESCMP | No | Yes | This area was forecasted to expand to perform enhanced activities; however, this variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. Additionally, some Records Management costs are included in Pipeline Integrity and IT Capital cost categories. |
| Sub-Total Records Management – From 2200-2361 | | Yes | | This area was forecasted to expand to perform enhanced activities; however, this variance is caused by the delay in plan development and difficulties in recruiting and onboarding qualified personnel. Additionally, some Records Management costs are included in Gas Distribution, Gas Transmission, Pipeline Integrity, and IT Capital cost categories. |
| Gas Operations Training & Development | Non-RAMP | No | Yes | Increase in demand for training, compounded by COVID-19 social distancing requirements, resulted in the need for additional instructors. |
| Gas Operations Training & Development | Qualifications of Pipeline Personnel – MP | No | Yes | Increase in demand for training, compounded by COVID-19 social distancing requirements, resulted in the need for additional instructors. |
| Gas Operations Training & Development | Qualifications of Pipeline Personnel – HP | No | Yes | Increase in demand for training, compounded by COVID-19 social distancing requirements, resulted in the need for additional instructors. |
| Gas Operations Training & Development | Employee Skills Training | No | Yes | Increase in demand for training, compounded by COVID-19 social distancing requirements, resulted in the need for additional instructors. |
| Gas Operations Training & Development | Locate & Mark Activities | No | Yes | Increase in demand for training, compounded by COVID-19 social distancing requirements, resulted in the need for additional instructors. |
| Sub-Total Gas Operations Training & Development | | Yes | | A significant increase in demand for training of field personnel, compounded by COVID-19 social distancing requirements, resulted in the need for additional instructors, the conversion of portions of training courses into virtual format, and rented trailers to provide additional training capacity. The establishment of a secondary training facility at Bakersfield also resulted in an additional one-time cost increase for tools and supplies and the hiring of additional instructors. |
| Pipeline Safety & Compliance | Non-RAMP | No | Yes | The variance is caused by delays in plan development and difficulties in recruiting and onboarding qualified personnel. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|---|---|-------------------------------------|--|
| Pipeline Safety & Compliance | Operational Compliance and Oversight | Yes | Yes | Costs: A portion of the costs are being captured in the Gas Major Projects category. Units: The variance is caused by delays in plan development and difficulties in recruiting and onboarding qualified personnel. |
| Sub-Total Pipeline Safety & Compliance | Sub-Total Pipeline Safety & Compliance | Yes | | A portion of the costs are being captured in the Gas Major Projects category. |
| Asset Management | Non-RAMP | No | Yes | Contractors and consultants were used to develop and expand the program instead of internal FTEs due to the temporary scope of work. |
| Sub-Total Asset Management | Sub-Total Asset Management | Yes | | SoCalGas experienced unanticipated increases in changes to system requirements and additional necessary system enhancements for our production systems. SoCalGas also expanded functionality of other applications exceeding initial expectations to support business needs. |
| Gas Contractor Controls | Contractor Management and Traffic Control | Yes | Yes | The work forecasted in this paperwork was re-distributed and is managed in Gas Engineering, Gas Distribution, and Gas Major Projects. |
| Safety Excellence Management System | Non-RAMP | No | Yes | This is an emergent activity that was developed after the GRC filing to provide a greater focused concentration in the area of Safety. This includes establishing safety policy, developing, and implementing safety programs and procedures, integrating new/enhanced methods into SoCalGas's safety culture, and guiding short-term and long-term safety performance management. |
| Damage Prevention Strategies | Non-RAMP | No | Yes | This is a new cost center that was created after the GRC filing. This activity was originally included in the Pipeline Systems Construction Policy paperwork. |
| Policy Quality Assurance Cntl Effective | Non-RAMP | No | Yes | This is an emergent activity that was developed after the GRC filing to develop the Gas Standard Effectiveness Program, which is responsible for verifying observations that are conducted on Company operations standards to determine and document the adequacy and effectiveness of procedures. As new regulations continue to be introduced, relevant gas standards, and Company policies need to be updated to remain in compliance with the changes. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------------|--------------------------|---|-------------------------------------|--|
| Damage Prevention Program Management | Non-RAMP | No | Yes | This is an emergent activity that was developed after the GRC filing. Damage Prevention Program Management provides strategic leadership and oversight of the Damage Prevention and Public Awareness programs and leads improvement initiatives. Since the cost center was formed in mid-2021, a full year of labor for the FTE has not yet been recorded. |

ii. SoCalGas Gas System Integrity O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|-------------------------------|--|--|---|
| USS – VP Gas System Integrity | Non-RAMP | SCG-05-R OR-48 WP 2200-0225.000 | SCG-07 MTM-33 to MTM-35 WP 2200-0300.000 | The costs for the Vice President of Gas Engineering and System Integrity include technical and financial support, as well as policy issuance to successfully sustain the operation and provide the vision to maintain the safety and reliability of the gas system. The Vice President’s activities also include the governance, technical, and policy support for Gas Transmission and Gas Distribution support functions at both utilities, in addition to Storage for SoCalGas. |
| Business Process Enterprise System Support (ESS) Implementation and ESS Mobile Solution | Information Management System | SCG-05-R OR-59 to OR-61 WP 2200-0302.000 | SCG-21 TLB/WJE-16 to TLB/WJE-18 WP 2200-0302.000 | The activities associated with this cost center include the labor and expenses associated with implementation of Systems to support Business Processes associated with Material Traceability, Materials Management, and departmental websites development. These expenses include the team lead, one Business Analyst, one project specialist and one Senior Business analyst. Activities managed include: compiling test script inventory for software release cycles; administration; developing business solutions related to materials management software; and developing reports, departmental websites, and other essential data deliverables to meet increased demand for customized information visualization and data analytics. The information provided by this group, along with its related activities, help support the operation and engineering groups to assess probability |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|--|---|---|
| Applications | Non-RAMP | SCG-05-R OR-61 to OR-62 WP 2200-0303.000 | SCG-21 TLB/WJE-16 to TLB/WJE-18 WP 2200-2272.000 | and consequence of asset failure. This information supports the mitigation of safety and reliability risks. The Applications cost center includes expenditures for labor and non-labor expenses to support a broad range of computer programs and systems that are not provided by the Company's Information Technology group. The work included within this cost center is to: manage, develop, and support specialized computer-aided drafting and design for Engineering Applications; manage and support the Gas computer-aided drafting and design and policies; manage and support hardware, file management, and back-end processes; manage help desk tickets and client support calls; manage, develop and maintain the Formal Communications Document Library & Publish Gas Standards; and develop and maintain Gas Operations Internal Websites. Expenditures covered in this cost center accounts for labor and expenses to support computer programs and systems not provided by the Company's Information Technology group. The work included within this cost center is to: manage, develop, and support specialized computer-aided drafting and design for Engineering Applications; manage and support the Gas computer-aided drafting and design and policies; manage and support hardware, file management, and back-end processes; manage help desk tickets and client support calls; manage, develop and maintain the Formal Communications Document Library and publish Gas Standards; and develop and maintain Gas Operations internal websites. |
| ESS Production Support | Non-RAMP | SCG-05-R OR-62 to OR-63 WP 2200-0305.000 | SCG-21 TLB/WJE-20 to TLB/WJE-21 WP 2200-1220.000 | ESS organization maintains and provides support for business applications used by Gas Transmission, Distribution, and Storage organizations for both utilities. These applications are utilized by the organizations in support of meeting regulatory requirements. ESS develops and maintains more than two dozen applications that are used by Gas Transmission and Gas Storage organizations. The group also provides first-level support to users of several enterprise business application users |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|---------------------------------------|---|--|---|
| | | | | <p>that are developed and maintained by the central Information Technology (IT) organization. Users of business applications are supported through phone calls, emails, Help Desk ticketing system, and walkups from 6:00 am to 6:00 pm during weekdays. The team monitors interfaces between applications, resolve program interface issues, publishes client communications (release notes, information bulletins, outage notifications, technical bulletins, interim process bulletins, applications instructions, webcasts, etc.), supports hardware used in the field (mobile devices and peripheral equipment), maintains training environments, and manages systems modifications/change requests including software quality assurance (QA) activities.</p> |
| <p>ESS Production Support</p> | <p>Information Management Systems</p> | <p>SCG-05-R OR-62 to OR-63 WP 2200-0305.000</p> | <p>SCG-21 TLB/WJE-20 to TLB/WJE-21 WP 2200-1220.00</p> | <p>ESS organization maintains and provides support for business applications used by Gas Transmission, Distribution, and Storage organizations for both utilities. These applications are utilized by the organizations in support of meeting regulatory requirements. ESS develops and maintains more than two dozen applications that are used by Gas Transmission and Gas Storage organizations. The group also provides first-level support to users of several enterprise business application users that are developed and maintained by the central Information Technology (IT) organization. Users of business applications are supported through phone calls, emails, Help Desk ticketing system, and walkups from 6:00 am to 6:00 pm during weekdays. The team monitors interfaces between applications, resolve program interface issues, publishes client communications (release notes, information bulletins, outage notifications, technical bulletins, interim process bulletins, applications instructions, webcasts, etc.), supports hardware used in the field (mobile devices and peripheral equipment), maintains training environments, and manages systems modifications/change requests including software quality assurance (QA) activities.</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|--------------------------|--|---|--|
| Wrk Mgmt & Databases | Non-RAMP | SCG-05-R OR-63 to OR-64 WP 2200-0306.000 | SCG-21 TLB/WJE-16 to TLB/WJE-18 WP 2200-2494.000 | Activities associated with this cost center include the support of Work Management Systems for Measurement and Regulation (M&R), System Protection Specialists (SPS) and Work Order Tracking (WOT) applications, AutoSol Enterprise System (AES), and the MyProjects enterprise system. This cost center also supports the SDG&E Gas Technical Services Group in Miramar; specifically, the Electronic Data Management System (EDMS) and the Cathodic Protection Data Management (CPDM) applications. These systems are key operational systems to support field functions to verify pipeline and ancillary facilities continue to be fit for service. |
| Contract & Maintenance | Non-RAMP | SCG-05-R OR-64 WP 2200-0308.000 | SCG-21 TLB/WJE-18 to TLB/WJE-20 WP 2200-2453.000 | This cost center accounts for the labor and non-labor expenses associated with software licenses and maintenance contracts for System & Technology Energy Infrastructure. System & Technology Energy Infrastructure manages, administers, and maintains hardware, software, and back-end processes that support the systems and applications of various organizations at SoCalGas and SDG&E, including Gas Distribution, Gas Major Projects, Gas Transmission, Storage and Gas Engineering. |
| Field Technologies | Non-RAMP | SCG-05-R OR-48 to OR-49 WP 2200-2023.000 | SCG-05 WR-56 to WR-57 WP 2200-2023.000 | Recorded to this cost center are the labor, employee expense, and non-labor materials and services required to research and evaluate new tools and technology that enhance or replace existing processes or tools and provide benefits in the form of improved safety. This team helps mitigate risks associated with potential failure of field technologies or the use of obsolete equipment. Field Technologies supports Field Operations by conducting tool and equipment instruction and training to help clients become proficient in the use of new and existing tools and equipment. |
| Gas System Integrity Staff & Programs | Non-RAMP | SCG-05-R OR-49 to OR-50 WP 2200-2144.000 | SCG-05 WR-49 to WR-50 WP 2200-2144.000 | This cost center includes the salaries for the Gas System Integrity Staff & Programs Director and the Administrative Associate who support this organization. This cost center also includes the associated employee |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|---------------------------------------|---|--|--|
| Pipeline System Construction Policy | Policy Procedures Standards and ESCMP | SCG-05-R OR-56 to OR-59 WP 2200-2345.0000 | SCG-05 WR-57 to WR-58 WP 2200-2345.000 | expenses, as well as miscellaneous supplies and materials. Pipeline Systems Construction Policy focuses on the safe construction of high and medium pressure pipelines and associated systems. This category includes development and maintenance of medium and high pressure construction policies and practices in accordance with applicable specifications, requirements and regulations. |
| Quality & Risk | Operational Compliance and Oversight | SCG-05-R OR-54 to OR-55 WP 2200-2360.000 | SCG-27 NNM-36 to NNM-42 WP 2SM002.000 | The Quality and Risk group performs quality assurance and quality control activities for various pipeline safety and compliance activities on gas utility assets. The group provides objective assessments and thorough analyses resulting in recommendations and process improvements. Additionally, the group provides process improvement oversight to enhance discipline in process improvement activities with an emphasis on the implementation tracking, effectiveness evaluation, and review of business control tracking related to the enhancement. The Quality and Risk group seeks to not only support the organization to meet regulatory requirements, but also proactively use tools and processes to enhance system safety and reliability through the implementation of continuous improvement across the business units. |
| Enterprise Geographic Information System (eGIS) | Non-RAMP | SCG-05-R OR-65 to OR-66 WP 2200-2376.000 | SCG-21 TLB/WJE-12 to TLB/WJE-13 WP 2IT001.000 | The need to gather and harmonize the disparate data sets is being addressed by the synchronization of the GIS system. The high-pressure pipe (maximum operating pressure greater than 60 psi), medium pressure pipe (maximum operating pressure less than or equal to 60 psi), storage field pipe and other above-ground facility pipes exist across multiple GIS and computer aided drafting and design databases and software platforms. This category includes costs for activities, as described, designed to mitigate system reliability risks. |
| Enterprise Geographic Information System (eGIS) | Operational Compliance and Oversight | SCG-05-R OR-65 to OR-66 WP 2200-2376.000 | SCG-21 TLB/WJE-12 to TLB/WJE-13 WP 2IT001.000 | The need to gather and harmonize the disparate data sets is being addressed by the synchronization of the GIS system. The high-pressure pipe (maximum operating pressure greater than 60 psi), medium pressure pipe |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|---------------------------------------|--|--|--|
| | | | | (maximum operating pressure less than or equal to 60 psi), storage field pipe and other above-ground facility pipes exist across multiple GIS and computer aided drafting and design databases and software platforms. This category includes costs for activities, as described, designed to mitigate system reliability risks. |
| Shared Public Awareness Activities | Analysis | SCG-05-R OR-55 to OR-56 WP 2200-2417.000 | SCG-05 WR-58 to WR-61 WP 2200-2417.000 | The activities associated with the shared service component of Public Awareness include the central management of both SoCalGas and SDG&E's Public Awareness plans. This co-operator approach offers some resource efficiencies by leveraging the knowledge to the benefit of both companies. As noted in the non-shared service discussion, the Public Awareness work group is focused on the mandates from 49 CFR 192.616, which requires the development and implementation of a public awareness program. |
| Pipeline Safety Oversight | Non-RAMP | SCG-05-R OR-50 to OR-51 WP 2200-2551.000 | SCG-27 NNM-72 to NNM-76 WP 2200-2551.000 | The Pipeline Safety Oversight group provides centralized incident evaluation; compliance improvement oversight through monitoring and documenting the progress of corrective actions; and monitoring of compliance with federal and state regulatory requirements. |
| Records Management – From 2200-2361 | Operational Compliance and Oversight | SCG-05-R OR-67 to OR-68 WP 2200-7242.000 | SCG-05 WR-19 to WR-37 WP 2SI002.000 | Records Management provides centralized operational oversight for records management processes in specific operational areas. |
| Records Management – From 2200-2361 | Policy Procedures Standards and ESCMP | SCG-05-R OR-67 to OR-68 WP 2200-7242.000 | SCG-05 WR-19 to WR-37 WP 2SI002.000 | Records Management provides centralized operational oversight for records management processes in specific operational areas. |
| Gas Operations Training & Development | Non-RAMP | SCG-05-R OR-24 to OR-33 WP 2SI001.000 | SCG-05 WR-12 to WR-19 WP 2SI001.000 | Gas Operations Training and Development communicates and reinforces the SoCalGas safety culture and strives to instill a passion for success through participation in employee seminars, ongoing refresher training, and one-on-one employee meetings. Gas Operations Training and Development also consists of Field Technical Skills Training for employees in Gas Transmission, Gas Distribution, and Storage. These trainings and services are necessary for the Company to follow applicable laws, regulations and standards and to help maintain the safety of the workforce and the public. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--|--|--|--|
| | | | | <p>Also, included under Gas Operations Training and Development are activities and associated O&M expenses within the workgroup of Pipeline Maintenance Policy, which conducts a variety of operational services necessary for employees to complete their daily activities. These activities include identifying, developing, implementing, monitoring, and enhancing Company policies, procedures, tariffs, technologies, and/or reports used by Gas Transmission, Gas Distribution, and Storage.</p> |
| <p>Gas Operations Training & Development</p> | <p>Qualifications of Pipeline Personnel – MP</p> | <p>SCG-05-R OR-24 to OR-33 WP 2SI001.000</p> | <p>SCG-05 WR-12 to WR-19 WP 2SI001.000</p> | <p>Gas Operations Training and Development communicates and reinforces the SoCalGas safety culture and strives to instill a passion for success through participation in employee seminars, ongoing refresher training, and one-on-one employee meetings. Gas Operations Training and Development also consists of Field Technical Skills Training for employees in Gas Transmission, Gas Distribution, and Storage. These trainings and services are necessary for the Company to follow applicable laws, regulations and standards and to help maintain the safety of the workforce and the public. Also, included under Gas Operations Training and Development are activities and associated O&M expenses within the workgroup of Pipeline Maintenance Policy, which conducts a variety of operational services necessary for employees to complete their daily activities. These activities include identifying, developing, implementing, monitoring, and enhancing Company policies, procedures, tariffs, technologies, and/or reports used by Gas Transmission, Gas Distribution, and Storage.</p> |
| <p>Gas Operations Training & Development</p> | <p>Qualifications of Pipeline Personnel – HP</p> | <p>SCG-05-R OR-24 to OR-33 WP 2SI001.000</p> | <p>SCG-05 WR-12 to WR-19 WP 2SI001.000</p> | <p>Gas Operations Training and Development communicates and reinforces the SoCalGas safety culture and strives to instill a passion for success through participation in employee seminars, ongoing refresher training, and one-on-one employee meetings. Gas Operations Training and Development also consists of Field Technical Skills Training for employees in Gas</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|-------------------------------------|--|--|--|
| | | | | <p>Transmission, Gas Distribution, and Storage. These trainings and services are necessary for the Company to follow applicable laws, regulations and standards and to help maintain the safety of the workforce and the public. Also, included under Gas Operations Training and Development are activities and associated O&M expenses within the workgroup of Pipeline Maintenance Policy, which conducts a variety of operational services necessary for employees to complete their daily activities. These activities include identifying, developing, implementing, monitoring, and enhancing Company policies, procedures, tariffs, technologies, and/or reports used by Gas Transmission, Gas Distribution, and Storage.</p> |
| <p>Gas Operations Training & Development</p> | <p>Employee Skills Training</p> | <p>SCG-05-R OR-24 to OR-33 WP 2SI001.000</p> | <p>SCG-05 WR-12 to WR-19 WP 2SI001.000</p> | <p>Gas Operations Training and Development communicates and reinforces the SoCalGas safety culture and strives to instill a passion for success through participation in employee seminars, ongoing refresher training, and one-on-one employee meetings. Gas Operations Training and Development also consists of Field Technical Skills Training for employees in Gas Transmission, Gas Distribution, and Storage. These trainings and services are necessary for the Company to follow applicable laws, regulations and standards and to help maintain the safety of the workforce and the public. Also, included under Gas Operations Training and Development are activities and associated O&M expenses within the workgroup of Pipeline Maintenance Policy, which conducts a variety of operational services necessary for employees to complete their daily activities. These activities include identifying, developing, implementing, monitoring, and enhancing Company policies, procedures, tariffs, technologies, and/or reports used by Gas Transmission, Gas Distribution, and Storage.</p> |
| <p>Gas Operations Training & Development</p> | <p>Locate & Mark Activities</p> | <p>SCG-05-R OR-24 to OR-33 WP 2SI001.000</p> | <p>SCG-05 WR-12 to WR-19 WP 2SI001.000</p> | <p>Gas Operations Training and Development communicates and reinforces the SoCalGas safety culture and strives to instill a passion for success through</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------|--------------------------------------|--|--|---|
| | | | | <p>participation in employee seminars, ongoing refresher training, and one-on-one employee meetings. Gas Operations Training and Development also consists of Field Technical Skills Training for employees in Gas Transmission, Gas Distribution, and Storage. These trainings and services are necessary for the Company to follow applicable laws, regulations and standards and to help maintain the safety of the workforce and the public. Also, included under Gas Operations Training and Development are activities and associated O&M expenses within the workgroup of Pipeline Maintenance Policy, which conducts a variety of operational services necessary for employees to complete their daily activities. These activities include identifying, developing, implementing, monitoring, and enhancing Company policies, procedures, tariffs, technologies, and/or reports used by Gas Transmission, Gas Distribution, and Storage.</p> |
| Pipeline Safety & Compliance | Non-RAMP | <p>SCG-05-R OR-34 to OR-37 WP 2SI002.000</p> | <p>SCG-27 NNM-21 to NNM-24 WP 2SM000.000</p> | <p>Pipeline Safety and Compliance (PS&C) is responsible for supporting the Company to meet and exceed compliance in regulatory and safety regulations. PS&C oversees a robust compliance system that demonstrates SoCalGas' commitment to pipeline safety and shapes essential enhancements for our employees, processes, and technologies. PS&C consists of multiple interconnected departments and cost centers including: Pipeline Safety & Compliance Director; Pipeline Safety and Compliance Group; Major Projects Regulatory Compliance and Controls; Pipeline Safety and Oversight; Operator Qualification; and Quality and Risk.</p> |
| Pipeline Safety & Compliance | Operational Compliance and Oversight | <p>SCG-05-R OR-34 to OR-37 WP 2SI002.000</p> | <p>SCG-27 NNM-21 to NNM-24 WP 2SM000.000</p> | <p>Pipeline Safety and Compliance (PS&C) is responsible for supporting the Company to meet and exceed compliance in regulatory and safety regulations. PS&C oversees a robust compliance system that demonstrates SoCalGas' commitment to pipeline safety and shapes essential enhancements for our employees, processes, and technologies. PS&C consists of multiple interconnected departments and cost centers including: Pipeline Safety &</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|---|---|--|---|
| | | | | Compliance Director; Pipeline Safety and Compliance Group; Major Projects Regulatory Compliance and Controls; Pipeline Safety and Oversight; Operator Qualification; and Quality and Risk. |
| Asset Management | Non-RAMP | SCG-05-R OR-41 to OR-43 WP 2SI004.000 | SCG-21 TLB/WJE-12 to TLB/WJE-13 WP 2IT017.000 | Asset and data management requires computer-based work management systems, document management systems with integration to geographic information systems (GIS), and technical computing management and support. Part of the activity performed in this workgroup is to maintain and upgrade software applications. These application systems and the management of field hardware and mobile applications, as well as supporting activities are necessary for the safe and efficient operation and maintenance of the gas infrastructure from receipt point through the Transmission, Distribution, and Storage pipeline networks, as well as to support Customer Services. This category includes work performed to support computer programs and systems, as well as field hardware and mobile applications not provided by the Company's Information Technology group. |
| Gas Contractor Controls | Contractor Management and Traffic Control | SCG-05-R OR-43 to OR-46 WP 2SI005.000 | SCG-27 NNM-42 to NNM-54 WP 2SM003.000 | Gas Contractor Controls collaborates with Company and industry leaders and subject matter experts to formulate and promote policy related to construction contractor safety and pipeline safety/quality oversight. Activities include: establish, maintain, and expand construction contractor oversight program, including safety (occupational and process), to systematically review, assess, and enhance the management practices related to contractors; provide written guidance on inspection of workmanship on the pipeline; facilitate invoice approval process via online training and invoice submittal system user support; and construction fraud vigilance and training. As prescribed in the Agreement between SoCalGas and Utility Workers Union of America (AFL-CIO) and International Chemical Workers Union Council, SoCalGas must provide semi-annual reports to the union identifying contract employees doing |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|-----------------------------|--|--|
| | | | | <p>represented work (excluding Distribution) and a report of Gas Distribution contract employment showing the ration of Company/contractor employees. Additional activities include: deliver pipeline construction fraud awareness training; author and maintain Company Gas Standards, forms, and workflows related to construction contractor oversight and associated information/records collection, including those related to California Public Utilities Code Section 141 Construction and Safety Standards; and develop Safety Congress presentation/content and facilitate quarterly meetings. Pipeline Safety Management System (PSMS) – Develop and implement a Company-wide PSMS API RP 1173, consistent with PHMSA’s recommendation.</p> |
| <p>Safety Excellence Management System</p> | <p>Non-RAMP</p> | <p>N/A</p> | <p>SCG-27 NNM-25 to NNM-31 WP 2SM004.000</p> | <p>Gas Contractor Controls collaborates with Company and industry leaders and subject matter experts to formulate and promote policy related to construction contractor safety and pipeline safety/quality oversight. Activities include: establish, maintain, and expand construction contractor oversight program, including safety (occupational and process), to systematically review, assess, and enhance the management practices related to contractors; provide written guidance on inspection of workmanship on the pipeline; facilitate invoice approval process via online training and invoice submittal system user support; and construction fraud vigilance and training. As prescribed in the Agreement between SoCalGas and Utility Workers Union of America (AFL-CIO) and International Chemical Workers Union Council, SoCalGas must provide semi-annual reports to the union identifying contract employees doing represented work (excluding Distribution) and a report of Gas Distribution contract employment showing the ration of Company/contractor employees. Additional activities include: deliver pipeline construction fraud awareness training; author and maintain Company Gas Standards, forms, and workflows related to construction contractor oversight and associated information/records collection,</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--------------------------|---|--|--|
| | | | | including those related to California Public Utilities Code Section 141 Construction and Safety Standards; and develop Safety Congress presentation/content and facilitate quarterly meetings. Pipeline Safety Management System (PSMS) – Develop and implement a Company-wide PSMS API RP 1173, consistent with PHMSA’s recommendation. |
| Damage Prevention Strategies | Non-RAMP | SCG-05-R OR-56 to OR-59 WP 2200-2345.0000 | SCG-05 WR-62 to WR-68 WP 2200-2623.000 | Damage Prevention Strategies manages the damage prevention program focusing on preventing excavation damages to SoCalGas’s buried pipelines. Damages resulting from excavation activity are the greatest threat to SoCalGas’s pipeline infrastructure with potential for catastrophic consequences to public safety. SoCalGas is dedicated to mitigating the risk and associated hazards of excavation damages through the expansion of its Damage Prevention program by employing additional resources to proactively identify specific threats to its pipelines. The damage prevention program is mandated by the Code of Federal Regulations 192.614, California Government Code 4216, and California Code of Regulations Title 19 Division 4. The Damage Prevention Analyst Program works to reduce the number of third-party damages to gas facilities by identifying at risk excavating contractors and educating them on proper one-call and safe digging techniques. |
| Policy Quality Assurance Cntl Effective | Non-RAMP | N/A | SCG-05 WR-53 to WR-54 WP 2200-0970.000 | The Gas Standard Effectiveness Program is responsible for verifying observations that are conducted on Company operation standards to determine and document the adequacy and effectiveness of procedures. The staff group focuses on the quality assurance and controls required to effectively conduct observations on work being performed by employees, and documenting the observation and edits required for an adequate and effective procedure. The procedures include operating, maintenance, and emergency response procedures used by field operations in the Gas Distribution, Gas Transmission and Storage, Pipeline Integrity, and Gas Engineering organizations. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|--------------------------|-----------------------------|--|---|
| Damage Prevention Program Management | Non-RAMP | N/A | SCG-05 WR-48 to WR-49 WP 2200-0975.000 | Damage Prevention Program Management provides strategic leadership and oversight of SoCalGas's and SDG&E's Damage Prevention and Public Awareness programs and leads improvement initiatives that enable the utilities to effectively continue to execute efforts that reduce excavation damages and their inherent risks. Damage Prevention Program Management focuses on developing and deploying strategic initiatives aimed at preventing excavation damages. Damages resulting from excavation activity are the greatest threat to SoCalGas and SDG&E's pipeline infrastructure with potential for catastrophic consequences to public safety. SoCalGas and SDG&E are dedicated to mitigating the risk and associated hazards of excavation damages through the expansion of its Damage Prevention program by employing additional resources to proactively identify specific threats to its pipelines. The damage prevention program is mandated by the Code of Federal Regulations 192.614, California Government Code 4216, and California Code of Regulations Title 19 Division 4. |

iii. SoCalGas Gas System Integrity Capital Variances

The Gas System Integrity witness did not sponsor any capital costs in the TY 2019 GRC.

F. SoCalGas Gas Transmission

i. SoCalGas Gas Transmission Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|----------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Transmission | | 39,213 | 34,912 | 4,301 | 12% | | | | | | | |
| Director Gas Transmission – USS | Non-RAMP | 183 | 271 | (89) | -33% | 2 | 2 | 0 | 0% | FTE | No | No |
| Field Operations Managers – USS | Non-RAMP | 376 | 475 | (99) | -21% | 4 | 4 | 0 | 0% | FTE | No | No |
| Technical Services Manager – USS | Non-RAMP | 269 | 404 | (135) | -33% | 3 | 3 | 0 | 0% | FTE | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | | |
|--------------------------------------|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---|-----------------|-----------------|---|-------------------------------------|-----|-----|
| Pipeline Operations | Non-RAMP | 10,480 | 11,320 | (840) | -7% | | | This workpaper is unable to identify a single unit of measure due to the variety of Pipeline Maintenance activities. The activities contained within this workpaper include operating and maintaining equipment at pipeline receipt points, valve control stations, major customer delivery custody-transfer points, and all associated monitoring, metering, and control facilities, odorization equipment, and real-time operating data telemetry communications. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | | |
| Pipeline Operations | Maintenance – Valve, Meters, Pipe, PLS, Regulators, etc. | 7,710 | 4,576 | 3,133 | 68% | | | This workpaper is unable to identify a single unit of measure because there are many Pipeline Maintenance activities which consist of leak surveys, pipeline patrol, valve inspections, meter inspections, vault inspections and bridge & span inspections on transmission pipelines. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No | | |
| Pipeline Operations | Corrosion Control Operation – Cathodic Protection | 850 | 285 | 565 | 198% | | | This workpaper is unable to identify a single unit of measure because there are many Pipeline Maintenance activities which consist of annual electrolysis test station (ETS) reads, bi-monthly current source inspections and annual rectifier maintenance on transmission pipelines. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | | |
| Pipeline Operations | Odorization of Natural Gas | 553 | 114 | 439 | 387% | | | The odorization of the natural gas is required by 49CFR § 192.625. Odorant is added to natural gas as a safety precaution reducing risk that leaks will go undetected and gas will accumulate to hazardous levels. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | | |
| Pipeline Operations | Training and Qualification Of Personnel | 0 | 198 | (198) | -100% | | | Training and Qualification of personnel is a regulatory requirement before an employee can perform any work in that job function. Training and Qualification occur in a different Department (Gas Operations & Development) outside of Gas Transmission. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | | |
| Sub-Total Pipeline Operations | | 19,592 | 16,493 | 3,100 | 19% | | | | | | No | | | |
| Compressor Station Operations | Non-RAMP | 11,236 | 11,351 | (115) | -1% | | | This workpaper is unable to identify a single unit of measure due to the variety of work that takes place in Compressor Station Operation activities. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | No | No | | |
| Technical Services | Non-RAMP | 1,488 | 330 | 1,158 | 351% | | | 2 | 3 | -1 | -33% | FTE | Yes | Yes |
| Technical Services | Class Location (Hydrotest) | 0 | 1,624 | (1,624) | -100% | | | Class location changes are driven by commercial, residential and/or industrial development that occur along transmission pipeline right-of-way. The variety of work in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No | | |
| Technical Services | Engineering, Supervision, Oversight, and Compliance | 1,055 | 1,386 | (331) | -24% | | | 11 | 11 | - | 0% | FTE | No | No |
| Technical Services | ROW – Maintenance & Routine | 5,015 | 1,693 | 3,322 | 196% | | | Right of Way (ROW) work is driven by commercial, residential, and/or industrial development that occur along transmission pipeline rights-of-way. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | Yes | No | | |
| Technical Services | Class Location Mitigation | 0 | 886 | (886) | -100% | | | Class location changes are driven by commercial, residential, and/or industrial development that occur along transmission pipeline rights-of-way. Pipeline segments operating in an area where the class location changes may require remediation. Pipeline segments operating in an area where the class location has changed may require remediation under existing regulations. For example, one form of remediation under the regulations is hydrotesting the existing | | | No | No | No | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|--|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | pipeline to a higher test pressure than it was originally tested to when it was installed. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | |
| Sub-Total Technical Services | | 7,557 | 5,919 | 1,638 | 28% | | | | | | | Yes |

SoCalGas Gas Transmission O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|--|
| Pipeline Operations | Maintenance – Valve, Meters, Pipe, PLS, Regulators, etc. | Yes | No | The variance in 2021 was due to higher than forecasted RAMP activities that included automated valve maintenance, increased need for span painting, and maintenance of increasingly complex pressure limiting station equipment. |
| Technical Services | Non-RAMP | Yes | Yes | The variance in 2021 is due to improvements in the efficiency of the software used to track and start projects. This upgrade allowed more projects to move forward than were previously expected. |
| Technical Services | Class Location (Hydrotest) | Yes | No | The variance is due to the timing of Class Location projects that are expected to be completed within the current GRC cycle. Technical Services completed higher priority routine right of way projects. |
| Technical Services | ROW – Maintenance & Routine | Yes | No | Variance is due to more ROW Projects completed in 2021 than forecasted. Many of the projects completed in 2021 were in environmentally sensitive areas which required greater expenditures per project. |

ii. SoCalGas Gas Transmission O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--|--|-----------------------------------|---|
| Pipeline Operations | Maintenance – Valve, Meters, Pipe, PLS, Regulators, etc. | SCG-06 EAM-9 to EAM-10 WP 2GT000.000 | SCG-06 CHB-17 WP 2GT000.000 | Gas Transmission Pipelines Operations is responsible for the safe day-to-day operation and maintenance of gas transmission pipeline |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|----------------------------|--|--|---|
| Technical Services | Non-RAMP | <p>SCG-06 EAM-16 WP 2GT002.000</p> | <p>SCG-06 CHB-29 WP 2GT003.000</p> | <p>facilities and related infrastructure. This includes, but is not limited to, leak surveys, valve inspections, cathodic protection systems, locate & mark, stand-by, and maintaining equipment at pipeline receipt points that includes odorization equipment and real-time operating data telemetry communication equipment.</p> |
| Technical Services | Class Location (Hydrotest) | <p>SCG-06 EAM-16 WP 2GT002.000</p> | <p>SCG-06 CHB-29 WP 2GT003.000</p> | <p>The Technical Services function includes the activities of engineering, instrumentation, control, project support, and plan file review in support of the day-to-day operations and maintenance of the gas transmission system. Responsibilities include right-of-way maintenance, providing on-site technical expertise to Pipeline and Compression Operations field personnel, and troubleshooting technical issues for both capital and O&M projects.</p> |
| Technical Services | Class Location (Hydrotest) | <p>SCG-06 EAM-16 WP 2GT002.000</p> | <p>SCG-06 CHB-29 WP 2GT003.000</p> | <p>The Technical Services function includes the activities of engineering, instrumentation, control, project support, and plan file review in support of the day-to-day operations and maintenance of the gas transmission system. Responsibilities include right-of-way maintenance, providing on-site technical expertise to</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|-----------------------------|-----------------------------------|-----------------------------------|--|
| | | | | Pipeline and Compression Operations field personnel, and troubleshooting technical issues for both capital and O&M projects. |
| Technical Services | ROW – Maintenance & Routine | SCG-06 EAM-16 WP 2GT002.000 | SCG-06 CHB-29 WP 2GT003.000 | The Technical Services function includes the activities of engineering, instrumentation, control, project support, and plan file review in support of the day-to-day operations and maintenance of the gas transmission system. Responsibilities include right-of-way maintenance, providing on-site technical expertise to Pipeline and Compression Operations field personnel, and troubleshooting technical issues for both capital and O&M projects. |

iii. SoCalGas Gas Transmission Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Transmission | | 257,785 | 118,050 | 139,734 | 118% | | | | | | | |
| Gas Transmission New Pipeline | Non-RAMP | 658 | 5,781 | (5,123) | -89% | | | | | | Yes | No |
| Gas Transmission Relocations | Non-RAMP | 10,741 | 8,696 | 2,044 | 24% | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-----------------------------------|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| | | | | | | | | | | requirements. The scope of work is project-specific and varies significantly from project to project (e.g., pipe size, location, installation method). Accordingly, project costs vary significantly from project to project as well. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The actual costs for this activity in 2021 are associated with 21 projects. | | |
| GT M&R Stations | Non-RAMP | 50,482 | 18,176 | 32,306 | 178% | | | | | The activities tracked within this category are for projects associated with installing and rebuilding meter set assemblies and pressure limiting stations. The scope of work is project-specific and varies significantly from project to project (e.g., station piping, valves, regulators, control and communications equipment, shelters, enclosure, etc.). Accordingly, project costs vary significantly from project to project as well. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The actual costs for this activity in 2021 are associated with 106 projects. | Yes | No |
| GT M&R Stations – RAMP Base | Valve Maintenance and Installation | 22,214 | 0 | 22,214 | 100% | | | | | The activities tracked within this category are for projects associated with valve automation and upgrades / redesign / replacement of valve and pressure regulating stations. The scope of work is project-specific and varies significantly from project to project (e.g., station piping, size, valves, regulators, and control equipment). Accordingly, project costs vary significantly from project to project as well. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The actual costs for this activity in 2021 are associated with 15 projects. | Yes | No |
| Sub-Total M&R Stations | | 72,696 | 18,176 | 54,520 | 300% | | | | | | Yes | |
| GT Auxiliary Equipment | Non-RAMP | 7,446 | 3,670 | 3,776 | 103% | | | | | The activities tracked within this category are for projects associated with the installation of equipment to support transmission system operations that are not assigned to any other workpaper. The scope of work is project-specific and varies significantly from project to project (i.e., installation of telemetric and recording equipment, auxiliary water, electrical, paving, moisture analyzer, pipe supports, methane sensing, etc.) Accordingly, project costs vary significantly from project to project as well. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. The actual costs for this activity in 2021 are associated with 33 projects. | Yes | No |
| GT Auxiliary Equipment – RAMP | Operational Resiliency | 0 | 3,217 | (3,217) | -100% | | | | | The activities tracked within this category are for projects to enhance operational flexibility through the installation of supportive pipeline system capabilities, backup equipment and resources, resumption planning and exercises. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. There were no projects completed in 2021 due to limited studies to identify where additional pipelines would provide needed flexibility to the pipeline system. | Yes | No |
| GT Auxiliary Equipment – RAMP | Physical security measures put in place for the security/safety of | 2,960 | 1,016 | 1,944 | 191% | | | | | The activities tracked within this category are for projects associated with installations of physical security upgrades put in place for the security/safety of people and infrastructure. The scope of work is project-specific and varies significantly from project to project (i.e., security cameras, lighting, gates, locks, and equipment upgrades. | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------------|---|-------------------------------------|
| | RAMP Mitigation employees and infrastructure | | | | | | | | | | | |
| GT Auxiliary Equipment – RAMP | Strain Gauge Installation Projects | 16 | 304 | (288) | -95% | 1 | 1 | 0 | 0% | Strain gauge projects | No | No |
| Sub-Total GT Auxiliary Equipment | | 10,422 | 8,206 | 2,216 | 27% | | | | | | Yes | |
| Gas Transmission Freeway Relocations | Non-RAMP | 25 | 22 | 3 | 15% | | | | | | No | No |
| Gas Transmission Cathodic Protection – RAMP | Requirements for corrosion control | 12,495 | 4,370 | 8,125 | 186% | | | | | | Yes | No |
| GT Compressor Stations (BC 305) | Non-RAMP | 279 | 214 | 66 | 31% | | | | | | No | No |
| GT Replacement Pipelines – RAMP | Gas Transmission | 55,042 | 18,840 | 36,202 | 192% | | | | | | Yes | No |
| GT Compressor Stations (BC 315) | Non-RAMP | 25,429 | 11,440 | 13,989 | 122% | | | | | | Yes | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| GT Compressor Stations (BC 325) | Non-RAMP | 0 | 1,694 | (1,694) | -100% | | | | | The activities tracked within this category are for projects associated with the installation and replacement of compressor station equipment used in operating the transmission system. The scope of work is project-specific and varies significantly from project to project (i.e., engine components and controls). Accordingly, project costs vary significantly from project to project as well. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| MP PL Rpls / Quality/Economic Driven | Non-RAMP | (200) | 0 | (200) | 100% | | | | | The activities tracked within this category are for projects associated with the replacement of pipelines to meet pipeline quality or efficiency objectives. The scope of work is project-specific and varies significantly from project to project (i.e., pipe size, location, installation method, etc.). Accordingly, project costs vary significantly from project to project as well. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| GT Compressor Stations (BC 335) | Non-RAMP | 57,818 | 40,611 | 17,208 | 42% | | | | | The Blythe Compressor Station Modernization project consists of a variety of activities including installation of two new compressors and a compressor building (Plant 4), rebuilding five existing compressors and installing clean burn emission reduction technology (Plant 2), installation of a new operations building, new electric generators, cooling tower apparatus, underground and aboveground pipelines, and other infrastructure. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| Ventura Compressor Station Modernization | Non-RAMP | 12,339 | 0 | 12,339 | 100% | | | | | The Ventura Compressor Station Modernization project consists of a variety of activities including installation of four new reciprocating gas engine-driven compressors, a compressor building, an office and warehouse building, utilities, and associated controls, electrical, instrumentation and emission control equipment. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| Gas Transmission – Software | Non-RAMP | 40 | 0 | 40 | 100% | | | | | The Gas Transmission – Software project consists of a variety of activities related to the Maximo program that is used to manage all Gas Transmission projects. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |

iv. SoCalGas Gas Transmission Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------|--------------------------|---|-------------------------------------|---|
| Gas Transmission New Pipeline | Non-RAMP | Yes | No | Lower than forecasted due to no new customer service requests, which resulted in zero projects for new pipelines in 2021. |
| Gas Transmission Relocations | Non-RAMP | Yes | No | Cost variance is due to execution of continued non-collectible projects from 2019, 2020 and new projects not previously identified. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|------------------------------------|---|-------------------------------------|---|
| GT M&R Stations | Non-RAMP | Yes | No | This cost increase is associated with installing newly automated equipment and security measures to improve system reliability and visibility to gas control. |
| GT M&R Stations – RAMP Base | Valve Maintenance and Installation | Yes | No | Cost variance is due to large non-collectible projects that had in service dates moved to 2021. This cost increase is associated with installing automated equipment and security measures to improve system reliability and visibility to gas control. |
| GT Auxiliary Equipment | Non-RAMP | Yes | No | Higher than expected costs are due to capital non-collectible projects planned to finish in 2020 that were extended into 2021. |
| GT Auxiliary Equipment – RAMP | Operational Resiliency | Yes | No | Cost variance is due to deferred projects. Operational resiliency projects were deferred due to limited studies completed to verify where additional pipelines would provide necessary flexibility to the pipeline system. |
| Gas Transmission Cathodic Protection – RAMP | Requirements for corrosion control | Yes | No | The cost variance is due to emergent projects. These emergent projects were executed due to a more focused effort to address out of tolerance areas and cathodic protection effectiveness. |
| GT Replacement Pipelines – RAMP | Gas Transmission | Yes | No | The cost variance is due to an increase in pipeline leak and exposure projects that address the potential of catastrophic pipeline failure. |
| GT Compressor Stations (BC 315) | Non-RAMP | Yes | No | Variance is due to scope revisions which caused longer construction timeframes for projects. The costs in this category are externally driven by mandated requirements. The variance is related to five major compressor station projects. This work addresses improved system reliability and visibility to Gas Control. One of these projects updates the emissions control system to ensure continuous compliance. |
| GT Compressor Stations (BC 335) | Non-RAMP | Yes | No | The Blythe Compressor Modernization (BCM) project was projected to be in-service by 2020 per the 2019 GRC Rebuttal Testimony. The cost variance is due to construction milestones and in-service date pushing out from 2020 to 2021. Construction schedule extension led to engineering, planning, and construction resources to be |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--------------------------|---|-------------------------------------|---|
| | | | | allocated longer on the project for construction and commissioning support. |
| Ventura Compressor Station Modernization | Non-RAMP | Yes | No | The Ventura Compressor Modernization (VCM) project was projected to be in-service, outside of the 2019 GRC cycle, however the CPUC recognized in Decision (D) 19-09-051 the importance of the proposed project and the role of compressor stations in maintaining operational reliability and safety of the gas transmission system. The CPUC found the planning of the VCM project to be prudent and reasonable. In April/May 2021, SoCalGas hosted a series of community workshops to share information about the planned project. In August 2021, the CPUC requested that SoCalGas prepare a feasibility study of the planned VCM project. SoCalGas hosted a series of Community Town Hall meetings during the week of October 11 th , 2021, to collect community feedback which was used to identify and evaluate the feasibility of potential project alternatives. The costs incurred in 2021 are associated with the robust community outreach, development of the feasibility study and performing front end engineering design activities, all of which relate to the safety and reliability of the compressor station. |

SoCalGas Gas Transmission Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|--------------------------|---|---|---|
| Gas Transmission New Pipeline | Non-RAMP | SCG-07 MAB-9 to MAB-10 WP 00301 | SCG-06 CHB-64 to CHB-65 WP 00301 | The activities in this category are required to provide the backbone and local natural gas transmission system with additional resiliency, capacity, and reliability in order to serve new or increased loads and/or to provide natural gas supply reinforcement to an existing area. |
| Gas Transmission Relocations | Non-RAMP | SCG-07 MAB-13 to MAB-16 WP 00304 | SCG-06 CHB-68 to CHB-71 WP 00304 | Activities in this category are associated with the modification and relocation of transmission pipelines to accommodate planned private property development, municipal public works and street improvement projects, and other work required due to right-of-way agreements, |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|------------------------------------|--|--|---|
| GT M&R Stations | Non-RAMP | SCG-07 MAB-26 to MAB-28 WP 00308 & 00308A | SCG-06 CHB-75 to CHB-76 WP 00308 | contract and franchise requirements. This category includes costs for activities designed to mitigate system reliability risks. Activities in this category include installing and rebuilding large meter set assemblies (MSAs) for transmission-served customers and pressure limiting stations on the gas transmission system. These assets require replacement principally for three reasons: aging, change in use patterns and/or population encroachment, and enhancement of the transmission system to address gas quality and capacity issues. The capital work sustains reliable operation of critical transmission assets. This includes periodic replacement of local field measurement and control equipment directly linking with Gas Operations SCADA system via remote communications. |
| GT M&R Stations – RAMP Base | Valve Maintenance and Installation | SCG-07 MAB-26 to MAB-28 WP 00308 & 00308A | SCG-06 CHB-75 to CHB-76 WP 00308 | Activities in this category include installing and rebuilding large meter set assemblies (MSAs) for transmission-served customers and pressure limiting stations on the gas transmission system. These assets require replacement principally for three reasons: aging, change in use patterns and/or population encroachment, and enhancement of the transmission system to address gas quality and capacity issues. The capital work sustains reliable operation of critical transmission assets. This includes periodic replacement of local field measurement and control equipment directly linking with Gas Operations SCADA system via remote communications. |
| GT Auxiliary Equipment | Non-RAMP | SCG-07 MAB-28 to MAB-29 WP 003090 & 00309A | SCG-06 CHB-77 to CHB-79 WP 003090 | Activities in this category include new installations or upgrades of aging Measurement and Regulation station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of, SoCalGas' centralized Gas Control's SCADA computer system. Also included are telemetry- related upgrades to remote site security systems and remote-control systems for critical in-line valves. |
| GT Auxiliary Equipment – RAMP | Operational Resiliency | SCG-07 MAB-28 to MAB-29 WP 003090 & 00309A | SCG-06 CHB-77 to CHB-79 WP 003090 | Activities in this category include new installations or upgrades of aging Measurement and Regulation station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of, SoCalGas' centralized Gas Control's SCADA computer system. Also included are telemetry- related upgrades to remote site security systems and remote-control systems for critical in-line valves. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|------------------------------------|--|--|---|
| Gas Transmission Cathodic Protection – RAMP | Requirements for corrosion control | SCG-07 MAB-25 to MAB-26 WP 003160 | SCG-06 CHB-73 to CHB-74 WP 003160 | This workpaper includes activities associated with the installation of cathodic protection equipment used to preserve the integrity of transmission pipelines by protecting them from external corrosion. These projects are mandated by Federal and State pipelines safety regulations and enable the maintenance of adequate protection on Company facilities. Typical expenditures include the replacement of surface anode beds, deep well anodes and/or rectifier systems, installation of new cathodic protection stations, and applying cathodic protection to existing steel mains and service lines. |
| GT Replacement Pipelines – RAMP | Gas Transmission | SCG-07 MAB-10 to MAB-13 WP M03120 | SCG-06 CHB-65 to CHB-67 WP 00302 | Activities in this category include the cost to plan, design, permit, acquire materials, construct, commission, and mitigate impacts for the replacement of pipelines, fittings, valves, and associated pressure regulating stations and service lines. Multiple projects are completed each year ranging in size and magnitude from a few feet to several miles of replacement. Projects can involve difficult and hazardous access with many logistical challenges caused by weather or physical terrain. Also included are projects to replace pipelines due to class location changes. |
| GT Compressor Stations (BC 315) | Non-RAMP | SCG-07 MAB-16 to MAB-21 WP M03150 | SCG-06 CHB-71 to CHB-73 WP 00305.002 | Activities in this category include costs associated with the installation and replacement of compressor station equipment used in operating the transmission system. The environmental and regulations associated with the operation of compressor stations requires consistent maintenance and replacement of key engine components and controls equipment to maintain acceptable emissions levels. New air quality regulations require emissions monitoring and reporting equipment along with new catalyst and combustion technology to meet lower emission levels. |
| GT Compressor Stations (BC 335) | Non-RAMP | SCG-07 MAB-16 to MAB-24 WP M0335 | SCG-06 CHB-81 to CHB-82 WP 00335.001 and WP 00335.002 | Activities in this category include the decommission of two compressor stations, Desert Center and Cactus City, and isolation of the station from existing transmission pipelines. SoCalGas will install new gas compression and related ancillary systems at the Blythe Compressor Station. |
| Ventura Compressor Station Modernization | Non-RAMP | SCG-07 MAB-16 to MAB-24 WP M0335 | SCG-06 CHB-98 to CHB-101 | The Ventura Compressor Replacement Project (VCR) will ultimately consist of six compressor trains. Three of these compressor trains will be purchased new, engineered, and installed in a new building on the west side of the station grounds. Each new unit will be engine-driven |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|---|
| | | | | with non-Selective Catalytic Reduction emissions reduction systems with 1680 horsepower each. |

G. SoCalGas Underground Storage

i. SoCalGas Underground Storage Operations O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Underground Storage | | 41,459 | 46,289 | (4,831) | -10% | | | | | | | |
| Underground Storage | Non-RAMP | 30,990 | 34,063 | (3,073) | -9% | | | | | | No | No |
| Underground Storage | Maintenance work performed on gas storage wells | 3,961 | 4,669 | (707) | -15% | | | | | | No | No |
| Underground Storage | Contract Security | 928 | 1,479 | (551) | -37% | | | | | | No | No |
| Underground Storage | Maintenance of high-pressure storage lines | 3,942 | 3,125 | 817 | 26% | 4 | 4 | 0 | 0% | Storage Fields | No | No |
| Underground Storage | Internal Corrosion Plan | 484 | 630 | (146) | -23% | | | | | | No | No |
| | Sub-Total Underground Storage | 40,305 | 43,965 | (3,660) | -8% | | | | | | No | |
| Storage Risk Management | Non-RAMP | 1,154 | 2,325 | (1,171) | -50% | | | | | | Yes | No |

SoCalGas Underground Storage O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|---|
| Storage Risk Management | Non-RAMP | Yes | No | Lower than forecasted expenses due to organizational re-structuring within Aboveground and Underground Storage and Storage Risk Management. |

ii. SoCalGas Underground Storage O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|---|---|---|
| Storage Risk Management | Non-RAMP | SCG-10-R NPN-24 to NPN-25 WP 2US001.000 | SCG-10 LTB SH-13 to LTB SH-17 WP 2US001.000 | The Storage Risk Management Team consists of Facilities Data, Systems and Compliance, along with Storage Integrity Management Program, Underground Data Management, Regulatory and Policy Management. The workpaper covers the labor and nonlabor associated with supporting above ground monitoring, data management, compliance and audit support at the storage fields. The group is organized and resourced to address the implementation requirements of CARB, CalGEM and PHMSA regulations. |

iii. SoCalGas Underground Storage Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---------------------------------|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| Underground Storage | | 187,238 | 106,361 | 80,877 | 76% | | | | | | | |
| GS Compressor Stations | Non-RAMP | 19,741 | 20,265 | (523) | -3% | | | | | This workpaper is comprised of activities associated with compressor station and auxiliary equipment upgrades. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| GS Wells – Cushion Gas Purchase | Non-RAMP | 0 | 577 | (577) | -100% | 0 | 1 | -1 | -100% | Storage Field | No | Yes |
| GS Wells – RAMP Base – C1 | Well replacements | 46,923 | 19,530 | 27,393 | 140% | 4 | 7 | -3 | -43% | Wells | Yes | Yes |
| GS Wells – RAMP Base – C2 | Well plug & abandon | 25,327 | 18,331 | 6,996 | 38% | 11 | 5 | 6 | 120% | Wells | Yes | Yes |
| GS Wells – RAMP Base – C3 | Tubing upsizing | 27 | 977 | (951) | -97% | 0 | 3 | -3 | -100% | Wells | No | Yes |
| GS Wells – RAMP Base – C4 | Well workovers | 7,382 | 4,818 | 2,564 | 53% | 7 | 3 | 4 | 133% | Wells | Yes | Yes |
| GS Wells – RAMP Base – C5 | Wellhead repairs & replacements | 0 | 418 | (418) | -100% | | | | | This workpaper is comprised of wellhead leak detection and repair which entails performing audio-visual inspection as well as optical gas imaging and repairs as needed. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| GS Wells – RAMP Base – C7 | Wells blanket projects | 1,063 | 807 | 256 | 32% | | | | | This workpaper is comprised of well blanket project activities, which include upgrades to gas lift line and kill systems, compressed air system updates, and work string capital tools. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| GS Wells Sub-Total | | 80,721 | 45,457 | 35,264 | 78% | | | | | | Yes | |
| GS Pipelines | Non-RAMP | 33,902 | 6,320 | 27,582 | 436% | | | | | This workpaper is comprised of non-RAMP work such as upgrading or replacing lateral piping and related components including valve replacements, pipe bridge replacement, expansions, upsizing, supports, corrosion protection, and other elements related to piping systems. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| GS Pipelines – RAMP Base | Combat land movement through ground stabilization projects in both Gas Transmission and Gas Storage. | 8,079 | 4,490 | 3,590 | 80% | 1 | 1 | 0 | 0% | Storage Field | Yes | No |
| GS Pipelines Sub-Total | | 41,981 | 10,810 | 31,172 | 288% | | | | | | Yes | |
| GS Purification | Non-RAMP | 6,756 | 8,748 | (1,992) | -23% | | | | | This workpaper is comprised of dehydration and tank farm equipment upgrade work activities, including, but not limited to the installation, replacements and relocations of gas and glycol filters for improved gas conditioning as well as instrumentation upgrades to allow remote monitoring. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| GS Auxiliary Equipment | Non-RAMP | 37,358 | 18,594 | 18,763 | 101% | | | | | This workpaper is comprised of non-RAMP auxiliary equipment work activities including overhead power and electrical system upgrades, relief system redesign, and equipment modernization. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| GS – Aliso Canyon | Erosion mitigation | 135 | 1,079 | (943) | -87% | 1 | 1 | 0 | 0% | Storage Field | No | No |
| GS – Playa Del Rey | Erosion mitigation | 545 | 1,409 | (864) | -61% | 1 | 1 | 0 | 0% | Storage Field | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| GS Auxiliary Equipment | Sub-Total | 38,038 | 21,081 | 16,956 | 80% | | | | | | Yes | |

iv. SoCalGas Underground Storage Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---------------------------------|--|---|-------------------------------------|--|
| GS Wells – Cushion Gas Purchase | Non-RAMP | No | Yes | Lower than forecasted because the Honor Rancho storage reservoir did not require purchased cushion gas to maintain adequate pressure and deliverability rates. |
| GS Wells – RAMP Base – C1 | Well replacements | Yes | Yes | Cost: Spending variance is due to drilling activity that was previously deferred. Drilling activity is now back up. Along with increased activity, the costs for drilling has increased from 2017, when the estimates for 2019 GRC were completed. Units: Number of Wells. Variance is due to accelerated California Energy Management Division (CalGEM) reassessment timeline leading to less availability to do new well replacement. |
| GS Wells – RAMP Base – C2 | Well plug & abandon | Yes | Yes | Higher than forecasted due to CalGEM's new requirement of more frequent assessments, resulting in increased numbers, as well as more complex plug and abandonment activities. |
| GS Wells – RAMP Base – C3 | Tubing upsizing | No | Yes | Lower than forecasted wells due to prior acceleration of work activities; tubing upsizing was primarily completed prior to 2020 as part of well upgrades/workovers. |
| GS Wells – RAMP Base – C4 | Well workovers | Yes | Yes | Higher than forecasted well workovers due to increased compliance activity in accordance with CalGEM's Mechanical Integrity Testing (MIT) and Standard Annual Pressure Testing (SAPT) requirements. Spending variance is associated with the additional wells added to the scope. |
| GS Pipelines | Non-RAMP | Yes | No | Higher than forecasted due to reassessments identifying wellhead changes that necessitated lateral modifications and plug and abandonment work, subsequently requiring increased removal of pipelines. |
| GS Pipelines – RAMP Base | Combat land movement through ground stabilization projects in both Gas Transmission and Gas Storage. | Yes | No | Higher than forecasted due to higher than forecasted activities to address land erosion near station high pressure pipelines. |
| GS Auxiliary Equipment | Non-RAMP | Yes | No | Higher than forecasted costs attributable to prioritization of work activities related to safety, compliance and reliability requirements (i.e., SCAQMD RECLAIM (South Coast |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|---|
| | | | | Air Quality Management District Regional Clean Air Incentives Market) Program equipment upgrades, General Order (GO) 95 wood-to-steel replacements, and electrical upgrades). |

v. SoCalGas Underground Storage Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------|--------------------------|--|--|--|
| GS Wells – Cushion Gas Purchase | Non-RAMP | SCG-10-R NPN-35 to NPN-42 WP 00412 | NA | This workpaper category includes costs associated with replacing failed components on existing wells, and the design, drilling and completion of replacement wells for the injection and withdrawal of natural gas and reservoir observation purposes. This includes well workover contractors (major well work), drilling contractors, and component materials such as tubing, casing, valves, pumps, and other down-hole equipment, and well plugging and abandonment. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and enhance the integrity, efficiency, and responsiveness of operations while maintaining compliance with applicable regulatory and environmental regulations. |
| GS Wells – RAMP Base – C1 | Well replacements | SCG-10-R NPN-35 to NPN-42 WP 00412 | SCG-10 LTB SH-25 to LTB SH-28 WP 00412 | This workpaper category includes costs associated with replacing failed components on existing wells, and the design, drilling and completion of replacement wells for the injection and withdrawal of natural gas and reservoir observation purposes. This includes well workover contractors (major well work), drilling contractors, and component materials such as tubing, casing, valves, pumps, and other down-hole equipment, and well plugging and abandonment. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and enhance the integrity, efficiency, and responsiveness of operations while maintaining compliance with applicable regulatory and environmental regulations. |
| GS Wells – RAMP Base – C2 | Well plug & abandon | SCG-10-R NPN-35 to NPN-42 WP 00412 | SCG-10 LTB SH-25 to LTB SH-28 WP 00412 | This workpaper category includes costs associated with replacing failed components on existing wells, and the design, drilling and completion of replacement wells for the injection and withdrawal of natural gas and reservoir observation purposes. This includes well workover contractors (major well work), drilling contractors, and component materials such as tubing, casing, valves, pumps, and other down-hole equipment, and well plugging and abandonment. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and enhance the integrity, efficiency, and responsiveness of operations |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------|--|--|---|--|
| GS Wells – RAMP Base – C3 | Tubing upsizing | SCG-10-R NPN-35 to NPN-42 WP 00412 | SCG-10 LTB SH-25 to LTB SH-28 WP 00412 | while maintaining compliance with applicable regulatory and environmental regulations. This workpaper category includes costs associated with replacing failed components on existing wells, and the design, drilling and completion of replacement wells for the injection and withdrawal of natural gas and reservoir observation purposes. This includes well workover contractors (major well work), drilling contractors, and component materials such as tubing, casing, valves, pumps, and other down-hole equipment, and well plugging and abandonment. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and enhance the integrity, efficiency, and responsiveness of operations while maintaining compliance with applicable regulatory and environmental regulations. |
| GS Wells – RAMP Base – C4 | Well workovers | SCG-10-R NPN-35 to NPN-42 WP 00412 | SCG-10 LTB SH-25 to LTB SH-28 WP 00412 | This workpaper category includes costs associated with replacing failed components on existing wells, and the design, drilling and completion of replacement wells for the injection and withdrawal of natural gas and reservoir observation purposes. This includes well workover contractors (major well work), drilling contractors, and component materials such as tubing, casing, valves, pumps, and other down-hole equipment, and well plugging and abandonment. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and enhance the integrity, efficiency, and responsiveness of operations while maintaining compliance with applicable regulatory and environmental regulations. |
| GS Pipelines | Non-RAMP | SCG-10-R NPN-42 to NPN-44 WP 00413 | SCG-10 LTB SH-28 to LTB SH-29 WP 00413 | This workpaper category includes costs associated with upgrading or replacing failed field piping and related components. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and also enhance the integrity, efficiency, and responsiveness of operations while maintaining compliance with applicable regulatory and environmental regulations. |
| GS Pipelines – RAMP Base | Combat land movement through ground stabilization projects in both Gas Transmission and Gas Storage. | SCG-10-R NPN-42 to NPN-44 WP 00413 | SCG-10 LTB SH-28 to LTB SH-29 WP 00413 | This workpaper category includes costs associated with upgrading or replacing failed field piping and related components. The intent behind the capital expenditure plan is to provide safe, reliable delivery of natural gas to customers and also enhance the integrity, efficiency, and responsiveness of operations while maintaining compliance with applicable regulatory and environmental regulations. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|--|---|---|
| GS Auxiliary Equipment | Non-RAMP | SCG-10-R NPN-46 to NPN-51 WP 00419 | SCG-10 LTB SH-31 to LTB SH-32 WP 00419 | This workpaper category includes work on various types of field equipment not included in other workpaper categories such as instrumentation, measurement, controls, electrical, drainage, infrastructure, safety, security, and communications systems |

H. SoCalGas Pipeline Safety Enhancement Program (PSEP)

i. SoCalGas PSEP O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Pipeline Safety Enhancement Program | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 50,494 | 63,675 | (13,181) | -21% | | | | | | | |
| Pipeline Safety Enhancement Program- PMO Costs | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 50,253 | 59,201 | (8,948) | -15% | 84.4 | 52.3 | 32 | 61% | Miles | Yes | Yes |
| | | 241 | 4,474 | (4,233) | -95% | | | | | | Yes | No |

SoCalGas PSEP O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------------|--|---|-------------------------------------|--|
| Pipeline Safety Enhancement Program | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | Yes | Yes | The unit and cost variances are primarily attributed to the deferral of four hydrotest projects (originally filed as three projects) to meet SoCalGas's obligation to maintain gas capacity to support system reliability and three projects (originally filed as two projects) accelerated to 2020. |
| | | | | The variance was partially offset by the execution of two previously deferred projects (including the approximately 65 |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|--|---|-------------------------------------|--|
| | | | | mile L2000 Blythe to Cactus City project) and partial execution of a third project (L2000 Chino Hills)). L2000 Chino Hills was filled as one project to be executed in 2021, but is being executed in two phases due to schedule limitations and to support system reliability, with phase 2 delayed until 2022 as described above. |
| Pipeline Safety Enhancement Program-PMO Costs | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | Yes | No | The spending variance is primarily due to a re-organization of PMO functions related to this workpaper into a large capital delivery organization. The re-organization necessitated the support of PMO employees to be spread to both PSEP and non-PSEP projects across the portfolio; therefore, O&M costs are now either included in the projects themselves or applied to Company overhead pools. |

ii. SoCalGas PSEP O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--|---|--|---|
| Pipeline Safety Enhancement Program | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | SCG-15-R RDP-A-28 to RDP-A-33 WP 2PS000.000 | SCG-08 BGK-37 to BGK-44 WP 2PS000.000 | This is the total cost of PSEP Hydrotest projects in the GRC. Costs have been normalized based on the hydrotest expenditures from 2019-2021. Detailed information at a project level is contained in the supplemental workpapers included as Exhibit No. SCG-15-WP-S. |
| Pipeline Safety Enhancement Program-PMO Costs | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | SCG-15-R RDP-A-36 to RDP-A-38 WP 2PS000.001 | SCG-08 BGK-37 to BGK-44 WP 2PS000.001 | The PSEP Project Management Office (PMO) provides governance and management that enable the PSEP program to effectively achieve their objectives. The PMO ensures compliance with regulatory requirements, facilitates and implements continuous work improvement, and establishes controls across all PSEP functional teams. The PSEP PMO costs included in this forecast represents those PSEP organizational |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|--|
| | | | | costs that are not charged to individual projects. |

iii. SoCalGas PSEP Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|-------------------------------------|--|----------------------|---------------------------------|---------------------|------------|--|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|----|
| Pipeline Safety Enhancement Program | | 129,491 | 239,396 | (109,905) | -46% | | | | | | | | |
| PSEP Pipeline Replacement – RAMP | | 65,044 | 126,551 | (61,507) | -49% | 10,055 | 23.13 | -13.075 | -57% | Miles | Yes | Yes | |
| PSEP Hydrotest Capital | | 21,544 | 27,747 | (6,203) | -22% | The activities in Hydrotest Capital include labor and non-labor activities that can't be described as a single unit of measure. These activities are associated with the execution of hydrotest projects. | | | | | | Yes | No |
| PSEP Valve Projects – RAMP | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 42,903 | 74,317 | (31,414) | -42% | 23 | 93 | -70 | -75% | Installations | Yes | Yes | |
| PSEP PMO – RAMP | | 0 | 10,781 | (10,781) | -100% | The activities in the Project Management Office (PMO) include labor and non-labor activities that can't be described as a single unit of measure. These activities support the successful implementation of PSEP and other large capital projects by ensuring compliance with regulatory requirements, facilitating and implementing continuous work improvement, and establishing controls across all PSEP and non-PSEP functional teams. | | | | | | Yes | No |

iv. SoCalGas PSEP Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------------|--|---|-------------------------------------|--|
| Pipeline Safety Enhancement Program | | | | |
| PSEP Pipeline Replacement – RAMP | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | Yes | Yes | The cost and unit variance are primarily attributed to ongoing environmental permitting delays and associated land acquisition and material procurement delays for an individual project: Line 85 Elk Hills to Lake Station Phase 1B replacement. Additional variance is attributed to reduction in replacement mileage scope (1 project) to account for access challenges, and projects being executed in two phases with the second phase of construction, restoration, and closeout delayed until 2022 due to access challenges (2 projects). |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|----------------------------|--------------------------|---|-------------------------------------|---|
| | | | | The cost variance was partially offset by: the acceleration of two replacement projects to start in 2021 that were initially planned for 2022 (one authorized in the 2019 GRC Petition for Modification (D.21-05-003), one authorized in Advice Letter 5617); and construction of a previously deferred project. |
| PSEP Hydrotest Capital | | Yes | No | The cost variance primarily reflects a deferral of projects to meet SoCalGas’s obligation to maintain gas capacity to support system reliability and lower than anticipated costs incurred for hydrotest failures requiring repairs. The cost variance is partially offset by the execution of two previously delayed hydrotest projects (one completed in 2021, one with partial mileage left to be completed in 2022). |
| PSEP Valve Projects – RAMP | | Yes | Yes | The variance is due to: cancellation of projects through the scope validation process (36); deferral of projects to optimize schedule and resources by bundling smaller scope (e.g. check valve) installations (21); deferral of projects due to permitting and other issues (21); and prior acceleration of project construction start dates to 2019 and 2020 (8). The variance is partially offset by the construction of previously deferred larger scope projects (e.g. valve automation) (10), and new projects identified and executed in 2021 (8). |
| PSEP PMO – RAMP | | Yes | No | The spending variance is primarily due to a re-organization of PMO functions related to this workpaper into a large capital delivery organization. The re-organization necessitated the support of PMO employees to be spread to both PSEP and non-PSEP projects across the portfolio; therefore, capital costs are now either included in the projects themselves or applied to Company overhead pools (see Gas Engineering witness area, Supervision and Engineering Overhead Pool workpaper variance explanation). |

SoCalGas PSEP Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|---|--|--|---|
| <p>Pipeline Safety Enhancement Program</p> <p>PSEP Pipeline Replacement – RAMP</p> | | <p>SCG-15-R RDP-A-40 to RDP-A-47 WP 00569A</p> | <p>SCG-08 BGK-25 to BGK-36 WP 00512B, 00512C</p> | <p>This is the total cost of PSEP Replacement projects in the GRC. Detailed information at a project level is contained in the supplemental workpapers included as Exhibit No. SCG-15-WP-S-R</p> |
| <p>PSEP Hydrotest Capital</p> | <p>Approved PSEP program to test or replace High Consequence Area High Pressure pipelines</p> | <p>SCG-15-R RDP-A-28 to RDP-A-33 WP 00569A</p> | <p>SCG-08 BGK-25 WP 00512A</p> | <p>This line item was not specifically addressed in TY 2019 GRC testimony since the capital component of hydrotests was originally included in the pipeline replacements workpaper. For RSAR purposes, hydrotest capital as well as allowance for pipeline test failures have been pulled out as a specific line item in order to clarify variance reporting.</p> |
| <p>PSEP Valve Projects – RAMP</p> | | <p>SCG-15-R RDP-A-48 WP 00569B</p> | <p>SCG-08 BGK-25 to BGK-36 WP 00571A</p> | <p>Continued implementation of the Valve Enhancement Plan included in the overall PSEP approved by the Commission in D.14-06-007. We expect to complete PSEP Valve projects in each of the GRC years at an annual cost of \$82 million. Detailed information at a project level is contained in the supplemental workpapers included as Appendix A of SCG-15.</p> |
| <p>PSEP PMO – RAMP</p> | | <p>SCG-15-R RDP-A-36 to RDP-A-38 WP 00569C</p> | <p>SCG-07 MTM-39 to MTM-40 WP 00908</p> | <p>The PSEP Project Management Office (PMO) provides governance and management that enable the PSEP program to effectively achieve their</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|--|
| | | | | objectives. The PMO ensures compliance with regulatory requirements, facilitates and implements continuous work improvement, and establishes controls across all PSEP functional teams. The PSEP PMO costs included in this forecast represents those PSEP organizational costs that are not charged to individual projects. |

I. SoCalGas Gas Acquisition

i. SoCalGas Gas Acquisition O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Gas Procurement | | 5,075 | 4,839 | 236 | 5% | | | | | | | |
| Gas Acquisition | Non-RAMP | 5,075 | 4,839 | 236 | 5% | 37 | 34 | 3 | 9% | FTE | No | No |

SoCalGas Gas Acquisition O&M Variance Explanations

No variance explanation is required for this category because the variance doesn't meet the selection criteria.

ii. SoCalGas Gas Acquisition O&M Workpaper Descriptions and GRC Testimony Locations

No variance explanation is required for this category because the variance doesn't meet the selection criteria.

iii. SoCalGas Gas Acquisition Capital Variances

The Gas Acquisition witness did not sponsor any capital costs in the TY 2019 GRC.

2. SOCALGAS Other

A. SoCalGas Customer Services

i. SoCalGas Customer Services O&M Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------------------|---|-------------------------------------|
| Customer Services | 253,860 | 284,541 | (30,681) | -11% | | | | | | | |
| Advanced Metering Infrastructure Policy | 9,855 | 11,819 | (1,964) | -17% | | | | | | | |
| Advanced Meter Operations | 9,558 | 11,296 | (1,739) | -15% | 41 | 48 | (7) | -14% | FTE | No | No |
| Advanced Meter Operations | 240 | 313 | (73) | -23% | 4,437 | 4,600 | (163) | -4% | Inspections | No | No |
| Advanced Meter Operations | 58 | 209 | (151) | -72% | 31,812 | 21,312 | 10,500 | 49% | Accounts | No | Yes |
| Sub-Total Advanced Meter Operations | 9,855 | 11,819 | (1,964) | -17% | | | | | | No | |
| Customer Services – Field & Meter Reading | 175,252 | 196,937 | (21,685) | -11% | | | | | | | |
| CS Field Staff Manager | 613 | 550 | 63 | 11% | 5 | 6 | (1) | -17% | FTE | No | No |
| CS Field Staff Manager | 780 | 986 | (206) | -21% | 6 | 8 | (1) | -18% | FTE | No | No |
| Sub-Total CS Field Staff Manager | 1,392 | 1,536 | (144) | -9% | | | | | | No | |
| Customer Services Field – Operations | 64,468 | 83,197 | (18,729) | -23% | 1,049,861 | 1,829,324 | (779,463) | -43% | Non-RAMP Orders | Yes | Yes |
| Customer Services Field – Operations | 39,307 | 41,924 | (2,617) | -6% | 663,789 | 843,077 | (179,288) | -21% | Safety-related field orders | No | Yes |
| Customer Services Field – Operations | 2,573 | 3,536 | (963) | -27% | 1,035 | 1,330 | (294) | -22% | FTE | No | Yes |
| Sub-Total CS Field - Operations | 106,348 | 128,657 | (22,309) | -17% | | | | | | Yes | |
| Customer Services Field – Supervision | 10,874 | 11,669 | (795) | -7% | 93 | 109 | (17) | -15% | FTE | No | No |
| Customer Services Field – Supervision | 775 | 1,000 | (225) | -22% | 1,035 | 1,330 | (294) | -22% | FTE | No | Yes |
| Sub-Total CS Field- Supervision | 11,649 | 12,668 | (1,019) | -8% | | | | | | No | |
| Customer Services Field – Dispatch | 14,066 | 9,948 | 4,117 | 41% | 128 | 93 | 35 | 38% | FTE | Yes | Yes |
| Customer Services Field – Support | 10,873 | 15,934 | (5,061) | -32% | 84 | 113 | (30) | -26% | FTE | Yes | Yes |
| Customer Services Field – Support | 4,838 | 3,980 | 858 | 22% | 46 | 37 | 9 | 24% | FTE | No | Yes |
| Sub-Total CS Field- Support | 15,711 | 19,915 | (4,204) | -21% | | | | | | Yes | |
| MSA Inspection Program | 10,173 | 7,412 | 2,761 | 37% | 157,599 | 166,509 | (8,910) | -5% | Remediation Orders | Yes | No |
| MSA Inspection Program | 15,146 | 13,335 | 1,811 | 14% | 2,705,546 | 2,292,132 | 413,414 | 18% | MSA Inspections | No | No |
| Sub-Total MSA Inspection Program | 25,319 | 20,747 | 4,572 | 22% | | | | | | Yes | |
| Meter Reading – Operations | 768 | 1,252 | (485) | -39% | 15 | 26 | (10) | -40% | FTE | No | Yes |

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---------------------------|---|-------------------------------------|
| Meter Reading – Operations | - | 1,289 | (1,289) | -100% | - | 26 | (26) | -100% | FTE | Yes | Yes |
| Sub-Total Meter Reading – Operations | 768 | 2,541 | (1,773) | -70% | | | | | | | |
| Meter Reading – Clerical | - | 170 | (170) | -100% | - | 2 | -2 | -100% | FTE | No | Yes |
| Meter Reading – Supervision & Training | - | 406 | (406) | -100% | - | 4 | -4 | -100% | FTE | No | Yes |
| Meter Reading – Support | - | 349 | (349) | -100% | - | 3 | -3 | -100% | FTE | No | Yes |
| Customer Services – Office Operations | 33,400 | 44,296 | (10,896) | -25% | | | | | | | |
| CCC – Operations | 23,304 | 31,314 | (8,010) | -26% | 3,164,923 | 4,877,877 | (1,712,954) | -35% | Non-Emergency Call Volume | Yes | Yes |
| CCC – Operations | 405 | 1,660 | (1,255) | -76% | 881,060 | 4,908,129 | (4,027,069) | -82% | Call Volume | Yes | Yes |
| CCC – Operations | 587 | 260 | 327 | 126% | 4 | 2 | 2 | 78% | FTE | No | Yes |
| CCC – Operations | 430 | 980 | (550) | -56% | 408,992 | 346,767 | 62,225 | 18% | Emergency Calls | No | No |
| Sub-Total CCC – Operations | 24,726 | 34,213 | (9,487) | -28% | | | | | | Yes | |
| CCC – Support | 8,674 | 10,083 | (1,409) | -14% | 55 | 66 | (11) | -16% | FTE | No | No |
| Customer Services – Information | 26,617 | 25,925 | 692 | 3% | | | | | | | |
| Renewable Gas – Customer Outreach | 599 | 1,081 | (481) | -45% | | | | | | No | No |
| Clean Transportation – Customer Outreach | 1,998 | 1,538 | 460 | 30% | | | | | | No | No |
| CI-Customer Strategy and Engagement - | 8,763 | 8,043 | 721 | 9% | | | | | | No | No |

| WP Activity Description | RAMM Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| CI-Customer Assistance Programs | Non-RAMP | 369 | 800 | (431) | -54% | | | | | Activities administering the Medical Baseline and Gas Assistance Fund programs include outreach, enrollment, processing, customer support, and participant recertification. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| CI-Customer Assistance Programs | Natural Gas Appliance Testing (NGAT) | 1,672 | 3,072 | (1,400) | -46% | 57,242 | 103,084 | (45,842) | -44% | NGATs | Yes | Yes |
| Sub-Total CI-Customer Assistance Programs | | 2,041 | 3,872 | (1,832) | -47% | | | | | | Yes | |
| CI-Customer Segment Services | Non-RAMP | 13,216 | 11,391 | 1,825 | 16% | | | | | Customer Segment Services area consists of a variety of activities which include: account management and support for large commercial & industrial customers and the energy market segment; outreach and market analysis for small/medium businesses and residential customer segments; negotiated contract assessments and contract management; customer rate analysis; segment demand forecasting; developing program offerings and services in compliance with legislative and regulatory mandates. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Customer Services – Technologies, Policies & Solutions | | 8,736 | 5,564 | 3,172 | 57% | | | | | | | |
| Business Strategy and Development | Non-RAMP | 3,662 | 1,699 | 1,963 | 116% | | | | | The group provides analytical and execution support for initiatives in major strategic priority areas such as development and deployment of clean energy solutions that support ratepayer interests and advance Commission policy. The group also performs research and analysis on various clean energy innovation topics. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| Environmental Affairs | Non-RAMP | 644 | 733 | (89) | -12% | | | | | The group activities are to monitor and analyze issues to identify air quality regulatory and compliance impacts on SoCalGas customers and on utility operations. The group works directly with air quality agency staff and with customers on rulemakings. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Energy & Environmental Policy | Non-RAMP | 932 | 1,858 | (927) | -50% | | | | | This group provides policy analysis, agency engagement and outreach related to policies, laws and regulations related to natural gas delivery and utilization. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Planning & Legislative Analysis | Non-RAMP | 464 | 250 | 215 | 86% | | | | | The group activities consist of managing legislative analysis for SoCalGas and provide legislative support. Provides analysis of legislative policies and emerging issues that could impact SoCalGas customers. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Policy & Environmental Solutions NSS | Non-RAMP | 3,034 | 1,025 | 2,009 | 196% | | | | | The group leads the development and implementation of SoCalGas' public policy and planning efforts related to the role of gas infrastructure & system for meeting federal, state, regional and local energy and environmental policy goals. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |

SoCalGas Customer Services O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---------------------------------------|---|---|-------------------------------------|---|
| Advanced Meter Operations | Analyze consumption patterns to identify atypical/unusual consumption | No | Yes | Higher than authorized units due to Advanced Meter Analytics process improvements that continue to enhance our ability to identify and evaluate unusual consumption anomalies. |
| Customer Services Field – Operations | Non-RAMP | Yes | Yes | Variance attributed to a significant decline in certain order types directly affected by the COVID-19 pandemic. Some orders were impacted by regulatory policy decisions, such as a moratorium on collection activity and disconnections. In 2021, Credit and Collection orders were non-present and account for 85% of the total decline in orders. Additionally, some processes were temporarily modified to support COVID-19 protocols for social distancing contributing to a further order count reduction for some company-related orders. |
| Customer Services Field – Operations | Safety-related field Orders, Field Employee meetings and Training | No | Yes | Lower than forecasted RAMP orders attributed to complying with COVID-19 protocols for social distancing to ensure employee and customer safety. Orders impacted include: customer appliance requests (CSO), seasonal light orders, turn-on orders, collection orders, read and verify orders, and service establishment orders. The moratorium on collection activity impacted related turn-on orders where we normally would restore gas to those facilities and perform a safety check of all appliances when the payment has been made. Furthermore, changes in our protocols related to COVID-19 impacted read/verify orders. |
| Customer Services Field – Operations | PPE and Tools | No | Yes | Variance attributed to a reduction in customer requested orders due to the impact of COVID-19 protocols, resulting in limitations to enter customer homes and employee safety. In addition, there was a pandemic impact to CSF FTE's driven by limited hiring. |
| Customer Services Field – Supervision | Job Observations Field Rides and Job Monitoring | No | Yes | The implementation of COVID-19 protocols required the reduction of employee/customer contact to comply with social distancing. As a result, fewer field rides were conducted allowing for COVID-19 safety procedures to be followed. In addition, training capacity was reduced due to COVID-19 protocols, such as social distancing and unnecessary contact, there was a |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--|---|-------------------------------------|--|
| | | | | reduction in the size of the workforce resulting in fewer field rides and job observations. |
| Customer Services Field – Dispatch | Non-RAMP | Yes | Yes | Higher than forecasted due to an increase in the amount of training delivered due to an increase in attrition. |
| Customer Services Field – Support | Non-RAMP | Yes | Yes | Variance attributed primarily to resources that were temporarily reallocated to primarily support PACER Mobile capital projects. |
| Customer Services Field – Support | Employee Skills Training and QA inspections | No | Yes | Due to COVID-19 protocols to comply with social distancing, the training class size was reduced. The reduction in student capacity resulted in the need to add a second training shift to adequately maintain field staffing needs with qualified trained Field Technicians. As a result of adding classes for a second training shift, additional Ops Training Instructors were required. |
| MSA Inspection Program | Non-RAMP | Yes | No | Variance attributed to an increase in remediation orders that required longer on-premise time. Overtime and the use of higher wage classifications were utilized to meet staffing levels in order to address compliance related activities. |
| Meter Reading – Operations | Non-RAMP | No | Yes | Fewer manual meter reads were needed for opt-out customers due to effective increased outreach efforts. Fewer escalated city reads were needed due to installation of Data Collection Units (DCUs) providing communication coverage. |
| Meter Reading – Operations | Manual Meter Reads for Atmospheric Corrosion Inspections | Yes | Yes | This activity was absorbed by MSA Inspection Program. |
| Meter Reading – Clerical | Non-RAMP | No | Yes | This activity was absorbed by CS Field Support due to fewer manual meter reads. |
| Meter Reading – Supervision & Training | Non-RAMP | No | Yes | This activity was absorbed by CS Field Supervision due to fewer manual meter reads. |
| Meter Reading – Support | Non-RAMP | No | Yes | This activity was absorbed by CS Field Support due to fewer manual meter reads. |
| CCC – Operations | Non-RAMP | Yes | Yes | Overall decrease in call volume and lower average handle time (AHT) is attributed to reduction in billing, collections and miscellaneous calls. Moratorium on collection activity and disconnections impacted the turn-on/close call volume. |
| CCC – Operations | Update customer information for | Yes | Yes | Variance attributed to the efficiency gained by the automation technology which reduced the frequency of CSRs soliciting and/or verifying customer cell phone information. The |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------------|--|---|-------------------------------------|--|
| | notification/access purposes | | | assumption used for the authorized units and costs only considered CSRs soliciting and verifying cell phone number information on all calls. |
| CCC – Operations | CSR Training, Quality Observations, CCC Safety Committee Liaison | No | Yes | Efficiencies in technology in different business areas and process improvements allowed for the repurposing of existing resources to complete Quality Observations. |
| CI-Customer Assistance Programs | Natural Gas Appliance Testing (NGAT) ¹ | Yes | Yes | <p>The lower than forecasted percentage of homes receiving NGAT in 2021 was the result of CPUC required program policy changes that were implemented after the TY2019 GRC forecast had been developed. SoCalGas had been forecasting 85% of homes would receive NGAT based on a historical analysis. These policy changes were made in 2018 to accelerate first time treatments to meet the Commission’s programmatic initiative of treating all willing and eligible customers by 2020.</p> <p>Specifically, SoCalGas implemented the following: (1) allowing for the installation of simple measures at the time of enrollment, and (2) allowing for the installation of simple measures in rental units without property owner authorization. This resulted in fewer treatments receiving air infiltration reduction measures, which is the trigger for NGAT. Thus, only 47% of treatments received NGAT in 2021.</p> |
| Business Strategy and Development | Non-RAMP | Yes | No | The variance is primarily due to emergent Business Development activities that will assist in accelerating the transition to a Clean Fuels Infrastructure, through development of projects to support a broad range of clean fuels pathways, demonstrating the technical feasibility to safely deploy them, and managing clean fuels as part of energy transition. |
| Policy & Environmental Solutions NSS | Non-RAMP | Yes | No | The variance is primarily due to the creation of two emergent business functions including the VP of Strategy & Sustainability & Environmental Officer created to oversee all functions of the department including Sustainability, a newly formed team to focus on the impact and implementation of Sustainability and ASPIRE 2045. |

ii. SoCalGas Customer Services O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|---|---|---|--|
| Advanced Meter Operations | Analyze consumption patterns to identify atypical/unusual consumption | SCG-17-R RFG-14 to RFG-23 WP 2AM002.000 | SCG-14 DJR-28 to DJR-52 WP 2FC006.000 | This workpaper includes costs associated with the Advanced Meter Operations (AMO) organization. AMO will be responsible for AM systems maintenance and DCUs network management, post-project deployment. This workpaper includes activities, as described, designed to mitigate safety risks. |
| Customer Services Field – Operations | Non-RAMP | SCG-18-R GRM-14 to GRM-28 WP 2FC001.000 | SCG-14 DJR-15 to DJR-22 WP 2FC001.000 | CS – Field Operations consists of labor and non-labor expenses for field technicians to provide service at customer premises, including both customer and company-generated work orders. Examples of customer-generated work orders include requests to establish/remove gas service, light gas pilots, check gas appliances, shut off and restore gas service for fumigation, investigate the potential causes of high gas bills, respond to emergency incidents, investigate potential gas leaks, and other field services to customers. Examples of company-generated work include meter and regulator changes and other meter work necessary to maintain Company assets and collecting customer payments for delinquent bills. |
| Customer Services Field – Operations | Safety-related field Orders, Field Employee meetings and Training | SCG-18-R GRM-14 to GRM-28 WP 2FC001.000 | SCG-14 DJR-15 to DJR-22 WP 2FC001.000 | CS – Field Operations consists of labor and non-labor expenses for field technicians to provide service at customer premises, including both customer and company-generated work orders. Examples of customer-generated work orders include requests to establish/remove gas service, light gas pilots, check gas appliances, shut off and restore gas service for fumigation, investigate the potential causes of high gas bills, respond to emergency incidents, investigate potential gas leaks, and other field services to customers. Examples of company-generated work include meter and regulator changes and other meter work necessary to maintain Company assets and collecting customer payments for delinquent bills. |
| Customer Services Field – Operations | PPE and Tools | SCG-18-R GRM-14 to GRM-28 WP 2FC001.000 | SCG-14 DJR-15 to DJR-22 WP 2FC001.000 | CS – Field Operations consists of labor and non-labor expenses for field technicians to provide service at customer premises, including both customer and company-generated work orders. Examples of customer-generated work orders include requests to establish/remove gas service, light gas pilots, check gas appliances, shut off and restore gas service for fumigation, investigate the potential causes of high gas bills, respond to emergency incidents, investigate potential gas leaks, and other field services to customers. Examples of company-generated work include meter and regulator changes and other meter work necessary to maintain Company assets and collecting customer payments for delinquent bills. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---------------------------------------|---|---|---|--|
| Customer Services Field – Supervision | Job Observations Field Rides and Job Monitoring | SCG-18-R GRM-29 to GRM-31 WP 2FC002.000 | SCG-14 DJR-22 to DJR-24 WP 2FC002.000 | Labor and non-labor costs for front-line supervisors who provide direct supervision for CS – Field Operations technicians and collectors who work from the operating bases and cover all of SoCalGas’ service territory. CS – Field supervisors hire and coach employees, conduct safety and job observations and coordinate with the dispatch office and others to address and resolve issues, respond to emergency incidents to provide on-site leadership, and manage the overall performance of the CS –Field Operations employees. CS – Field Support Includes labor and non-labor costs for CS – Field Dispatch personnel who route and dispatch work orders to CS – Field Operations employees 24 hours a day, 365 days a year. Dispatchers are located at four central locations and handle all matters that come up during the day, including: 1) dispatching emergency orders real time as they are received; 2) redistributing work when CS – Field Operations employees call in sick or otherwise become unavailable; and 3) redistributing work orders when CS – Field Operations employees are not able to complete all work that has been assigned for the day. |
| Customer Services Field – Dispatch | Non-RAMP | SCG-18-R GRM-32 to GRM-34 WP 2FC003.000 | SCG-14 DJR-27 to DJR-28 WP 2FC004.000 | The CS – Field Support cost category includes: (1) centralized training (classroom instructors, supervisors and a training manager located at SoCalGas’ Pico Rivera skills training centers); (2) field instructors who accompany new residential field technicians immediately following their formal training; quality assurance (QA) inspectors and a QA supervisor who inspect the work of field technicians to ensure policy adherence and quality of the work performed; (3) field technology support personnel who maintain the field mobile data terminals, work management, routing and reporting systems used for CS – Field Operations; (4) operations clerks who are located at the field operating bases; (5) region and district management; and (6) administrative associates. Non-labor costs include cell phones, office supplies and other miscellaneous expenses. |
| Customer Services Field – Support | Non-RAMP | SCG-18-R GRM-34 to GRM-38 WP 2FC004.000 | SCG-14 DJR-24 to DJR-27 WP 2FC003.000 | The CS – Field Support cost category includes: (1) centralized training (classroom instructors, supervisors and a training manager located at SoCalGas’ Pico Rivera skills training centers); (2) field instructors who accompany new residential field technicians immediately following their formal training; quality assurance (QA) inspectors and a QA supervisor who inspect the work of field technicians to ensure policy adherence and quality of the work performed; (3) field technology support personnel who maintain the field mobile data terminals, work management, routing and reporting systems used for CS – Field Operations; (4) operations clerks who are located at the field operating bases; (5) region and district management; and (6) administrative associates. Non-labor costs include cell phones, office supplies and other miscellaneous expenses. |
| Customer Services Field – Support | Employee Skills Training and QA inspections | SCG-18-R GRM-34 to GRM-38 WP 2FC004.000 | SCG-14 DJR-24 to DJR-27 WP 2FC003.000 | The CS – Field Support cost category includes: (1) centralized training (classroom instructors, supervisors and a training manager located at SoCalGas’ Pico Rivera skills training centers); (2) field instructors who accompany new residential field technicians immediately following their formal training; quality assurance (QA) inspectors and a QA supervisor who inspect the work of field technicians to ensure policy adherence and quality of the work performed; (3) field technology support personnel who maintain the field mobile data terminals, work management, routing and reporting systems used for CS – Field Operations; (4) operations clerks who are located at the field operating bases; (5) region and district management; and (6) administrative associates. Non-labor costs include cell phones, office supplies and other miscellaneous expenses. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--|---|---|--|
| MSA Inspection Program | Non-RAMP | SCG-18-R GRM-38 to GRM-44 WP 2FC005.000 | SCG-14 DJR-28 to DJR-31 WP 2FC005.000 | The Department of Transportation (DOT) Code of Federal Regulations (i.e., CFR 192.481) generally requires that each MSA be inspected every three years for atmospheric corrosion. Meter readers have historically performed this function, but with the implementation of AMI and the elimination of traditional Meter Reading function, a new group, the CS – Field MSA Inspection Organization, was formed in 2016. This includes costs to perform physical, onsite inspection of each meter set assembly (MSA) to comply with DOT required MSA inspections for atmospheric corrosion, to identify conditions which require remediation by CS – Field Operations and Distribution field employees, and to contact customers to resolve meter access issues. This workpaper includes activities, as described, designed to mitigate safety risks. |
| Meter Reading – Operations | Non-RAMP | SCG-18-R GRM-44 to GRM-47 WP 2FC006.000 | SCG-14 DJR-15 to DJR-22 WP 2FC001.000 | Costs include part-time meter readers who are dispersed across SoCalGas' operating bases. Meter readers are equipped with MDTs (handheld devices) which are used to record customers' gas consumption. Meter readers capture monthly meter reads at customer premises and read over 68 million meters per year. Data from the meter readers' MDTs are uploaded each night and transferred to the Company's mainframe computer for processing and billing. Meter readers are also supported by meter reading technicians. This workpaper includes activities, as described, designed to mitigate safety risks. |
| Meter Reading – Operations | Manual Meter Reads for Atmospheric Corrosion Inspections | SCG-18-R GRM-44 to GRM-47 WP 2FC006.000 | SCG-14 DJR-15 to DJR-22 WP 2FC001.000 | Costs include part-time meter readers who are dispersed across SoCalGas' operating bases. Meter readers are equipped with MDTs (handheld devices) which are used to record customers' gas consumption. Meter readers capture monthly meter reads at customer premises and read over 68 million meters per year. Data from the meter readers' MDTs are uploaded each night and transferred to the Company's mainframe computer for processing and billing. Meter readers are also supported by meter reading technicians. This workpaper includes activities, as described, designed to mitigate safety risks. |
| Meter Reading – Clerical | Non-RAMP | SCG-18-R GRM-47 to GRM-49 WP 2FC007.000 | Not Applicable | CS – Meter Reading clerks handle the timekeeping, payroll, scheduling of part-time meter readers, and various customer facility record and geographical coding updates necessary for meter reading operations. The clerical group also handles meter access issues and provides general administrative support to the CS – Meter Reading organization. |
| Meter Reading – Supervision & Training | Non-RAMP | SCG-18-R GRM-47 to GRM-49 WP 2FC007.000 | Not Applicable | The CS – Meter Reading Supervision and Training cost category includes meter reading supervisors who are distributed across SoCalGas' operating bases from which meter readers work, to supervise, coach and manage the performance of meter reading employees. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--|---|--|--|
| Meter Reading – Support | Non-RAMP | SCG-18-R GRM-47 to GRM-49 WP 2FC007.000 | Not Applicable | The CS – Meter Reading Support cost category consists of a meter reading manager who support meter reading operations and business analysts who support the meter reading technologies, including the process to download and upload data to meter reading MDTs (aka handheld devices), conduct meter reading route analyses and route realignments, project management, and other reporting and analysis. |
| CCC – Operations | Non-RAMP | SCG-19-R MHB-7 to MHB-9 MHB-11 to MHB-20 WP 20O000.000 | SCG-15 BMS-9 to BMS-13 WP 20O000.000 | CCC-Operations expenses cover the costs of answering customer telephone calls related to Gas Leaks, Service Orders, and Billing and Payments; responding to incoming email from customers; responding to inquiries from socialgas.com website and My Account; processing faxed fumigation orders; and responding to other customer account related inquiries. CCC-Operations are in scope of the spending accountability report because it is generally the first point of contact for emergencies; as such it provides a critical support role in the safety of the SoCalGas system and the public’s well-being. This workpaper includes activities, as described, designed to mitigate safety risks. |
| CCC – Operations | Update customer information for notification/access purposes | SCG-19-R MHB-7 to MHB-9 MHB-11 to MHB-20 WP 20O000.000 | SCG-15 BMS-9 to BMS-13 WP 20O000.000 | CCC-Operations expenses cover the costs of answering customer telephone calls related to Gas Leaks, Service Orders, and Billing and Payments; responding to incoming email from customers; responding to inquiries from socialgas.com website and My Account; processing faxed fumigation orders; and responding to other customer account related inquiries. CCC-Operations are in scope of the spending accountability report because it is generally the first point of contact for emergencies; as such it provides a critical support role in the safety of the SoCalGas system and the public’s well-being. This workpaper includes activities, as described, designed to mitigate safety risks. |
| CCC – Operations | CSR Training, Quality Observations, CCC Safety Committee Liaison | SCG-19-R MHB-7 to MHB-9 MHB-11 to MHB-20 WP 20O000.000 | SCG-15 BMS-9 to BMS-13 WP 20O000.000 | CCC-Operations expenses cover the costs of answering customer telephone calls related to Gas Leaks, Service Orders, and Billing and Payments; responding to incoming email from customers; responding to inquiries from socialgas.com website and My Account; processing faxed fumigation orders; and responding to other customer account related inquiries. CCC-Operations are in scope of the spending accountability report because it is generally the first point of contact for emergencies; as such it provides a critical |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|---|--|--|---|
| | | | | support role in the safety of the SoCalGas system and the public's well-being. This workshop includes activities, as described, designed to mitigate safety risks. |
| CI-Customer Assistance Programs | Natural Gas Appliance Testing (NGAT) ¹ | SCG-20-R ASC-24 to ASC-27 WP 2IN002.000 | SCG-16 BCP-5 to BCP-6 BCP-9 to BCP-11 BCP-30 to BCP-34 WP 2IN002.000 | The Customer Assistance Program area covers costs for the administration of assistance programs offered to residential customers with limited income and/or certain medical conditions. These programs include Energy Savings Assistance (ESA) Program Natural Gas Appliance Testing (NGAT), Medical Baseline Program, and the Gas Assistance Fund. ESA Program NGAT or carbon monoxide (CO) testing is a safety-related program for Customer Assistance's ESA Program participants. SoCalGas conducts CO testing on homes weatherized through the ESA Program in accordance with the ESA Program California Installation Standards Manual and the State-wide ESA Program Policy and Procedures Manual. This workshop is in scope of the spending accountability report due to the NGAT activity that's designed to mitigate customers' exposure to unsafe levels of carbon monoxide. |
| Business Strategy and Development | Non-RAMP | SCG-21 LLA-35 to LLA-37 WP 2200-2229:000 | SCG-12 AI-5 to AI-6 WP 2RD000.000 | The purpose of the Business Strategy and Development group is to provide analytical and execution support for initiatives in major strategic priority areas such as operational excellence, development and deployment of clean energy solutions for customers, and advocacy for sensible policies and regulations that support ratepayer interests and advance Commission policy. The group also coordinates long-range planning activities. Other responsibilities of this group include performing research and analysis on variety of issues as business need arises. |
| Policy & Environmental Solutions NSS | Non-RAMP | SCG-21 LLA-20 to LLA-23 WP 2RD002.000 | SCG-29 SPM-28 to SPM-38 WP 2AG006.000 | Lead the development and implementation of SoCalGas' public policy and planning efforts to secure natural gas' foundational role in meeting federal, state, regional and local energy and environmental policy goals. Responsible for public policy issues management, local climate/energy action/sustainability plans, and environmental strategy to support business goals. |

iii. SoCalGas Customer Services Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|--|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Advanced Meter | | 0 | 5,396 | (5,396) | -100% | | | | | | | |
| | | | | | | This program completed in 2018 and was comprised of a variety of work activities making it infeasible to identify a single unit of measurement. SoCalGas AMI is showing \$24.718 million in 2017 and \$7.524 million in 2018 as capital costs for rate base purposes only. Costs through 2018 are AMI implementation-related and are recorded in the Advanced Metering Infrastructure Balancing Account (AMIBA), as previously authorized in the AMI Decision D.10-04-027 and the 2016 GRC Decision D.16-06-054. | | | | | | |
| Advanced Meter | Non-RAMP | 0 | 5,396 | (5,396) | -100% | | | | | | Yes | No |

iv. SoCalGas Customer Services Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|---|
| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
| Advanced Meter | Non-RAMP | Yes | No | This variance is due to the methodology used to calculate the imputed authorized funding at the activity level for the GRC post-test years. The CPUC approved a post-test year mechanism for the SoCalGas attrition years, which can result in imputed dollars when a project has been completed. This is described in further detail in section 2.D above. |

vi. SoCalGas Customer Services Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|--|-----------------------------|---|
| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
| Advanced Meter | Non-RAMP | SCG-17-R RFG-23 to RFG-25 SCG-17-CWP WP 00811A-811G | N/A | Expenditure for labor and non-labor costs associated with the Software Development group supporting the Advanced Metering Infrastructure (AMI) project. This group oversees the systems impacted by AM data, including the Headend Meter Data Management System (MDMS). |

B. SoCalGas Information Technology & Cybersecurity

i. SoCalGas Information Technology & Cybersecurity O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|----|
| Information Technology & Cybersecurity | | 35,630 | 34,239 | 1,391 | 4% | | | | | | | | |
| Information Technology | | 29,670 | 33,436 | (3,766) | -11% | | | | | | | | |
| Director IT SoCalGas Applications | Non-RAMP | 375 | 815 | (440) | -54% | 3 | 8 | (5) | -66% | FTE | No | Yes | |
| SCG Work Management Services | Non-RAMP | 1,260 | 1,373 | (113) | -8% | 5 | 11 | (6) | -57% | FTE | No | Yes | |
| SCG GIS & CAD Services | Non-RAMP | 168 | 194 | (26) | -13% | 1 | 1 | (0) | -19% | FTE | No | No | |
| SCG Software Dev - Database | Non-RAMP | 249 | 647 | (398) | -62% | 2 | 4 | (3) | -66% | FTE | No | Yes | |
| SCG Apps Maj Mkt App - SCG | Non-RAMP | 1,201 | 1,642 | (441) | -27% | 5 | 8 | (3) | -41% | FTE | No | Yes | |
| Scalable Platform Servs - SCG | Non-RAMP | 128 | 541 | (413) | -76% | 1 | 2 | (2) | -67% | FTE | No | Yes | |
| CI Compute Support SCG | Non-RAMP | 1,641 | 1,177 | 464 | 39% | 7 | 9 | (2) | -20% | FTE | No | Yes | |
| CI Compute Provisioning SCG | Non-RAMP | 2,596 | 723 | 1,873 | 259% | This workpaper contains variable O&M costs including software maintenance costs, and hardware purchase costs. All expenditures pertain to CI Compute Provisioning. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | Yes | No |
| CI Standards | Non-RAMP | 1,098 | 579 | 518 | 89% | 5 | 5 | 0 | 8% | FTE | No | No | |
| IT Portfolio Management | Non-RAMP | 441 | 683 | (242) | -35% | 2 | 2 | 0 | 18% | FTE | No | No | |
| Architecture and Integration - SCG | Non-RAMP | 472 | 598 | (126) | -21% | 3 | 3 | 0 | 1% | FTE | No | No | |
| IT Telecom PMO | Non-RAMP | 437 | 106 | 331 | 311% | 8 | 1 | 7 | 488% | FTE | No | Yes | |
| IT Applications NSS | Non-RAMP | 8,769 | 9,019 | (250) | -3% | This workpaper contains variable O&M costs including FTEs, software maintenance costs, and managed service costs. All expenditures pertain to financial and operational applications. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | No | No |
| IT Infrastructure NSS | Non-RAMP | 9,958 | 14,966 | (5,009) | -33% | This workpaper contains variable O&M costs including FTEs, software maintenance costs, and managed service costs. All expenditures pertain to Infrastructure including network engineering, data center, and maintenance subscriptions. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | Yes | No |
| DCAM Program | Non-RAMP | 1 | 0 | 1 | 100% | 0 | 0 | 0 | 0% | FTE | No | No | |
| Enterprise Monitoring | Non-RAMP | 565 | 0 | 565 | 100% | This workpaper contains variable O&M costs including software maintenance costs, and hardware purchase costs. All expenditures pertain to Enterprise Monitoring. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | No | No |
| Clnt Tech & Depot Sve-SCG | Non-RAMP | 134 | 372 | (238) | -64% | 1 | 3 | (3) | -74% | FTE | No | Yes | |
| IT Infra PMO | Non-RAMP | 178 | 0 | 178 | 100% | 1 | 0 | 1 | 100% | FTE | No | Yes | |
| Cybersecurity | | 5,960 | 802 | 5,158 | 643% | | | | | | | | |
| IT Information Security SCG | Firewall Admin | 1,703 | 802 | 901 | 112% | 5 | 3 | 2 | 75% | FTE | No | Yes | |
| Identity & Access Management | Firewall Admin | 2,195 | 0 | 2,195 | 100% | This workpaper contains variable O&M costs including software maintenance costs, and hardware purchase costs. All expenditures pertain to Identity & Access Management. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | | | | | | Yes | No |
| IT & Operational Technology Systems | Internal Defenses | 2,061 | 0 | 2,061 | 100% | 4 | 0 | 4 | 100% | FTE | Yes | Yes | |

SoCalGas Information Technology & Cybersecurity O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------------|--------------------------|---|-------------------------------------|--|
| Director IT SoCalGas Applications | Non-RAMP | No | Yes | The variance is due to reorganizations and personnel movement various responsibilities were redirected to other areas requiring less employee labor for this area. |
| SCG Work Management Services | Non-RAMP | No | Yes | Filling vacancies took longer than expected and resources worked on capital projects more than was originally expected. There were various capital projects that this area supported, including (but not limited to), CLICK Modernization Phase 1, and Work Management Safety & Regulatory. |
| SCG Software Dev - Database | Non-RAMP | No | Yes | The variance is due to database Administrators working on more capital projects in the areas of IT Utility Operations Applications and IT Enterprise Infrastructure than was originally planned. |
| SCG Apps Maj Mkr App - SCG | Non-RAMP | No | Yes | The variance is due to the majority of work completed in 2021 being heavily focused on Capital projects such as the Specialized Customer Billing System (SCBS) Rules Engine. |
| Scalable Platform Servs - SCG | Non-RAMP | No | Yes | The reduction in FTEs due to a shift from internal labor to managed service. Some FTEs were shifted to other work. |
| CI Compute Support SCG | Non-RAMP | No | Yes | The variance is due to FTEs supporting more capital projects than was originally planned including Wide Area network (WAN) and Private Network Refresh (PNER) and Local Area Network (LAN) Upgrade. |
| CI Compute Provisioning SCG | Non-RAMP | Yes | No | Increase in use of contractors, amortizations, and software maintenance related to a new project that started in 2021 |
| IT Telecom PMO | Non-RAMP | No | Yes | The variance is due to various reorganizations within the Company; additional employees were shifted to report and charge under this area. |
| IT Infrastructure NSS | Non-RAMP | Yes | No | Majority of the work completed in 2021 was heavily focused on Capital projects including WAN and PNER and LAN Upgrade. Also, the O&M related work is now being completed by a different category of employees. Software was also moved under a different contract with a different vendor, as well as removing software that was no longer needed. |
| Clnt Tech & Depot Svc-SCG | Non-RAMP | No | Yes | The variance is due to various reorganizations within the Company; additional employees were shifted to report and charge under this area. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------------------|--------------------------|---|-------------------------------------|---|
| IT Infra PMO | Non-RAMP | No | Yes | The variance is due to additional resources added to support the evolving network infrastructure and perform comprehensive initialization, execution, and management of the IT PMO at SoCalGas. |
| IT Information Security SCG | Firewall Admin | No | Yes | The variance is due to various reorganizations within the Company additional employees were shifted to report and charge under this area. |
| Identity & Access Management | Firewall Admin | Yes | No | The variance is due to the cost center completing a capital project in 2021 and labor charges shifting to O&M for the latter half of the year. |
| IT & Operational Technology Systems | Internal Defenses | Yes | Yes | Units: Additional resources added to support the projects that moved over from Semptra (corporate) cybersecurity to SoCalGas Cost: Additional dollars were spent to support projects that moved over from corporate cybersecurity to SoCalGas. |

ii. SoCalGas Information Technology & Cybersecurity O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------------|--------------------------|--|---|--|
| Director IT SoCalGas Applications | Non-RAMP | SCG-26 CRO-12 to CRO-13 WP 2200-2372.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2372.000 | This cost center supports the management and administration of various system-wide IT contracts and managed services. |
| SCG Work Management Services | Non-RAMP | SCG-26 CRO-15 to CRO-16 WP 2200-2445.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2445.000 | This cost center represents support services for a broad range of client organizations, including: Gas Operations / Distribution, Construction, Generation and Environmental Services. |
| SCG Software Dev - Database | Non-RAMP | SCG-26 CRO-15 to CRO-16 WP 2200-2447.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2447.000 | This cost center provides maintenance and enhancement support for system-wide database administration. |
| SCG Apps Maj Mrk App - SCG | Non-RAMP | SCG-26 CRO-12 to CRO-13 WP 2200-2451.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2451.000 | Maintenance and enhancement programming support of contract, gas flow, measurement collection, and billing functions of MCS, ENVOY, SCBS, CCS, and CAT. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------|--------------------------|--|---|--|
| Scalable Platform Servs - SCG | Non-RAMP | SCG-26 CRO-16 to CRO-17 WP 2200-2458.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2458.000 | Messaging and network activities for support and maintenance of messaging infrastructure, including E-mail, Calendaring, Instant Messaging, and SharePoint services. |
| CI Compute Support SCG | Non-RAMP | SCG-26 CRO-16 to CRO-17 WP 2200-2464.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2464.000 | This cost center provides operational support for the system-wide enterprise LAN/WAN infrastructure. |
| CI Compute Provisioning SCG | Non-RAMP | SCG-26 CRO-16 to CRO-17 WP 2200-2466.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2466.000 | This cost center is responsible for the design and implementation of CI projects for Local Area and Wide Area networks and voice systems that link all Company facilities. |
| IT Telecom PMO | Non-RAMP | SCG-26 CRO-16 to CRO-17 WP 2200-2565.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2565.000 | The Telecom PMO provides project management and development for IT Telecom Related Projects enterprise-wide. |
| IT Infrastructure NSS | Non-RAMP | SCG-26 CRO-13 to CRO-14 WP 2IT002.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2IT002.000 | Infrastructure activities include preventative maintenance, problem diagnosis and resolution, and service request processing and implementation. This category includes costs for activities, as described, designed to mitigate infrastructure risks. |
| Clnt Tech & Depot Svc-SCG | Non-RAMP | SCG-26 CRO-16 to CRO-17 WP 2200-2453.000 | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2453.000 | This cost center provides management and support services for system-wide Client Technology and IT Depot services. |
| IT Infra PMO | Non-RAMP | N/A | SCG-21 TLB/WJE-1 to TLB/WJE-21 WP 2200-2491.000 | This cost center will support IT PMO organization for Network and Infrastructure projects i.e., network performance, applications & infrastructure. |
| IT Information Security SCG | Firewall Admin | SCG-27-R GW – 21 to GW – 25 WP 2200-2469.000 | SCG-22 LRM-1 to LRM-17 WP 2200-2469.000 | The Security Engineering section provides enterprise-scale security functions and integration services for business, operational, and IT technology assets. |
| Identity & Access Management | Firewall Admin | N/A | SCG-22 LRM-1 to LRM-17 WP 2200-2513.000 | This cost center is responsible for expanding opportunities to improve the identity lifecycle with emphasis in onboarding, continuous end-user authentication improvements, new policy frameworks and standards for Identity & Access Management at the utilities. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------------|--------------------------|-----------------------------|---|--|
| IT & Operational Technology Systems | Internal Defenses | N/A | SCG-22 LRM-1 to LRM-17 WP 2200-0430.000 | Cybersecurity supports the necessary resources and systems maintenance needs of the following functional cybersecurity areas: threat Intelligence; monitoring, alerting and detection; systems operations; incident response; etc. |

iii. SoCalGas Information Technology & Cybersecurity Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|-----------------|-----------------|---|-------------------------------------|
| Information Technology & Cybersecurity | | | | | | | | | | | |
| Sub-Total Information Technology | | | | | | | | | | | |
| IT Utility Operations Applications | Non-RAMP | 3,070 | 1,243 | 1,828 | 147% | | | | | No | No |
| IT Utility Operations Applications - RAMP | Records Management | 28,613 | 29,289 | (676) | -2% | | | | | No | No |
| IT Utility Operations Applications - RAMP | Employee, Contractor, Customer, and Public Safety | 6,687 | 200 | 6,487 | 3240% | | | | | Yes | No |
| Sub-Total IT Utility Operations Applications | | | | | | | | | | | |
| IT Enterprise Infrastructure | Non-RAMP | 48,320 | 36,899 | 11,421 | 31% | | | | | Yes | No |
| Network/Telecom | Non-RAMP | 10,647 | 11,655 | (1,008) | -9% | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|---|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| | | | | | | 1. Field Area Network modernization 2. Wide Area Network modernization 3. Local Area Network modernization 4. Network communications and monitoring modernization 5. Network core modernization The variety of work scope and varying dollars associated with this activity make it infeasible to identify an appropriate unit of measure. | | | | | | |
| IT Utility Operations Hardware - RAMP | Records Management | 22 | 1,343 | (1,321) | -98% | | | | | | No | No |
| Sub-Total IT Utility Operations Hardware | | 22 | 1,343 | (1,321) | -98% | | | | | | No | |
| Customer Services | Non-RAMP | 1,730 | 1,016 | 714 | 70% | | | | | | No | No |
| Cybersecurity - RAMP | Cybersecurity | 10,302 | 10,962 | (660) | -6% | | | | | | No | No |

iv. SoCalGas Information Technology & Cybersecurity Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|---|---|---|-------------------------------------|--|
| IT Utility Operations Applications - RAMP | Employee, Contractor, Customer, and Public Safety | Yes | No | Emergent needs due to end of life technology replacement with more reliable, secure, and cohesive solutions that also provide increased capability and usability. Additionally, new initiatives and projects have been identified to improve operational safety. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------|--------------------------|---|-------------------------------------|---|
| IT Enterprise Infrastructure | Non-RAMP | Yes | No | Response to significant previous infrastructure outage resulted in reprioritization of projects in the network & infrastructure portfolios. In addition, replacement of end of life/support for Enterprise PCs contributed to the variance. |

vi. SoCalGas Information Technology & Cybersecurity Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|---|-----------------------------|---------------------------------------|--|
| IT Utility Operations Applications - RAMP | Employee, Contractor, Customer, and Public Safety | SCG-26 CRO-17 to CRO-39 | SCG-21 TLB/WJE-22 to TLB/WJE-65 | Applications support the development, implementation and maintenance of computer software utilized by customers, employees and/or vendor partners. Projects included in this workpaper are related to enterprise-wide software applications in support of utility operations. This category includes costs for activities, as described, designed to mitigate reliability risks. |
| IT Enterprise Infrastructure | Non-RAMP | SCG-26 CRO-17 to CRO-39 | SCG-21 TLB/WJE-22 to TLB/WJE-65 | IT Infrastructure supports the design, implementation and operation of the Company's computing infrastructure. Projects included in this |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|--|
| | | | | workpaper are related to enterprise-wide infrastructure in support of utility operations. This category includes costs for activities, as described, designed to mitigate reliability risks. |

C. SoCalGas Support Services

i. SoCalGas Support Services O&M Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|---------------------------|---|-------------------------------------|
| Support Services | 61,837 | 61,991 | (154) | 0% | | | | | | | |
| Environmental | 7,934 | 7,949 | (15) | 0% | | | | | | | |
| Environmental | 5,023 | 4,991 | 32 | 1% | | | | | | No | No |
| Environmental | 109 | 116 | (7) | -6% | 2 | 2 | 0 | 0% | FTE | No | No |
| Environmental | 422 | 503 | (81) | -16% | 95 | 121 | (26) | -21% | Self-Assessments | No | Yes |
| Environmental | 569 | 509 | 60 | 12% | 256 | 245 | 11 | 4% | Agency Inspections | No | No |
| Environmental | 2 | 19 | (17) | -90% | 0 | 1 | (1) | -100% | Third Party Consultant(s) | No | Yes |
| Environmental | 197 | 189 | 8 | 4% | 2 | 2 | 0 | 0% | FTE | No | No |
| Environmental | 703 | 826 | (123) | -15% | 3 | 8 | (5) | -63% | FTE | No | Yes |
| Environmental | 909 | 796 | 113 | 14% | 3,683 | 3,797 | (114) | -3% | Attendees | No | No |
| Sub-Total Environmental | 7,934 | 7,949 | (15) | 0% | | | | | | No | |
| Fleet Services & Facilities | 51,310 | 50,345 | 966 | 2% | | | | | | | |
| Facilities-Monterey Park Mgr | 2,203 | 2,642 | (438) | -17% | 2 | 4 | (2) | -50% | FTE | No | Yes |
| Facilities GCT | 1,205 | 1,714 | (509) | -30% | 6 | 9 | (3) | -33% | FTE | No | Yes |
| Director | 268 | 131 | 137 | 104% | 1 | 1 | 0 | 38% | FTE | No | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---|---|-------------------------------------|
| Facility Operations | Non-RAMP | 22,170 | 18,241 | 3,930 | 22% | 45 | 48 | (3) | -6% | FTE | Yes | No |
| Facility Operations | New Contract Security | 189 | 248 | (59) | -24% | 2 | 2 | 0 | 0% | Security Guards | No | No |
| Facility Operations | Physical Security | 794 | 18 | 776 | 4346% | 764 | 17 | 747 | 4394% | Work Orders | No | Yes |
| Facility Operations | Site Security Reviews | 28 | 13 | 16 | 125% | 111 | 111 | 0 | 0% | Sites | No | No |
| Facility Operations | Additional Security Guards | 1,023 | 901 | 122 | 14% | 12 | 11 | 1 | 9% | Security Guard | No | No |
| Sub-Total Facility Operations | | 24,205 | 19,420 | 4,785 | 25% | | | | | | Yes | |
| Amortization | Non-RAMP | 20,936 | 23,440 | (2,503) | -11% | | | | | This activity includes a variety of vehicle segments, pricing, and volume in order to meet business needs and requirements. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Amortization | Zero Emission Vehicles & Renewable Natural Gas Vehicles | 96 | 0 | 96 | 100% | | | | | This activity includes a variety of vehicle segments, pricing, and volume in order to meet business needs and requirements. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Sub-Total Amortization | | 21,032 | 23,440 | (2,408) | -10% | | | | | | No | |
| Interest | Non-RAMP | 2,373 | 2,999 | (626) | -21% | | | | | This activity includes a variety of vehicle segments, pricing, and volume in order to meet business needs and requirements. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Interest | Zero Emission Vehicles & Renewable Natural Gas Vehicles | 24 | 0 | 24 | 100% | | | | | This activity includes a variety of vehicle segments, pricing, and volume in order to meet business needs and requirements. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | No | No |
| Sub-Total Interest | | 2,397 | 2,999 | (602) | -20% | | | | | | No | |
| Supply Management, Logistics & Supplier Diversity | | 2,592 | 3,698 | (1,105) | -30% | | | | | | | |
| Fabrication & Repair | Non-RAMP | 2,592 | 3,698 | (1,105) | -30% | 2,430 | 3,755 | (1,325) | -35% | Movements | Yes | Yes |

SoCalGas Support Services O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|---|---|-------------------------------------|--|
| Environmental | Environmental Self-Assessment | No | Yes | The imputed authorized number is a 5-year average. The 5-year average Self Assessments (SAs) fluctuate as the Transmission business unit conducts 5-year SAs at relevant locations. Due to COVID-19 work restrictions, such as mandated remote work conditions, the number of SAs performed fell below the average. SoCalGas anticipates that number of SAs will meet the average after COVID-19 precautions are no longer needed. |
| Environmental | Compliance program to comply with the Safe Drinking Water and Toxic | No | Yes | No external consultant was hired in 2021 because the in-house HazMat and Air Quality teams collaborated to |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|------------------------------|--|---|-------------------------------------|---|
| | Enforcement Act of 1986 (Proposition 65) | | | complete the Prop 65 compliance activities in lieu of third-party support. |
| Environmental | Asbestos Safety Program | No | Yes | The variance is due to lower than forecasted staffing levels. Analysis of staff responsibilities resulted in more efficient operating protocols that led to the permanent reduction of one FTE in the Hazardous Materials operations team in addition to utilizing contract resources in lieu of hiring Company employees and leveraging virtual training platforms instead of in-person options. |
| Facilities-Monterey Park Mgr | Non-RAMP | No | Yes | The variance is due to facility mechanic and administrative position that were re-purposed to the Real Estate organization. The facility continued to be maintained without these resources. |
| Facilities GCT | Non-RAMP | No | Yes | The variance is due to facility mechanic that was not backfilled, facility mechanic position relocated, and audiovisual technician position was outsourced to a third party. The facility continued to be maintained without these resources. |
| Director | Non-RAMP | No | Yes | In the 2019 GRC, the director was allocated across three different work papers due to the breadth of responsibilities at that time, whereas the current director is 100% allocated to this single non-shared services activity. |
| Facility Operations | Non-RAMP | Yes | No | The variance is primarily due to additional consultant services for sustainability plans, Archibus software services, SharePoint design, and return-to-office strategy. Additionally, there were maintenance costs for energy management control systems, fuel cells, and unexpected maintenance and repair costs due to aging infrastructure. |
| Facility Operations | Physical Security | No | Yes | The variance is due to increased security needs from higher security requirements, added preventative maintenance of security systems, and additional maintenance on outdated security equipment such as badge readers, fence repairs, cabling for sensors, video feeds, and other security equipment. |
| Fabrication & Repair | Non-RAMP | Yes | Yes | The variance is primarily driven by less product demands due to system-wide protocols for COVID-19 best practices |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|--|
| | RAMP Mitigation Activity | | | of social distancing, essential worker shortages, quarantine, and sanitation requirements. A cascading effect of gas infrastructure work and non-priority customer orders being curtailed, resulted in less demand for product and reduced tool breakdowns due the lack of field projects in progress. Additional delays in production and/or reduction of production is attributed to the material suppliers' shutdowns and external resources experiencing the same COVID-19 best practices for their workforce, which delayed access to raw materials and external specialized resources. |

ii. SoCalGas Support Services O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|---|---|-----------------------------------|--|
| Environmental | Environmental Self-Assessment | SCG-25 DJ-6, DJ-11 to DJ-12 WP 2EV000.000 | SCG-20 AJG-12 WP 2EV000.000 | Environmental Services responds dynamically to several changing factors in the SCG territory which cannot be expected to follow historical trending patterns. Regulatory instructions and requirements from government agencies expand the scope of Environmental attention annually. These Environmental Services cost centers include subject matter experts in air and water quality, biological resources, cultural resources, land planning, and managing the internal environmental governance of the Company. The group supports ongoing environmental compliance, including obtaining environmental permits and approvals, developing environmental plans and conducting specialized environmental training. |
| Environmental | Compliance program to comply with the Safe Drinking Water and Toxic Enforcement | SCG-25 DJ-8 WP 2EV000.000 | SCG-20 AJG-13 WP 2EV000.000 | Through this program, Environmental Services monitors compliance activities with the Safe Drinking Water and Toxic Enforcement Act of 1986. Strict compliance with this initiative protects the state's drinking water sources from being contaminated with chemicals known to cause cancer, birth defects, or other reproductive harm. |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------------------|------------------------------|--|---|--|
| | Act of 1986 (Proposition 65) | | | |
| Environmental | Asbestos Safety Program | SCG-25 DJ-6, DJ-11 to DJ-12 WP 2EV000.000 | N/A | Environmental Services responds dynamically to several changing factors in the SCG territory which cannot be expected to follow historical trending patterns. Regulatory instructions and requirements from government agencies expand the scope of Environmental attention annually. These Environmental Services cost centers include subject matter experts in air and water quality, biological resources, cultural resources, land planning, and managing the internal environmental governance of the Company. The group supports ongoing environmental compliance, including obtaining environmental permits and approvals, developing environmental plans and conducting specialized environmental training. |
| Facilities- Monterey Park Mgr | Non-RAMP | SCG-23-R CLH-37 to CLH-39 WP 2200-0696 | SCG-19 BKG-21 to BKG 22 WP 2200-0696 | This cost center contains facility operations, houses the data center, maintenance expenses (e.g., mechanics and a manager labor, facility operations non-labor expenses such as general maintenance, janitorial, landscaping, and security maintenance) and a new employee learning center. |
| Facilities GCT | Non-RAMP | SCG-23-R CLH-37 to CLH-39 WP 2200-0735 | SCG-19 BKG-22 to BKG 23 WP 2200-0735 | This activity consists of the facility operations and maintenance expenses (e.g., mechanic and manager labor, facility operations non-labor expenses such as general maintenance, janitorial, and security maintenance) for Gas Company Tower (GCT). |
| Director | Non-RAMP | SCG-23-R CLH-30 WP 2RF001.000 | SCG-18 MF-31 WP 2RF001.000 | This activity consists of the costs associated with the Director and support staff for Facility Operations. |
| Facility Operations | Non-RAMP | SCG-23-R CLH-30 to CLH-34 WP 2RF004.000 | SCG-19 BKG-13 to BKG 17 WP 2RF004.000 | Facility Operations is tasked with operating an organization with safe, regulatory compliant, reliable, and suitable working environments for its employees. Some activities include: having safe and Americans with Disabilities Act (“ADA”) compliant access to our customers at the branch offices; having proper training of facility maintenance personnel to comply with all applicable rules and regulations; conducting regular |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|---|---|---|
| | | | | preventative maintenance of SoCalGas facilities and grounds to check that we are operating with energy efficiency, environmental awareness and safety of our employees and the public in mind; having storm water pollution control regulations; address cleanliness of our parking lots and potential storm water runoff and discharge from our facilities. SoCalGas's service territory encompasses approximately 20,000 square miles in diverse terrain throughout Central and Southern California, from Visalia to the Mexican border. Facility Operations provides operation and maintenance for 80 owned and staffed utility facilities averaging 47 years old. This workgroup contains the SoCalGas non-shared facility operation costs. Facility operations costs includes the labor and non-labor to support the maintenance of the SoCalGas facilities, which include operating bases, branch offices, and multi-use sites. |
| Facility Operations | Physical Security | SCG-23-R CLH-30 to CLH-34 WP 2RF004.000 | SCG-19 BKG-13 to BKG 17 WP 2RF004.000 | Physical security measures put in place for the security/safety of employees and infrastructure. |
| Fabrication & Repair | Non-RAMP | SCG-22 DW-12 to DW-13 WP 2SS003.000 | SCG-17 JC-7 to JC11 WP 2SS002.000 | This cost center supports the field requirements for fabricated materials, such as wedding bands, canopies, prefabricated regulator stations, shop modified pressure control fittings and specialty tools. This workpaper also supplies approximately 300 inventoried materials which are distributed by the Pico Rivera general warehouse. The shop also performs maintenance, repair and calibration on pneumatic, hydraulic, electronic and gas driven tools and equipment. |

iii. SoCalGas Support Services Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--------------------------------------|--------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--------------------|---|-------------------------------------|
| Support Services - Facilities | | 65,062 | 26,172 | 38,890 | 149% | | | | | | | |
| Infrastructure & Improvements | Non-RAMP | 52,327 | 21,815 | 30,512 | 140% | 91 | 77 | 14 | 18% | Projects Completed | Yes | No |
| Infrastructure & Improvements - RAMP | Physical Security | 4,413 | 334 | 4,078 | 1220% | 44 | 11 | 33 | 300% | Sites | Yes | Yes |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Sub-Total Infrastructure & Improvements | | 56,740 | 22,150 | 34,590 | 156% | 18 | 13 | 5 | 38% | Sites | Yes | Yes |
| Safety/Environmental | Non-RAMP | 2,196 | 1,589 | 606 | 38% | 1 | 1 | 0 | 0% | Projects | No | No |
| Bakersfield Multi-Use Facility | Non-RAMP | 2,110 | 2,350 | (240) | -10% | 39 | 2 | 37 | 1850% | Sites | No | No |
| Facility Energy Management Systems | Non-RAMP | 4,017 | 84 | 3,933 | 4693% | | | | | | Yes | Yes |

iv. SoCalGas Support Services Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------------|--------------------------|---|-------------------------------------|--|
| Infrastructure & Improvements | Non-RAMP | Yes | No | The variance is primarily due to added renovation projects that support changing workplace requirements, improve the functionality of facilities, make safety improvements, support ADA compliance and increase energy efficiency at the Energy Resource Center (ERC), Canoga Base, Redlands, and Palm Desert Base. Additionally, there were cost increases for facility renovations due to supply chain, material costs, and labor increases at Chatsworth, Anaheim Building A, and Monterey Park Building A. There was also new scope for the return-to-office equipment including audiovisual conferencing technology, monitors, monitor arms, and furniture that support the blended work model of desk sharing to absorb additional capacity from growth. |
| Infrastructure & Improvements - RAMP | Physical Security | Yes | Yes | The variance is due to added projects for Badge Reader Panels, Various Fencing and Security System Projects, and Branch Office Security Upgrades. These projects were added to increase safety and security for employees working at bases and customers at branch offices. |
| Safety/Environmental | Non-RAMP | No | Yes | The variance is due to additional automatic door projects at branch offices for Americans with Disabilities Act (ADA) compliance. |
| Facility Energy Management Systems | Non-RAMP | Yes | Yes | The variance is due to added sites for the installation of energy management systems. The sites were added to implement energy |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|---|
| | | | | management systems at additional facilities and accelerate the deployment to meet California climate goals. |

vi. SoCalGas Support Services Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------------------|--------------------------|---|--|--|
| Infrastructure & Improvements | Non-RAMP | SCG-23-R CLH-40 to CLH-45 WP 00653A, 00653B | SCG-19 BKG-25 to BKG-31 WP 006530 | The Infrastructure & Improvements forecast funds necessary facility improvements, workspace changes, and equipment upgrades to adequately support business operations. Facility Operations identifies requirements based on the criticality of the facility, the age of the asset, and the implications for failure to complete the replacement or upgrade. |
| Infrastructure & Improvements - RAMP | Physical Security | SCG-23-R CLH-42, CLH-47 WP 00653D | SCG-19 BKG-25 to BKG-31 WP 006530.004, 006530.005 | Physical security systems provide protection enhancements to infrastructure to improve access control, intrusion detection, and interdiction capabilities to deter, detect, delay, or prevent undesirable events at Company facilities. The type and extent of security upgrades varies by facility, but several have been completed, including, fences, gates, and cameras. |
| Safety/Environmental | Non-RAMP | SCG-23-R CLH-47 to CLH-48 WP 00654A, 00654B | SCG-19 BKG-31 to BKG-32 WP 006540 | The Safety and Compliance projects include American with Disabilities (“ADA”) improvements to improve customer access and accessibility to the branch offices, upgrades to fire systems, as well as to seismic |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|------------------------------------|--------------------------|---|-------------------------------|---|
| Facility Energy Management Systems | Non-RAMP | SCG-23-R CLH-49 to CLH-51 WP 00712A | SCG-19 BKG-30 WP 006530 | retrofits at various facilities throughout the service territory. Energy Management Systems consist of software and hardware that are integrated with the building's HVAC and lighting systems. |

D. SoCalGas Administrative and General

i. SoCalGas Administrative and General O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|--|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|------------------------|---|-------------------------------------|
| Administrative & General Accounting & Finance, Legal, Regulatory Affairs, External Affairs | | 78,960 | 66,871 | 12,089 | 18% | | | | | | | |
| Accounting Systems & Compliance | Non-RAMP | 495 | 333 | 162 | 49% | 7 | 7 | 0 | 0% | FTE | No | No |
| Accounting Systems & Compliance | Consulting expertise to improve records management program | 683 | 985 | (301) | -31% | | | | | | No | No |
| Sub-Total Accounting Systems & Compliance | | 1,178 | 1,318 | (140) | -11% | | | | | | No | |
| Compensation & Benefits | | 295 | 817 | (522) | -64% | | | | | | | |
| Health Benefits - Emp Assistance Program | Non-RAMP | 295 | 817 | (522) | -64% | 8,135 | 8,624 | (489) | -6% | Average Employee Count | No | No |
| Corporate Center - General Administration | | 74,537 | 64,405 | 10,132 | 16% | | | | | | | |
| SECC Outside Services Employees - F923.1 | Non-RAMP | 72,177 | 59,611 | 12,565 | 21% | | | | | | Yes | No |
| SECC Outside Services Employees - F923.1 | Records Management | 124 | 124 | (0) | 0% | | | | | | No | No |
| SECC Outside Services Employees - F923.1 | Workplace Violence/Corporate Security | 2,236 | 2,236 | 0 | 0% | | | | | | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|--------------------------|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| SECC Outside Services Employees - F923.1 | Cybersecurity | - | 2,434 | (2,434) | -100% | | | | | The costs include allocations from the following functions: defining the technology architecture required to support the technology strategy and govern the selection, deployment, and use of applications, infrastructure, and tools. The variety of work activities in this category makes it infeasible to identify a single unit of measurement. | Yes | No |
| Sub-Total SECC Outside Services Employees - F923.1 | | 74,537 | 64,405 | 10,132 | 16% | | | | | | Yes | |
| Risk Management | | 2,950 | 331 | 2,619 | 791% | | | | | | | |
| Director of Risk | Non-RAMP | 2,014 | 0 | 2,014 | 100% | 1 | 0 | 1 | 100% | FTE | Yes | Yes |
| Chief Risk Officer | Non-RAMP | 443 | 0 | 443 | 100% | 1 | 0 | 1 | 100% | FTE | No | Yes |
| Oper Risk Mgmt-SCG | Non-RAMP | 492 | 331 | 161 | 49% | 2 | 2 | 0 | 0% | FTE | No | No |

SoCalGas Administrative and General O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|--------------------------|---|-------------------------------------|--|
| SECC Outside Services Employees - F923.1 | Non-RAMP | Yes | No | The variance in 2021 actuals is due to higher than authorized costs allocated to SoCalGas by Corporate Center for the LTIP and SERP programs, higher finance and bank fees incurred, net additional staffing/labor and non-labor costs, and an increase in outside legal services. |
| SECC Outside Services Employees - F923.1 | Cybersecurity | Yes | No | The Cybersecurity group transferred staff from SECC to SoCalGas at the end of 2020, thus the 2021 Actuals are reported in the Information Technology and Cybersecurity section. |
| Director of Risk | Non-RAMP | Yes | Yes | This variance is due to consulting costs related to 2021 RAMP and the 2024 GRC filing support. The funding for this activity was previously included in SDG&E's 2019 GRC as a shared service function. Beginning in 2020, this was no longer a shared service function. In 2020, SoCalGas assigned a dedicated Director of Enterprise Risk & Compliance. |
| Chief Risk Officer | Non-RAMP | No | Yes | The funding for this activity was previously included in SDG&E's 2019 GRC as a shared service function. In 2020, SoCalGas assigned a dedicated Chief Risk Officer. |

ii. SoCalGas Administrative and General O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|--|---|--|
| SECC Outside Services Employees - F923.1 | Non-RAMP | SCG-28-R (SDG&E-26-R) MLD-10 to MLD-14 | SCG-23 (SDG&E-27) DRC-3 to DRC-5 | Corporate center allocated costs include security services provided to protect utility assets and employees, security systems, and the Corporate Security (CSS) department. The CSS department is responsible for the development and management of programs and policies for security systems, security investigations, workplace violence avoidance, as well as crisis and security risk management services. Corporate Center function is also actively involved in activities designed to mitigate the identified risk of workplace violence by supporting the planning and incident management investigation as well as programs designed to mitigate the risk event before it occurs. This includes training, investigation, employee awareness, new hire screening, employee assistance, and corporate security activities. |
| SECC Outside Services Employees - F923.1 | Cybersecurity | SCG-28-R (SDG&E-26-R) MLD-46 | SCG-22 (Entire Exhibit) | The CIO, Corporate Systems, and Security (CCSS) department is responsible for the development and management of programs and policies for security systems, security investigations, and workplace violence avoidance, as well as crisis and security risk management services. The CCSS department also jointly investigates violations of cybersecurity policy and potential cyber-crimes together with the utility's Information Security & Information Security Compliance department. The CCSS department has also newly established the Office of the CIO which has responsibility for enterprise strategy, architecture, and innovation, and vendor management. The costs associated with activities of the Office of the CIO are included above in Chief Information Officer, Info Security Ops Center, Sempra Energy Cybersecurity, IS Strategy, Governance & Architecture, Emergency Management & Business Resumption and IS Governance, Awareness & Oversight cost centers. |
| Director of Risk | Non-RAMP | N/A | SCG-27 NNM-31 to NNM-36 WP 2SM006.000 | This workpaper is comprised of activities to continue to develop and continuously improve upon SoCalGas' Enterprise Risk Management (ERM) framework. The ERM facilitates the identification and management of enterprise risks, with an emphasis on safety, the identification and prioritization of effective mitigation measures and the incorporation of risk into the investment decision-making process. The Director of Risk and Compliance is responsible for developing and implementing the increased application of probabilistic and quantitative processes based upon data to assess risks and measure |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|---|---|
| | | | | results of risk management efforts, supporting the Safety Model Assessment Proceeding (S-MAP) and other regulatory efforts, and partnering with the Accounting & Finance and Regulatory departments to support accurate and complete accountability reporting. |
| Chief Risk Officer | Non-RAMP | N/A | SCG-27 NNM-31 to NNM-36 WP 2SM006.000 | The role of Chief Risk Officer establishes the vision and guides the approach to the development and continuous improvement of SoCalGas' ERM framework. The ERM facilitates the identification and management of enterprise risks, with an emphasis on safety, the identification and prioritization of effective mitigation measures and the incorporation of risk into the investment decision-making process. This is a new position. The VP - Risk Management and Chief Risk Officer will continue to establish and guide risk management policy, promote the integration of risk concepts and analysis in asset management and investment processes, and to support the strengthening of SoCalGas' safety culture. |

iii. SoCalGas Administrative and General Capital Variances

The Administrative and General witnesses did not sponsor any capital costs in the TY 2019 GRC.

E. SoCalGas Human Resources

i. SoCalGas Human Resources O&M Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|--|---|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| Human Resources Dept, Safety, LTD & WC | RAMP Mitigation Activity | 19,615 | 21,956 | (2,341) | -11% | | | | | | | |
| SCG CEO President & COO and Chief of Human Resources & CAO | Non-RAMP | 3,402 | 1,861 | 1,541 | 83% | 5 | 4 | 0 | 5% | FTEs | Yes | No |
| SCG Director HR Services | Non-RAMP | 7,914 | 3,235 | 4,680 | 145% | 88 | 48 | 40 | 83% | FTEs | Yes | Yes |
| SCG Director HR Services | Workforce Planning - Software/Program Implementation. | 605 | 2,732 | (2,127) | -78% | 5 | 8 | (2) | -28% | FTEs | Yes | Yes |
| Sub-Total SCG Director HR Services | | 8,519 | 5,966 | 2,552 | 43% | | | | | | Yes | |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|---|---|----------------------|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| SCG Director Safety & Wellness | Non-RAMP | 782 | 626 | 156 | 25% | 5 | 5 | 0 | 0% | FTEs | No | No |
| SCG Director Safety & Wellness | HR sponsored employee contractor customer & public safety activities. | 3,926 | 9,142 | (5,216) | -57% | 34 | 56 | (22) | -39% | FTEs | Yes | Yes |
| Sub-Total SCG Director Safety & Wellness | | 4,708 | 9,768 | (5,060) | -52% | | | | | | Yes | |
| SCG Director Org Effectiveness | Non-RAMP | 2,168 | 1,803 | 365 | 20% | 17 | 20 | (3) | -17% | FTEs | No | No |
| SCG Director Org Effectiveness | Knowledge Management and Training Strategy | 818 | 2,557 | (1,739) | -68% | 6 | 9 | (3) | -31% | FTEs | Yes | Yes |
| Sub-Total SCG Director Org Effectiveness | | 2,986 | 4,360 | (1,374) | -32% | | | | | | Yes | |

SoCalGas Human Resources O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--|---|---|-------------------------------------|---|
| SCG CEO President & COO and Chief of Human Resources & CAO | Non-RAMP | Yes | No | SoCalGas incurred more non-labor costs than authorized to support the strategic priorities of SoCalGas's ASPIRE 2045 Sustainability Strategy. |
| SCG Director HR Services | Non-RAMP | Yes | Yes | The dollar and unit variance are attributed to additional Staffing, Compensation, and Employee Care Services (ECS) resources needed to support increases in hiring needs and additional Human Resources (HR) support needed for a growing employee population. |
| SCG Director HR Services | Workforce Planning - Software/Program Implementation. | Yes | Yes | The cost and unit variance for "Workforce Planning Software/Program implementation" is due to three factors: (1) The imputed authorized units and costs include employees and expenses across the Company, including outside of the HR Services department. The actual units and costs only include employees and expenses incurred within the HR Services department. This is consistent with SoCalGas's shift from a decentralized workforce planning approach to a centralized one. |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|--------------------------------|---|---|-------------------------------------|---|
| | | | | (2) SoCalGas has been able to leverage existing modeling and forecasting tools to develop workforce plans for business units, and offset several costs related to purchasing workforce planning software. (3) Delay in hiring due to challenges in recruiting candidates with required skillsets in workforce planning. |
| SCG Director Safety & Wellness | HR sponsored employee contractor customer & public safety activities. | Yes | Yes | SoCalGas reorganized to align with strategic priorities. Units and costs were reallocated to another work group within Safety Management Systems to support Construction projects. SoCalGas was able to support the planned Defensive Driver Training Instruction during the Pandemic in 2021. However, in late 2018, SoCalGas changed from in-vehicle training to online format. This change has significantly impacted the represented employee time spent in training versus the in-vehicle format thus reducing the number of labor hours and the overall cost for this activity. |
| SCG Director Org Effectiveness | Knowledge Management and Training Strategy | Yes | Yes | The original time estimates within the embedded costs were inclusive of employees time across the company and outside of the Organizational Effectiveness department. The current units and costs only include the time spent on activities for employees within the Organizational Effectiveness department. There was lower than forecasted staffing levels in Organizational Effectiveness due to lack of availability of qualified candidates. The decreased staffing levels impacted both the dollar variance and the unit variance. |

ii. SoCalGas Human Resources O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--|--------------------------|---|--|--|
| SCG CEO President & COO and Chief of Human Resources & CAO | Non-RAMP | SCG-32 MG-12 to MG-13 WP 2HR001.000 | SCG-28 AMN-34 to AMN-36, AMN-7 to AMN-8 WP 2HR001.000 | The SoCalGas (SCG) Chief Executive Officer (CEO) President & Chief Operating Officer (COO) and Chief of Human Resources & Chief Administrative Officer (CAO) provide |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|--------------------------|---|---|--|---|
| | | | | executive leadership within SoCalGas. These officers are ultimately responsible and accountable for the performance of SoCalGas. Executive Leadership executes the direction utility employees follow in providing safe, reliable and equitable service to customers. |
| SCG Director HR Services | Non-RAMP | SCG-32 MG-19 to MG-23 WP 2HR004.000 | SCG-28 AMN-9 to AMN-16 WP 2HR004.000 | The HR Services department is comprised of five work units, including: (1) Staffing - Manages the recruitment and selection of a qualified and diverse workforce; (2) HR Research & Workforce Planning - Responsible for pre-employment testing and assessments used for internal and external selection; (3) HR Operations - Responsible for management and retention of all employee personnel records; (4) Compensation - Responsible for developing and delivering competitive compensation programs, ensuring legal compliance and adherence to wage and hour laws; and (5) Employee Care Services (ECS) - Responsible for Workers' Compensation program, short- and long-term disability, leaves of absence, and return-to-work programs, Family Medical Leave Act (FMLA), California Family Rights Act (CFRA), Pregnancy Disability Leave (PDL), temporary modified duty placements, and reasonable accommodations under the Americans with Disabilities Act (ADA), and the California Fair Employment and Housing Act (FEHA). |
| SCG Director HR Services | Workforce Planning - Software/Program Implementation. | SCG-32 MG-19 to MG-23 WP 2HR004.000 | SCG-28 AMN-9 to AMN-16 WP 2HR004.000 | The HR Services department is comprised of five work units, including: (1) Staffing - Manages the recruitment and selection of a qualified and diverse workforce; (2) HR Research & Workforce Planning - Responsible for pre-employment testing and assessments used for internal and external selection; (3) HR |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|---|--|--|---|---|
| | | | | <p>Operations - Responsible for management and retention of all employee personnel records; (4) Compensation - Responsible for developing and delivering competitive compensation programs, ensuring legal compliance and adherence to wage and hour laws; and (5) Employee Care Services (ECS) - Responsible for Workers' Compensation program, short-term and long-term disability, leaves of absence, and return-to-work programs, Family Medical Leave Act (FMLA), California Family Rights Act (CFRA), Pregnancy Disability Leave (PDL), temporary modified duty placements, and reasonable accommodations under the Americans with Disabilities Act (ADA), and the California Fair Employment and Housing Act (FEHA).</p> |
| <p>SCG Director Safety & Wellness</p> | <p>HR sponsored employee contractor customer & public safety activities.</p> | <p>SCG-32 MG-25 to MG-30 WP 2HR006.000</p> | <p>SCG-28 AMN-17 to AMN-21 WP 2HR005.000 (Wellness) SCG-27 NNM-42 to NNM-54 WP 2SM003.000 (Safety)</p> | <p>The Safety, Wellness and Disability Services department is responsible for positioning SoCalGas employees to lead healthy and productive lives. The services provided by the department extend from pre-employment health testing through the end of employment at SoCalGas. Services include: physical & mental wellness education; safety and industrial hygiene education and compliance; incident prevention, analysis and reporting; Workers' Compensation administration; short-term & long-term disability management; leave-of-absence administration; and return-to-work services.</p> |
| <p>SCG Director Org Effectiveness</p> | <p>Knowledge Management and Training Strategy</p> | <p>SCG-32 MG-30 to MG-33 WP 2HR007.000</p> | <p>SCG-28 AMN-22 to AMN-26 WP 2HR007.000</p> | <p>The Organizational Effectiveness (OE) department provides leadership, organizational, and employee development programs, instructional design services, and knowledge transfer and management programs for SoCalGas. OE consists of three work units</p> |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|---|
| | | | | providing services to SoCalGas: Organizational Development & Talent Management, Knowledge Management, and Learning & Development. |

iii. SoCalGas Human Resources Capital Variances

The Human Resources witness did not sponsor any capital costs in the TY 2019 GRC.

3. SOCALGAS BALANCED PROGRAMS – DIMP, TIMP, SIMP AND RESEARCH DEVELOPMENT & DEMONSTRATION TECHNOLOGY

A. SoCalGas Balanced Programs Direct O&M Costs

i. SoCalGas Balanced Programs Direct O&M Variances

| WP Activity Description | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|--|---|-------------------------------------|
| TIMP & DIMP | 151,014 | 97,475 | 53,539 | 55% | | | | | | | |
| TIMP Project Support | 1,494 | 1,868 | (374) | -20% | | | | | | No | No |
| DIMP Project Support | 624 | 1,859 | (1,235) | -66% | | | | | | Yes | No |
| TIMP | 103,841 | 50,258 | 53,583 | 107% | 26 | 21 | 5 | 24% | In-line Inspections (ILI) | Yes | Yes |
| | | | | | 8 | 20 | (12) | -60% | External Corrosion Direct Assessments (ECDA) | | Yes |
| | | | | | 19 | 0 | 19 | 100% | Direct Examination | | Yes |
| DIMP | 45,056 | 43,490 | 1,565 | 4% | 193,000 | 180,000 | 13,000 | 7% | Riser Inspections | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? | |
|--|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|------------------|---|-------------------------------------|------------------|
| | | | | | | | | | | | | Service Inspections | Site Mitigations |
| Underground Storage - RSIMP | SIMP RAMP | 16,716 | 21,362 | (4,646) | -22% | 66,000 | 60,000 | 6,000 | 10% | Well inspections | Yes | No | |
| Research Development and Demonstration (RD&D) Technology Dev | Non-RAMP | 18,037 | 16,181 | 1,856 | 11% | 2,386 | 4,400 | (2,014) | -46% | Well inspections | No | No | |
| Pipeline Safety Enhancement Program | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 151 | 0 | 151 | 100% | 78 | - | 78 | 100% | Miles | No | No | |

Consistent with PUC 740.1, The Research Development & Demonstration (RD&D) projects support the following goals: safety, conservation, development of renewable resources and supply technologies, reliability, efficiency, and cost reduction. RD&D is focused on identifying, developing, and demonstrating technologies of significant potential value to customers and utility operations. The variety of work activities in this category makes it infeasible to identify a single unit of measurement.

ii. SoCalGas Balanced Programs Direct O&M Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------|---|-------------------------------------|--|
| DIMP Project Support | DIMP Data Maintenance | Yes | No | DIMP complies with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management and includes threat identification, risk assessment, and various programs to minimize threats and integrity concerns to reduce risk of pipeline incidents. DIMP Project Support activities are shared services and are informed by SoCalGas's DIMP Programs/Projects and Activities Addressing Risks (PAARs). Costs are balanced to the GRC authorized cycle rather than on an individual year basis and accordingly, activities fluctuate year to year and individual year expenditures may vary from the authorized amount. As described in the 2019 GRC testimony, the shared services costs are driven by existing and new PAARs and while SoCalGas continues to develop PAARs to address distribution integrity risks, integrity management shared service activities remain variable. This year's lower than forecasted expenses are attributable to the new PAAR-related work |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|---|
| TIMP | ILI & ECDA - cleaning and assessing internal conditions of high-pressure pipelines | Yes | Yes | <p>contemplated in the 2019 GRC; as the programs mature, costs are expected to stabilize.</p> <p>TIMP complies with 49 CFR §192, Subpart O—Gas Transmission Pipeline Integrity Management, and includes activities such as threat identification and risk assessment, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. TIMP activities include threat identification, risk analysis, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. The number of assessment projects vary year to year primarily based on the timing and intervals of prior assessments and compliance dates. Furthermore, integrity assessments remain variable based on external factors (e.g., risks and threats) and individual project costs will differ. The higher than forecasted expenditures in 2021 are attributable to continued validation work for assessments that took place in 2020. In addition, 2021 costs reflect Line 235 activities, specifically follow-up post-assessment and remediation activities, which SoCalGas will identify in a Tier II Advice Letter for review in accordance with the 2019 GRC Decision (D.19-09-051).</p> <p>2021 units were not presented in SoCalGas's 2019 GRC and for the purposes of the RSAR, SoCalGas adopted 2019 authorized units for 2021 reporting. As stated previously, the number of assessments vary year to year based on prescribed compliance-driven assessment cycles. Additionally, PHMSA allows the use of multiple assessment methods to comply with 49 CFR Part 192, Subpart O and the selected method may vary depending on SoCalGas's system knowledge, prior assessments, and findings. Units should be reviewed in aggregate rather than by assessment method.</p> |
| DIMP | DIMP Programs (e.g., DREAMS, GIPP) | No | Yes | DIMP complies with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management and includes threat identification, risk assessment, and various programs to minimize threats and |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-----------------------------|--------------------------|---|-------------------------------------|--|
| | | | | <p>integrity concerns to reduce risk of pipeline incidents. Units for the DIMP activities are comprised of work for the Distribution Riser Inspection Project (DRIP), Sewage Lateral Inspection Program (SLIP), and Gas Infrastructure Protection Project (GIPP). These units are representative of the major activities performed under the DIMP, although there are costs related to other PAARs and program management activities for which the identification of a single unit is not feasible. While DRIP and SLIP levels of activity were near expected, GIPP (i.e., site mitigations) was lower than forecasted due to the number of non-standard mitigations that were installed; non-standard mitigations are more complex solutions than standard mitigations and take more time to complete.</p> |
| Underground Storage - RSIMP | SIMP RAMP | Yes | Yes | <p>SIMP complies with 49 CFR §192.12 and 14 CCR §1726.6 and includes threat identification, risk analysis, assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of well-related incidents. SIMP assessments are conducted in accordance with regulatory assessment cycles and activity level may vary year to year due to compliance and operational considerations (i.e., 24-month reassessment cycle requirements to be balanced with deliverability necessities). Additionally, the cost of integrity inspections may fluctuate due to individual project findings.</p> <p>While distinct units were not previously identified in the TY2019 GRC, SoCalGas has since determined that well inspections are representative of O&M costs. However, the units identified are a component and not the entirety of O&M activities and costs supporting SIMP. Units are managed to compliance cycles and should be reviewed in aggregate accordingly.</p> |

iii. SoCalGas Balanced Programs Direct O&M Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-----------------------------|--|---|---|--|
| DIMP Project Support | DIMP Data Maintenance | SCG-14 MTM-28 WP 2200-7001 | SCG-09 AK-TS-70 to AK-TS-71 WP 2200-7001 | DIMP complies with 49 CFR §192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006. |
| TIMP | ILI & ECDA - cleaning and assessing internal conditions of high-pressure pipelines | SCG-14 MTM-28 to MTM-31 WP 2TD000.000 | SCG-09 AK-TS-27 to AK-TS-35 WP 2TD001.000 | TIMP complies with 49 CFR §192, Subpart O—Gas Transmission Pipeline Integrity Management, and includes activities such as threat identification and risk assessment, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. |
| DIMP | DIMP Programs (e.g., DREAMS, GIPP) | SCG-14 MTM-20 to MTM-28 WP 2TD000.001 | SCG-09 AK-TS-36 to AK-TS-47 WP 2TD002.000 | DIMP complies with 49 CFR §192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006.6. |
| Underground Storage - RSIMP | SIMP RAMP | SCG-10-R NPN-25 to NPN-28 WP 2US002.000 | SCG-09 AK-TS-47 to AK-TS-51 WP 2TD003.000 | SIMP complies with 49 CFR §192.12 and 14 CCR §1726.6 and utilizes advanced inspection technologies such as ultra-sonic and neutron type casing logs along with risk management disciplines to address well integrity issues. Primary O&M activities focus |

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|--------------------------|-----------------------------|-----------------------------|--|
| | | | | on the development, management and support of the program. |

B. SoCalGas Balanced Programs Direct Capital Costs

i. SoCalGas Balanced Programs Capital Variances

| WP Activity Description | RAMP Mitigation Activity | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|------------------------------|---|---------------------------------|---------------------|-------------|-------------------|-------------------------------|---------------|-----------------|---------------------|---|-------------------------------------|
| TIMP & DIMP Total | | 325,499 | 198,729 | 157% | | | | | | | |
| DIMP | DIMP Programs & records management | 4,214 | 2,003 | 91% | | | | | | Yes | No |
| DIMP | DIMP Programs - High Pressure Risk | 838 | (21,805) | -96% | | 282 | (168) | -60% | Site Mitigations | Yes | Yes |
| DIMP | DIMP Programs - Medium Pressure Risk | 207,827 | 161,974 | 353% | | 107 | 33 | 31% | Miles | Yes | Yes |
| Sub-Total DIMP | | 212,879 | 142,172 | 201% | | | | | | Yes | |
| TIMP - Dist | ILI & ECDA - cleaning and assessing internal conditions of high-pressure pipelines | 3,641 | (1,280) | -26% | | | | | | No | No |
| TIMP - Trans | ILI & ECDA - cleaning and assessing internal conditions of high-pressure pipelines | 104,401 | 54,645 | 110% | | | | | | Yes | No |
| TIMP | TIMP Programs & records management | 4,578 | 3,192 | 230% | | | | | | Yes | No |
| Sub-Total TIMP | | 112,620 | 56,557 | 101% | | | | | | Yes | |
| SIMP Total | Well Integrity Management inclusive of inspection of wells, plugging and abandonment, data management, etc. | 87,231 | 46,175 | 112% | 8 | 0 | 8 | 100% | Plug & Abandonments | Yes | Yes |
| PSEP Memorandum Account | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 29,174 | 29,174 | 100% | | 55 | 0 | 0% | Workovers | | No |
| Line 235 Memorandum Account | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | (152) | (152) | 100% | 0 | 0 | 0 | 0% | Miles | No | No |

| WP Activity Description | RAMP Mitigation Activity | 2021 Actuals (\$000) | 2021 Imputed Authorized (\$000) | \$ Variance (\$000) | % Variance | 2021 Actual Units | 2021 Imputed Authorized Units | Unit Variance | % Unit Variance | Unit of Measure | Spending Variance Explanation Required? | Unit Variance Explanation Required? |
|-------------------------|--|----------------------|---------------------------------|---------------------|------------|-------------------|-------------------------------|---------------|-----------------|-----------------|---|-------------------------------------|
| PSEP Total | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 29,022 | 0 | 29,022 | 100% | | | | | | Yes | No |

ii. SoCalGas Balanced Programs Capital Variance Explanations

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--------------------------------------|---|-------------------------------------|--|
| DIMP | DIMP Programs & records management | Yes | No | DIMP complies with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management and includes threat identification, risk assessment, and various programs to minimize threats and integrity concerns to reduce risk of pipeline incidents. DIMP records management activities are informed by DIMP and are driven by continuous enhancement and administration of system databases through software enhancements and data management for Projects and Activities Addressing Risks (PAARs). Accordingly, activities fluctuate year-to-year and may vary from the authorized amount. The spending variance is also driven by the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above. |
| DIMP | DIMP Programs - High Pressure Risk | Yes | Yes | DIMP complies with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management and includes threat identification, risk assessment, and various programs to minimize threats and integrity concerns to reduce risk of pipeline incidents. This RAMP mitigation is primarily driven by the high-pressure Gas Infrastructure Protection Project (GIPP) activity. In 2019, SoCalGas reallocated resources and costs for the DIMP between the high-pressure and medium-pressure RAMP chapters to better support risk management activities. Generally, SoCalGas's GIPP costs may vary year-to-year based on remediation measures. The units identified in this report represent the GIPP and are a component and not the entirety of activities and costs supporting the DIMP. The authorized units were derived from the total GIPP 2019 authorized units using a ratio of high-pressure and medium-pressure assets. However, GIPP is forecasted and managed at the program level and the actual number of high-pressure vs. medium-pressure mitigations may vary year-to-year due to operational considerations and complexity of mitigations (i.e., standard vs. non-standard). |
| DIMP | DIMP Programs - Medium Pressure Risk | Yes | Yes | DIMP complies with 49 CFR 192, Subpart P - Gas Distribution Pipeline Integrity Management and includes threat identification, risk assessment, and various projects to minimize threats and integrity concerns to reduce risk of |

| WP Activity Description | RAMM Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|--|---|-------------------------------------|--|
| | | | | <p>pipeline incidents. Projects are managed to compliance and operational considerations and accordingly, activities fluctuate year-to-year and may vary from the authorized amount. The spending variance is also driven by the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above.</p> <p>The units identified in this report are a component and not the entirety of activities and costs supporting the DIMP. They represent the Vintage Integrity Plastic Plan (VIIP) and Bare Steel Replacement Plan (BSRP) work on non-state-of-the-art distribution pipeline. SoCalGas's year-over-year replacements are informed by the Distribution Risk Evaluation and Monitoring System (DREAMS) model and activity levels have increased since TY2019 in alignment with the D.19-09-051.</p> |
| TIMP - Trans | ILJ & ECDA - cleaning and assessing internal conditions of high-pressure pipelines | Yes | No | <p>TIMP complies with 49 CFR 192, Subpart O - Gas Transmission Pipeline Integrity Management and includes threat identification, risk analysis, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. The variance in investments this year is not due to substantial changes to the program, but rather due to two drivers. One driver for the variance in investment is that there were more capital remediation activities resulting from assessments than forecasted in the TY2019 GRC; TIMP remediation activities are informed by assessment findings and may vary from pipeline to pipeline and year to year. The second is the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above.</p> <p>Costs also reflect Line 235 activities, specifically follow-up post-assessment and remediation activities, which SoCalGas will identify in a Tier II Advice Letter for review in accordance with the 2019 GRC Decision (D.19-09-051).</p> |
| TIMP | TIMP Programs & records management | Yes | No | <p>TIMP complies with 49 CFR 192, Subpart O - Gas Transmission Pipeline Integrity Management and includes threat identification, risk analysis, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. TIMP records management activities are driven by continuous enhancement and administration of system databases through software enhancements and data management for the TIMP. The spending variance is driven by the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above.</p> |

| WP Activity Description | RAMP Mitigation Activity | Spending Variance Explanation Required? | Unit Variance Explanation Required? | Variance Explanation |
|-------------------------|---|---|-------------------------------------|--|
| SIMP Total | Well Integrity Management inclusive of inspection of wells, plugging and abandonment, data management, etc. | Yes | Yes | SIMP complies with 49 CFR §192.12 and 14 CCR §1726.6 – Requirements for Underground Gas Storage Projects, Mechanical Integrity Testing and includes threat identification, risk analysis, assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of well-related incidents. The spending variance is driven by the calculation used to impute authorized funding at the activity level for the GRC post-test years. This is described in further detail in section 2.D above. |
| PSEP Memorandum Account | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | Yes | No | The SIMP abandonment activity level is influenced by the results of integrity inspections, which remain variable. SoCalGas proposed a full replacement of Supply Line (SL) 44-1008 in the 2019 GRC (A.17-10-008), which the Commission in D.19-09-051 did not authorize and determined that “authorization for Line 44-1008 should be requested in SoCalGas’s next GRC application.” In lieu of a full replacement of Supply Line 44-1008, SoCalGas evaluated an alternative to the replacement of SL 44-1008, which materialized with the purchase of PG&E’s Line 306. The purchase and enhancement of Line 306 as an alternative to the full replacement of Supply Line 44-1008 will result in savings to ratepayers. The actuals reflect the capital expenditures associated with the PSEP Memorandum Account (PSEPMA), including the approximately \$25MM acquisition cost of Line 306. For information on the PSEPMA, refer to the balanced programs Section C. vii. of this report. |

vi. SoCalGas Balanced Programs Capital Workpaper Descriptions and GRC Testimony Locations

| WP Activity Description | RAMP Mitigation Activity | 2019 GRC Testimony Location | 2024 GRC Testimony Location | WP Activity Description |
|-------------------------|------------------------------------|---|---|--|
| DIMP | DIMP Programs & records management | SCG-14 MTM-20 to MTM-28 WP 002770 | SCG-09 AK-TS-83 to AK-TS-85 WP D07560 | DIMP complies with 49 CFR 192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006. |
| DIMP | DIMP Programs - High Pressure Risk | SCG-14 MTM-20 to MTM-28 WP 002770 | SCG-09 AK-TS-83 to AK-TS-85 WP 002770 | DIMP complies with 49 CFR 192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces |

| | | | | |
|-------------------------|---|--|---|---|
| | | | | pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006. |
| DIMP | DIMP Programs - Medium Pressure Risk | SCG-14 MTM-20 to MTM-28 WP 002770 | SCG-09 AK-TS-83 to AK-TS-85 WP 002770 | DIMP complies with 49 CFR 192, Subpart P— Gas Distribution Pipeline Integrity Management and identifies and reduces pipeline integrity risks for distribution pipelines, as required under the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006. |
| TIMP - Trans | ILI & ECDA - cleaning and assessing internal conditions of high-pressure pipelines | SCG-14 MTM-28 to MTM-31 WP P03120 | SCG-09 AK-TS-74 to AK-TS-83 WP P03120 | TIMP complies with 49 CFR 192, Subpart O—Gas Transmission Pipeline Integrity Management, and includes activities such as threat identification and risk assessment, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. |
| TIMP | TIMP Programs & records management | SCG-14 MTM-28 to MTM-31 WP P03120 | SCG-09 AK-TS-74 to AK-TS-83 WP P07560 | TIMP complies with 49 CFR 192, Subpart O—Gas Transmission Pipeline Integrity Management, and includes activities such as threat identification and risk assessment, pipeline assessments, remediation, and other actions that minimize threats and integrity concerns to reduce risk of pipeline failure. |
| SIMP Total | Well Integrity Management inclusive of inspection of wells, plugging and abandonment, data management, etc. | SCG-10-R NPN-51 to NPN-57 WP 00441 | SCG-09 AK-TS-85 to AK-TS-87 WP 004410 | SIMP complies with 49 CFR §192.12 and 14 CCR §1726.6 and utilizes advanced inspection technologies such as ultra-sonic and neutron type casing logs along with risk management disciplines to address well integrity issues. Capital activities include well remediations and plug and abandonments. |
| PSEP Memorandum Account | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | SCG-15 RDP-A-47 | SCG-08 BGK-31 to BGK-32, BGK-35 to BGK-36 | The Line 44-1008 project will install approximately 54.9 miles of pipe in San Luis Obispo and Kings Counties between Paso Robles and Avenal to replace pipe installed in 1937. The replacement project |

| | | | | | | |
|--|--|--|--|--|--|--|
| | | | | | | will re-route the existing alignment to facilitate future operation and maintenance activities and improve safety and reliability by reducing the potential for third-party damages. |
|--|--|--|--|--|--|--|

C. SoCalGas Regulatory Account 2021 Cumulative Balances

i. SoCalGas Regulatory Accounts – DIMPBA

| SoCalGas DIMPBA Details Revenue Requirements (\$000) Program Cycle 2019 - 2023 Two-Way | | | | | | |
|--|-------------------|---------------|---------------|-------------------------|----------|-----------------------|
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | -89 | | | | | -89 |
| O&M | | 43,633 | 43,492 | 141 | | 141 |
| Capital-Related Costs | | 46,259 | 21,034 | 25,225 | | 25,225 |
| Interest | | | | | 6 | 6 |
| Subtotal | -89 | 89,892 | 64,526 | 25,366 | 6 | 25,283 |

ii. SoCalGas Regulatory Accounts – TIMPBA

| SoCalGas TIMPBA Details Revenue Requirements (\$000) Program Cycle 2019 - 2023 Two-Way | | | | | | |
|--|-------------------|---------|------------|-------------------------|----------|-----------------------|
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | 90,156 | | | | | 90,156 |
| O&M | | 103,839 | 50,258 | 53,581 | | 53,581 |
| Capital-Related Costs | | 19,926 | 4,456 | 15,470 | | 15,470 |
| Interest | | | | | 88 | 88 |

| SoCalGas TIMPBA Details Revenue Requirements (\$000) Program Cycle 2019 - 2023 Two-Way | | | | | | |
|--|---------------|----------------|---------------|---------------|-----------|----------------|
| Subtotal | 90,156 | 123,765 | 54,714 | 69,051 | 88 | 159,295 |

iii. SoCalGas Regulatory Accounts – SIMPBA

| SoCalGas SIMPBA Details Revenue Requirements (\$000) Program Cycle 2019 - 2023 Two-Way | | | | | | |
|--|-------------------|---------------|---------------|-------------------------|-----------|-----------------------|
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | -5,721 | | | | | -5,721 |
| O&M | | 16,777 | 21,361 | -4,584 | | -4,584 |
| Capital-Related Costs | | 16,865 | 1,356 | 15,509 | | 15,509 |
| Interest | | | | | -2 | -2 |
| Subtotal | -5,721 | 33,642 | 22,717 | 10,925 | -2 | 5,202 |

iv. SoCal Gas Regulatory Accounts – RD&D

SoCalGas RD&D Expense Account Details Revenue Requirements (\$000)
 Program Cycle 2019 - 2023
 One-Way

| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
|-----------------------|-------------------|---------------|---------------|-------------------------|-----------|-----------------------|
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | -2,134 | | | | | -2,134 |
| O&M | | 18,035 | 16,180 | 1,855 | | 1,855 |
| Capital-Related Costs | | | | | | |
| Interest | | | | | -4 | -4 |
| Subtotal | -2,134 | 18,035 | 16,180 | 1,855 | -4 | -283 |

v. SoCal Gas Regulatory Accounts – L235MA

SoCalGas L235MA Details Revenue Requirements (\$000)

| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
|-----------------------|-------------------|------------|------------|-------------------------|----------|-----------------------|
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | 299 | | | | | 299 |
| O&M | | 185 | | 185 | | 185 |
| Capital-Related Costs | | | | | | |
| Interest | | | | | 1 | 1 |
| Subtotal | 299 | 185 | | 185 | 0 | 485 |

vi. SoCal Gas Regulatory Accounts – MROWMA

| SoCalGas MROWMA Details Revenue Requirements (\$000) | | | | | | |
|--|-------------------|---------------|------------|-------------------------|-----------|-----------------------|
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | 8,441 | | | | | 8,441 |
| O&M | | | | | | |
| Capital-Related Costs | | 12,700 | | 12,700 | | 12,700 |
| Interest | | | | | 10 | 10 |
| Subtotal | 8,441 | 12,700 | | 12,700 | 10 | 21,151 |

vii. SoCal Gas Regulatory Accounts – PSEPMA

| SoCalGas PSEPMA Details Revenue Requirements (\$000) Program Cycle 2019 - 2023 | | | | | | |
|---|-------------------|--------------|------------|-------------------------|----------|-----------------------|
| | (a) | (b) | (c) | (d) = (b) - (c) | (e) | (f) = (a) + (d) + (e) |
| | Beginning Balance | Actual | Authorized | Under/(Over) Collection | Interest | Ending Balance |
| Year 2021 | | | | | | |
| Beginning Balance | | | | | | |
| O&M | | | | | | |
| Capital-Related Costs | | 2,067 | | 2,067 | | 2,067 |
| Interest | | | | | | |
| Subtotal | | 2,067 | | 2,067 | | 2,067 |

D. SoCalGas Balanced Program Regulatory Account Disposition of Cost Recovery

i. TIMP & DIMP & SIMP (same for all three programs)

Per D.19-09-051, the TIMPBA, Post-2011 DIMPBA, and SIMPBA will continue for the 2019 GRC cycle. Any over- or under-collected balance at the end of each year within the GRC cycle will be carried over to the following year. For any under-collections as a result of overspending up to 35% of the total authorized O&M and capital expenditures, SoCalGas will submit a Tier 3 advice letter seeking recovery of the under-collected amount. For under-collections due to overspending greater than 35% of the total authorized O&M and capital expenditures, SoCalGas will seek recovery through a separate application. If SoCalGas has not overspent in excess of the total authorized O&M and capital expenditures for the current GRC cycle, but an under-collection exists due to compounding of actual capital revenue requirement recorded in the balancing account, SoCalGas will incorporate the under-collected balance in its annual regulatory account balance update submittal for recovery in the subsequent year's rates. For any unspent funds at the end of the current GRC cycle, SoCalGas will refund the balance in connection with its annual regulatory account update filing.

ii. SIMPBA

SoCalGas submitted Application A.21-01-016 for recovery of the remaining under-collection of approximately \$34.4 million on January 28, 2021, and that application is still pending at the time of the filing of this report.

iii. Research Development and Demonstration Expense Account (RDDEA)

The RDDEA is a one-way regulatory account. Pursuant to D.19-09-051, the RDDEA will continue through the 2019 GRC cycle. Any over- or under-collected balance at the end of each year within the GRC cycle will be carried over to the following year. For any unspent RD&D funds at the end of the current GRC cycle, SoCalGas will propose in its next GRC proceeding to return the overcollections in rates to customers. Under-collections may not be recovered from ratepayers and shareholders will absorb the balance in the event actual expenses exceed authorized levels.

iv. Line 235 Memorandum Account (L235MA)

SoCalGas shall seek amortization of PSEP Cost Subaccount balance of the L235MA in a Tier 2 advice letter submitted at the conclusion of Line 235 West Sections 1 and 2 testing or replacement. The Tier 2 advice letter will provide clear accounting delineations

of which costs are subject to the TIMP and which costs are subject to the PSEP. Such PSEP costs shall not be placed into rates for recovery and such TIMP costs shall be made subject to refund until the advice letter is approved.

v. Morongo Rights of Way Memorandum Account (MROWMA)

The disposition of the MROWMA balance completed through December 31, 2021, will be addressed in SoCalGas's TY 2024 General Rate Case and any additional projects will be addressed in the TY 2028 General Rate Case or other applicable proceeding designated by the Commission.

vi. Pipeline Safety Enhancement Plan Memorandum Account (PSEPMA)

The PSEP-GRC and Line 44 Subaccount balances of the PSEPMA will be addressed in SoCalGas's TY 2024 General Rate Case.

APPENDIX – SOCALGAS’S EMERGENT, CANCELLED, AND DEFERRED PROJECT LIST

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|----------------------|----------------|---|--------------------------------------|--|-----------|---|
| Gas System Integrity | O&M | Quality & Risk | Operational Compliance and Oversight | | | Portions of this effort have been delayed due to difficulties in recruiting and onboarding qualified personnel. |
| Gas System Integrity | O&M | Safety Excellence Management System | Non-RAMP | Safety Excellence Management System | | |
| Gas System Integrity | O&M | Policy Quality Assurance Cntl Effective | Non-RAMP | Policy Quality Assurance Cntl Effective activity to develop the Gas Standard Effectiveness Program. | | |
| Gas System Integrity | O&M | Damage Prevention Program Management | Non-RAMP | Damage Prevention Program Management provides strategic leadership and oversight of the Damage Prevention and Public Awareness programs and leads improvement initiatives in compliance with the Code of Federal Regulations 192.614, California Government Code 4216, and California Code of Regulations Title 19 Division 4. | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|---|--|---|-----------|---|
| Gas Transmission | Capital | GT Auxiliary Equipment - RAMP | Operational Resiliency | | | Operational resiliency projects were deferred due to limited studies completed to verify where additional pipelines would provide necessary flexibility to the pipeline system. |
| Gas Transmission | Capital | Gas Transmission Cathodic Protection - RAMP | Requirements for corrosion control | Master CP WOA created for all Districts; L85 MP 78.60 DWA and Rectifier; L6916, L4000, and L85 # TEG Replacements | | |
| PSEP | Capital | PSEP Pipeline Replacement - RAMP | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | | | L85 Elk Hills to Lake Station Replacement |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|---------------|----------------|-------------------------------------|--|----------------------------|------------------------|---|
| PSEP | Capital | PSEP Hydrotest Capital | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | | | <p>1. L2000 P2 Chino Hills (partial deferral)</p> <p>2. & 3. L2001W-D (Project has been split into two phases after filing): L2001-W-D-BADL-P2, L2001W-D-P2</p> <p>4. L2001W-E-P2</p> |
| PSEP | Capital | PSEP Valve Projects - RAMP | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | 10 new valve installations | 36 valve installations | 42 valve installations |
| PSEP | O&M | Pipeline Safety Enhancement Program | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | | | <p>1. L2000 P2 Chino Hills (partial deferral)</p> <p>2. & 3. L2001W-D (Project has been split into two phases after filing): L2001-W-D-BADL-P2, L2001W-D-P2</p> <p>4. L2001W-E-P2</p> |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|----------------------------|----------------|---|--------------------------|--|-----------|----------|
| Customer Service | O&M | Business Strategy and Development | Non-RAMP | Clean fuel projects and studies such as hydrogen, fuel cells, microgrids, and carbon management | | |
| Customer Service | O&M | Policy & Environmental Solutions NSS | Non-RAMP | Sustainability plan and implementation of ASPIRE 2045, Sustainability website launch, and Climate Commitment | | |
| Enterprise Risk Management | O&M | Director of Risk | Non-RAMP | Director of Risk | | |
| Enterprise Risk Management | O&M | Chief Risk Officer | Non-RAMP | Chief Risk Officer | | |
| Gas Engineering | O&M | Gas Engineering Analysis Center, NGV and Electrical Field | Non-RAMP | Hydrogen Blending Aviation Services | | |
| IT | O&M | DCAM Program | Non-RAMP | DCAM Program | | |
| IT | O&M | Enterprise Monitoring | Non-RAMP | Enterprise Monitoring | | |
| IT | O&M | IT Infra PMO | Non-RAMP | IT Infra PMO Emergent | | |
| IT | O&M | Identity & Access Management | Firewall Admin | Identity & Access Management | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|---|---|--|-----------|----------|
| IT | O&M | IT & Operational Technology Systems | Internal Defenses | IT & Operational Technology Systems | | |
| IT | Capital | IT Utility Operations Applications | Non-RAMP | Electronic Data Interface Exchange | | |
| IT | Capital | IT Utility Operations Applications - RAMP | Employee, Contractor, Customer, and Public Safety | Environmental Health and Safety | | |
| Support Services | Capital | Infrastructure & Improvements | Non-RAMP | Energy Resource Center (ERC) Audiovisual Upgrade, Canoga Base Refresh and Restroom Remodel, Redlands Mobile Worker, and Palm Desert Base Refresh and Restroom Remodel | | |

| Business Unit | O&M or Capital | WP Activity Description | RAMP Mitigation Activity | Emergent | Cancelled | Deferred |
|------------------|----------------|--|--|---|-----------|----------|
| Support Services | Capital | Infrastructure & Improvements | Physical Security | Badge Reader Panels, Various Fencing and Security System Projects, and Branch Office Security Upgrades | | |
| Human Resources | O&M | SCG CEO President & COO and Chief of Human Resources & CAO | Non-RAMP | ASPIRE 2045 is a major endeavor for SoCalGas, representing an evolution in how we will serve our customers and communities into the future. ASPIRE 2045 includes a bold commitment to achieve net zero greenhouse gas emissions in our operations and delivery of energy by 2045. | | |
| Balanced | Capital | PSEP Memorandum Account | Approved PSEP program to test or replace High Consequence Area High Pressure pipelines | Purchase of PG&E Line 306 | | |