

Company: Southern California Gas Company (U904G)
Proceeding: 2019 General Rate Case
Application: A.17-10-007/-008 (cons.)
Exhibit: SCG-205

SOCALGAS

REBUTTAL TESTIMONY OF OMAR RIVERA

(GAS SYSTEM INTEGRITY)

JUNE 18, 2018

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



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**SOCALGAS REBUTTAL TESTIMONY OF OMAR RIVERA
(GAS SYSTEM INTEGRITY)**

SUMMARY OF DIFFERENCES

TOTAL O&M¹ - Constant 2016 (\$000)			
	Base Year 2016	Test Year 2019	Change
SOCALGAS	\$12,968	\$32,904	\$19,936
ORA	\$12,968	\$18,853	\$5,885
CUE	\$12,968	\$32,904²	\$19,936

I. INTRODUCTION

This rebuttal testimony regarding Southern California Gas Company’s (SoCalGas or the Company) request for Gas System Integrity addresses the following testimony from other parties:

- The Office of Ratepayer Advocates (ORA), as submitted by Oge Enyinwa (Exhibit ORA-12), dated April 13, 2018.
- The Coalition of California Utility Employees (CUE), as submitted by David Marcus, dated May 14, 2018.
- The Office of the Safety Advocate (OSA), as submitted by Carolina Contreras (Exhibit OSA-1), dated May 14, 2018.

As a preliminary matter, the absence of a response to any particular issue in this rebuttal testimony does not imply or constitute agreement by SoCalGas with the proposal or contention made by these or other parties. The forecasts contained in SoCalGas’ revised direct testimony, performed by cost center, are based on sound estimates of its revenue requirements at the time of testimony preparation.

ORA does not contest SoCalGas’ forecast for incremental expenses, but rather takes issue with SoCalGas’ selected “jumping off point,” the base forecast methodology. ORA fails to

¹ For the purpose of this and other comparison tables in this rebuttal, for areas that were not discussed by the parties (e.g., CUE), it is assumed that the parties accepted SoCalGas’ forecasts.

² Recommendations were made for Gas Operations Staff and Training only; CUE does not take issue with SoCalGas’ funding request.

1 realize that SoCalGas' proposed forecast methodology captures fluctuations in historical
2 spending, implementation of new programs, and growth in activities that are not recognized in
3 ORA's proposal using a base year (2016 recorded) methodology. SoCalGas' forecast
4 methodologies reflect what SoCalGas believes represent its future needs given the expected
5 changes to our business driven by, for example, Senate Bill (SB) 661,³ SB 705,⁴ American
6 Petroleum Institute Recommended Practice 1173 (API RP 1173), and General Order (GO) 112-
7 F, as recognized by CUE and OSA. Gas System Integrity is responsible for, among other things,
8 implementing ongoing changes to business processes and Gas Standards, and training employees
9 on updated processes and technology in response to these changing regulations, standards, and
10 other best practices. Further, ORA's calculations for its recommended reductions appear to be
11 incorrect when reviewing both ORA's workpapers and the explanations in its testimony.

12 Accordingly, while SoCalGas responds herein to the intervenor testimony mentioned
13 above, SoCalGas maintains its request from my revised direct testimony that the California
14 Public Utilities Commission (CPUC or Commission) adopt its Test Year 2019 (TY 2019)
15 forecast of \$32,904,000 for Gas System Integrity Operations and Maintenance (O&M) expenses,
16 which is composed of \$15,598,000 for non-shared service activities and \$17,306,000 for shared
17 service activities.

18 Some of Gas System Integrity's activities help mitigate Risk Assessment Mitigation
19 Phase (RAMP)-related risks of: Damages Involving Third-Party Dig-Ins; Employee, Contractor,
20 Customer, and Public Safety; Damages Involving High-Pressure Pipeline Failure; Workforce
21 Planning; and Records Management. ORA has recommended reductions to mitigation activities
22 associated with these RAMP risks included in the following workpapers: Gas Operations Staff
23 and Training, Pipeline Safety and Compliance, Damage Prevention, Gas Contractor Controls,
24 etc. While ORA's recommendations for Gas System Integrity would result in reductions to
25 RAMP risk mitigations, ORA did not perform an analysis or consider how such risks would be
26 affected.

27 ORA's analysis of Gas System Integrity did not address these activities from a risk
28 reduction perspective. This lack of RAMP analysis by ORA is not consistent with the new risk-

³ Statutes of 2016, Chapter 809 (issued Sept. 29, 2016).

⁴ Statutes of 2011, Chapter 522 (issued Oct. 7, 2011).

1 informed framework adopted by the Commission, which modified the Rate Case Plan for
2 General Rate Cases (GRCs), as further explained in the rebuttal risk management testimony
3 (Exhibit SCG-202/SDG&E-202). ORA failed to explain, with evidence and support, how or
4 why the proposed RAMP activity or level of funding does not enhance safety or reduce the
5 applicable safety risk.

6 CUE does not contest SoCalGas' training-related requests. To ensure the approved funds
7 are spent on the proposed training, CUE recommends that the Commission either order
8 SoCalGas to implement the training or that the expenses be balanced through a one-way
9 balancing account. There is no need for a one-way balancing mechanism given that there will be
10 RAMP accountability reporting for such training.

11 OSA's testimony largely addresses the Company's approach and implementation plan
12 related to API RP 1173. OSA primarily takes issue with the lack of detail related to the
13 SoCalGas' implementation plan and questioning leadership's commitment to implementation.

14 As further explained in this rebuttal testimony, SoCalGas and San Diego Gas & Electric
15 Company (the Companies), all the way to the top levels including their Board of Directors, are
16 deeply committed to this voluntary implementation of API RP 1173, as shown in SoCalGas'
17 specific funding request in this GRC to adequately resource implementation of the Pipeline
18 Safety Management System (PSMS) in accordance with API RP 1173's pipeline safety standard
19 and framework. As demonstrated in my direct testimony and numerous discovery responses
20 provided to OSA, the Company's commitment and governance extends all the way to the top and
21 the PSMS will be a *company-wide* effort throughout the various organizations involved in
22 pipeline safety. The Companies fully support OSA's recommendation that they "feverishly seek
23 implementation of API 1173 and make the effort a high priority"⁵ for their gas pipeline
24 operations. Fundamentally, the GRC will authorize a revenue requirement that will dictate the
25 level of resources dedicated to this effort.⁶ It is noteworthy that ORA seeks a significant
26 reduction of 86% in funding the PSMS requested in my testimony, which is at odds with OSA's

⁵ May 14, 2018, Prepared Testimony of Carolina Contreras and Jenny Au on San Diego Gas and Electric Company and Southern California Gas Company 2019 General Rate Case, Exhibit OSA-1 (Contreras) at 3-4.

⁶ A.17-10-007, Assigned Commissioner's Scoping Memorandum and Ruling (issued January 29, 2018).

1 recommendation that the Commission lay out this expectation of feverish pursuit and OSA's
2 implication that this endeavor will require adequate resources to do so.⁷

3 **A. ORA**

4 ORA issued its report on Gas System Integrity on April 13, 2018.⁸ The following is a
5 summary of ORA's positions:

- 6 • ORA's recommendations result in a reduction of 43% of O&M Non-
7 Shared and Shared operations, which is \$14.051 million from SoCalGas'
8 proposed \$32.904 million. ORA's recommendations are derived by
9 incorporating the 2016 actual expense data into the forecast and accepting
10 SoCalGas' requested incremental increases.
- 11 • ORA recommends that for both Non-Shared and Shared operations, Gas
12 System Integrity's requested incremental increases from 2016-2019 be
13 allowed, but adjusted their forecast to reflect the use of the 2016 recorded-
14 adjusted amount.

15 **B. CUE**

16 The CUE submitted testimony on May 14, 2018.⁹ The following is a summary of
17 CUE's position:

- 18 • CUE approves of the training costs proposed in Gas System Integrity
19 testimony but suggests that the Commission order SoCalGas to implement
20 the proposed training. Alternatively, CUE proposes the Commission
21 make the proposed training expenditures subject to a one-way balancing
22 account.¹⁰

⁷ Ex. OSA-1 (Contreras) at 3-12.

⁸ April 13, 2018, ORA Report on Gas System Integrity, Exhibit ORA-12 (Oge Enyinwa).

⁹ May 14, 2018, Opening Testimony of David Marcus Addressing Training Cost for Gas System Integrity, on behalf of the Coalition of California Utility Employees [CUE].

¹⁰ *Id.* at 36. CUE also provided locate and mark-related proposals. The Company's rebuttal of such proposals is addressed in the Gas Distribution rebuttal testimony of Gina Orozco-Mejia (Exhibit SCG-204).

1 **C. OSA**

2 The OSA submitted testimony on May 14, 2018.¹¹ The following is a summary of
3 OSA’s positions:

- 4 • The Companies must feverishly seek implementation of API 1173 and
5 make the effort a high priority.
- 6 • To realize the Commission’s safety vision of “achiev[ing] a goal of zero
7 incidents and injuries across all the utilities. [it] regulate(s)” by following
8 its safety principle to “provide clear guidance on expectations for safety
9 management and outcomes,” the Commission must lay out the expectation
10 that the Companies feverishly seek implementation of API 1173 and make
11 the effort a high priority.
- 12 • The Companies must seek effectiveness of the PSMS in meeting
13 objectives, rather than seeking evidence of conformity with detailed
14 requirements.
- 15 • The Companies should conduct a third-party audit of their implementation
16 before submittal of next GRC application and share the results with OSA.
- 17 • The Companies must develop a long-term multi-year plan based on what
18 will be prioritized and how to get there.
- 19 • The Companies should conduct a thorough resource assessment to ensure
20 that the effort will be adequately resourced.
- 21 • The PSMS must be included as part of RAMP and reported on the
22 respective Accountability/Spending reports required by the Commission.
- 23 • The Companies’ leadership should, at a minimum, meet annually with
24 OSA and Safety and Enforcement Division (SED) staff to present their
25 progress and continued implementation plans of API 1173 during the
26 upcoming rate case cycle.¹²

¹¹ Ex. OSA-1 (Contreras).

¹² *Id.* at 3-4.

1 **II. GENERAL REBUTTAL REGARDING API RP 1173 IMPLEMENTATION**

2 **A. OSA**

3 “OSA supports the strategic, deliberate, and committed implementation of API1173
4 standards by the Utilities.”¹³ The Companies appreciate and share OSA’s strong and clear
5 support of implementing this standard and the Companies fully recognize the benefits and
6 importance of API RP 1173 as “a critical tool to continually improving the safety of these
7 Utilities, and to ensuring the effectiveness of all the safety programs and initiatives that are
8 proposed in this GRC.”¹⁴ Thus, as explained in my direct testimony, the Companies are
9 proactively working towards the implementation of the voluntary recommended practice to
10 establish a pipeline safety management system. As a result of this recommendation by OSA and
11 the Companies’ continued commitment to mitigating both occupational and process safety risks,
12 the Companies request that the Commission authorize the full funding request by SoCalGas to
13 adequately support the initiative.

14 Despite ORA’s proposed reduction to the funding request for this initiative, OSA does
15 not discuss the requested funding. While OSA recommends that the Companies feverishly seek
16 implementation of API RP 1173 and make it a high priority,¹⁵ it makes contradictory statements
17 elsewhere that “OSA cannot support this initiative. . . .”¹⁶

18 The basis for OSA’s concern appears to be its lack of confidence in leadership’s
19 commitment and in an implementation plan that is still in development. OSA makes a sweeping
20 conclusion that “[a]side from asserting through regulatory filings that they recognize the
21 importance of safety culture and stating that their leadership is committed to safety, the
22 Companies failed to provide any supporting evidence of their leadership’s commitment to
23 implementing the PSMS.”¹⁷ SoCalGas and SDG&E respectfully disagree. The Companies’
24 leadership recognizes that API RP 1173 has a strong emphasis on process safety and safety

¹³ *Id.* at 3-3.

¹⁴ *Id.*

¹⁵ *Id.* at 3-4.

¹⁶ *Id.* at 3-12.

¹⁷ *Id.* at 3-8.

1 culture as it is focused on and was established for pipelines. As noted in Diana Day’s direct
2 testimony, the leadership of SoCalGas and SDG&E are committed to the implementation of API
3 RP 1173.¹⁸ This is further addressed in the joint Safety Policy rebuttal testimony of David
4 Buczkowski and David Geier (Exhibit SCG-250/SDG&E-252).

5 Furthermore, OSA states, “The Utilities must develop a long-term multi-year plan based
6 on what will be prioritized and how to get there.”¹⁹ While OSA recognizes that the Companies
7 are in their early stages of their API RP 1173 effort, it goes on to state that “the Utilities are
8 overdue in beginning their implementation.”²⁰ OSA further indicates that the “absence of a
9 detailed implementation plan is also a concern in terms of ensuring that the effort will be
10 adequately resourced and not just tacked on to the current efforts that could be a set-up for
11 failure.”²¹ OSA also recommends for the Companies to conduct a thorough resource assessment
12 to ensure that the PSMS will be adequately resourced.²²

13 The Companies agree that a long-term multi-year plan is necessary and, as stated in my
14 direct testimony, it is our intent to implement a company-wide PSMS, consistent with Pipeline
15 and Hazardous Materials Safety Administration’s (PHMSA) recommendation,²³ of which will
16 entail a long-term multi-year plan and prioritization. However, API RP 1173 is not a mandated
17 practice and many of the key elements are already in practice at the Companies. OSA’s concerns
18 are misplaced and appear to recommend that the Commission should micromanage the
19 Companies’ implementation plan for a voluntary endeavor. The Companies are willingly
20 implementing API RP 1173 for its pipeline operations and it is their intent to begin with a high-
21 level plan first and then work towards developing a detailed plan that will further be prioritized.
22 In an effort to maximize ongoing enhancements of systems and processes, and to avoid
23 implementation pitfalls, the Companies have taken steps, such as establishing a project

¹⁸ December 20, 2017, Revised SoCalGas and SDG&E Joint Testimony on Risk Management, Exhibit SCG-02-R/SDG&E-02-R, Chapter 1 (Diana Day) at DD-26 to DD-27.

¹⁹ Ex. OSA-1 (Contreras) at 3-4.

²⁰ *Id.* at 3-10.

²¹ *Id.* at 3-13.

²² *Id.* at 3-4.

²³ December 20, 2017, Revised Direct Testimony on Gas System Integrity, Exhibit SCG-05-R (Omar Rivera) at OR-44.

1 management office (PMO) and Executive and Director Steering Committees, to help coordinate
2 efforts and support further detailing and refinement of implementation plans.

3 Further details of OSA’s recommendation will be discussed below in Section III.

4 **III. REBUTTAL TO PARTIES’ O&M PROPOSALS**

5 **A. Non-Shared Services O&M**

NON-SHARED O&M - Constant 2016 (\$000)			
	Base Year 2016	Test Year 2019	Change
SoCalGas	\$4,775	\$15,598	\$10,823
ORA	\$4,775	\$7,460	\$2,685
CUE	\$4,775	\$15,598²⁴	\$10,823

6
7 **1. Disputed Cost – Gas System Integrity Non-Shared O&M**

8 **a. ORA**

9 In Ms. Enyinwa’s testimony (Ex. ORA-12), ORA describes the general methodology
10 used by ORA to derive its recommendations for funding Gas System Integrity O&M expenses.

11 That description is summarized in the following paragraph:

12 Observation of the historical data in Table 12-4 and Figure 12-1 shows
13 that the 2016 adjusted-recorded data is generally consistent with the data
14 from 2012 to 2015. ORA understands that new programs and new
15 requirements can result in the increase of costs from 2016 to 2019.
16 Therefore, ORA recommends that for both Non-Shared and Shared
17 operations, SCG’s requested incremental increases from 2016 to 2019 be
18 allowed. However, ORA’s forecast reflects the use of the 2016 adjusted-
19 recorded amount instead of SCG’s use of the five-year average, 2016
20 adjusted-recorded and zero-based method for its 2019 forecast as the
21 baseline for the incremental increases in various categories. These
22 incremental increases will be added to the 2016 adjusted recorded
23 amounts.²⁵
24

25 For SoCalGas’ incremental increases, ORA indicated that it “understands that new
26 programs and new requirements can result in the increase of costs” and proposes that SoCalGas’

²⁴ Recommendations were made for Gas Operations Staff and Training only; CUE does not take issue with SoCalGas’ funding request.

²⁵ Ex. ORA-12 (Enyinwa) at 9-10.

1 incremental increases be permitted.²⁶ SoCalGas attempted to validate ORA’s resultant
2 recommended values by recreating this methodology, but in doing so arrived at differing
3 values.²⁷ SoCalGas also attempted to validate this recalculated result against ORA’s
4 workpapers,²⁸ but was unable to do so. ORA’s workpaper does not demonstrate the derivation of
5 the recommended values, only the labor and non-labor components of the final values. Overall,
6 SoCalGas’ attempt to recreate ORA’s values, using their recommended forecast methodology as
7 described in ORA’s testimony, yielded a total of \$31.136 million (shared plus non-shared
8 services) versus ORA’s recommended values in testimony of \$18.861 million [workpapers
9 indicate \$18.853], a difference of \$12.275 million.

10 SoCalGas’ calculated difference for each Shared Service and Non-Shared Service activity
11 can be seen in Appendix A to this rebuttal. For example, for Non-Shared Gas Operations
12 Training and Development, SoCalGas requested \$3.637 million in incremental for TY 2019,
13 which is more than ORA recommended amount of \$2.387 million. If ORA had correctly used its
14 methodology of 2016 adjusted-recorded plus incremental as it recommends in its testimony
15 (Exhibit ORA-12), its recommended amount should have been \$4.709 million.

16 **2. Disputed Cost – Non- Shared Gas Operations Staff and Training**

17 **a. ORA**

18 Gas Operations Staff and Training are activities and associated O&M expenses to address
19 the core Gas Operations Training and Development duties, such as 23 proposed Full-Time
20 Equivalents (FTEs) primarily performing the training of approximately 2,500 Gas Transmission,
21 Gas Distribution, and Storage employees. For a detailed description of cost and underlying
22 activities please refer to my revised direct testimony.²⁹

23 SoCalGas selected the five-year linear trend for Gas Operations Training and
24 Development based on historical data and other facts that support the use of a linear trend and
25 account for growth and other drivers that were overlooked by ORA’s 2016 adjusted-recorded
26 (i.e., base year) methodology. SoCalGas determined that a five-year (2012 through 2016)

²⁶ *Id.* at 9.

²⁷ Please see Appendix A to this rebuttal.

²⁸ Ex. ORA-12-WP at tab ‘SCG-5-R Expense.’

²⁹ Ex. SCG-05-R (Rivera) at OR-25 to 26.

1 historical linear trend best reflects future requirements for this workgroup. The table below
2 demonstrates approximately a 76% growth was experienced in labor from 2014-2016.

Years	Adjusted-Recorded				
	2012	2013	2014	2015	2016
Labor	537	739	182	549	978
Non-Labor	52	65	80	123	94
NSE	0	0	0	0	0
Total	589	804	261	672	1,072
FTE	4.8	5.7	0.4	4.9	10.8

3
4 Incremental funding was added to the five-year linear trend for incremental elements
5 associated with improvements to the training programs, such as, among other things, Cathodic
6 Protection Technical Advisors, Locate and Mark Trainer, and the Employee Collaborative
7 Training Program and Technical Academic Training Facility.³⁰ This request advances
8 SoCalGas' ability to maintain compliance with the regulatory requirements set forth in SB 705
9 and to reduce risk related to the Company's key safety risks of Employee, Contractor, Customer,
10 and Public Safety, Catastrophic Damage Involving High-Pressure Pipeline Failure, Workforce
11 Planning and Catastrophic Damage Involving Medium-Pressure Pipeline Failure.³¹

12 ORA opposes SoCalGas' use of the five-year linear trend to forecast expenditures in Gas
13 Operations Training and Development and recommends using the 2016 adjusted-recorded
14 amount, for a reduction of \$2.347 million.³² Please see Appendix A for SoCalGas' recalculation
15 of ORA's recommendation as stated in testimony, which shows ORA's potential error in
16 computing SoCalGas' funding increase. ORA's dismissal of the five-year linear trend used by
17 SoCalGas would effectively disallow funding of embedded costs in SoCalGas' forecast
18 addressing RAMP-related mitigations that reduce key safety risks. For example, as noted in my
19 revised direct testimony in support of the risk reduction benefits, Gas Operations Training and
20 Development provides competency building in the areas of planning, installation, maintenance,
21 troubleshooting, repair, order reconciliation, emergency response, construction inspection for
22 company pipelines and related facilities. Annually, the organization is responsible for

³⁰ *Id.* at OR-28 to 33.

³¹ *Id.* at OR-25.

³² Ex. ORA-12 (Enyinwa) at 9-10.

1 conducting 500 courses of classroom and hands-on training related to the practice of pipeline
2 safety for 3,000 trainees within Gas Transmission, Gas Distribution, Storage, Engineering, and
3 Planning groups.³³ In response to increasing regulatory and workforce pressures, SoCalGas
4 proposed to add personnel to expand its quality assurance program, field instructors to assist with
5 on-the-job training, compliance administrative advisors to more closely review employees' work,
6 and records management clerks to manage pipeline archives to safeguard data integrity.³⁴
7 RAMP mitigations in this cost category also include the minimum required safety training and
8 qualification of field personnel that perform cathodic protection, construction, and other activity
9 on the pipeline in compliance with federal and state³⁵ Operator Qualification (OpQual)
10 requirements.³⁶

11 In addition, the activities in Gas Operations Training and Development support the
12 Competence, Awareness, and Training related to API 1173. For example, employees and
13 management must have an appropriate level of competence regarding education, training,
14 knowledge, and experience. Regular, continuous training and updates should assist employees'
15 awareness of changes that affect their job requirements; newly emerging or changing risks;
16 problems in the execution of the PSMS; opportunities to improve processes and procedures; and
17 potential consequences of failure to follow processes or procedures.

18 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast because
19 it is incomplete in its analysis, inaccurate, and inadequate to fund the anticipated growth in work
20 to perform these safety, compliance, and risk mitigation activities. Instead, the Commission
21 should adopt SoCalGas' five-year linear trend (2012-2016) for its base forecast.

22 **b. CUE**

23 CUE does not dispute SoCalGas' incremental request for Gas Operations Training and
24 Development; however, they do propose that the Commission make the proposed training
25 expenditures subject to a one-way balancing account.³⁷ A one-way balancing account does not

³³ Ex. SCG-05-R (Rivera) at OR-v.

³⁴ *Id.* at OR-4.

³⁵ 49 C.F.R. §§ 192 *et seq.*, Subpart N – Qualification of Pipeline Personnel; GO 112-F.

³⁶ Ex. SCG-05-R (Rivera) at OR-17 to 18.

³⁷ CUE (Marcus) at 36.

1 allow appropriate flexibility to address the uncertainties of future requirements and the growth
2 for this workgroup.

3 Further, CUE’s recommendations of a one-way balancing account are not needed and
4 should be rejected because the discussed training was labeled as a RAMP activity and are thus
5 subject to accountability reporting. Accountability reporting is already a sufficient means of
6 tracking as it requires SoCalGas to be accountable to the Commission, Commission staff, and
7 parties by reporting on what was authorized, what was spent, and explain discrepancies between
8 the two from approved RAMP activities. Additional information regarding accountability
9 reporting is provided in Section II.A.3 of Ms. Day’s direct testimony and the rebuttal Risk
10 Management testimony (Exhibit SCG-202/SDG&E-202).

11 **3. Disputed Cost – Non- Shared Pipeline Safety and Compliance**

12 **a. ORA**

13 Pipeline Safety and Compliance are activities and associated O&M expenses to address
14 the core Pipeline Safety and Compliance duties in the Director of Pipeline Safety and
15 Compliance and Administration, Major Projects, Regulatory Compliance, and Controls, and
16 Quality and Risk departments that are non-shared. For a detailed description of cost and
17 underlying activities please refer to my revised direct testimony.³⁸

18 ORA supports the incremental increases requested from 2016-2019.³⁹ However, ORA’s
19 base forecasting methodology of 2016 adjusted-recorded should have been the same as
20 SoCalGas’ selected base year forecast methodology. While ORA indicates that it reflected the
21 base year plus incremental increases, its forecast resulted in a lower number than SoCalGas’ base
22 year plus incremental increases.⁴⁰ Please refer to Appendix A below for a depiction of the
23 differences in recommendations using the same methodology.

24 The Commission should reject ORA’s proposed 2016 adjusted-recorded forecast because
25 it is inaccurate and should adopt the base year forecast selected by SoCalGas.

³⁸ Ex. SCG-05-R (Rivera) at OR-35 to 36.

³⁹ Ex. ORA-12 (Enyinwa) at 9-10.

⁴⁰ *Id.*

1 **4. Disputed Cost – Non- Shared Damage Prevention Public Awareness**

2 **b. ORA**

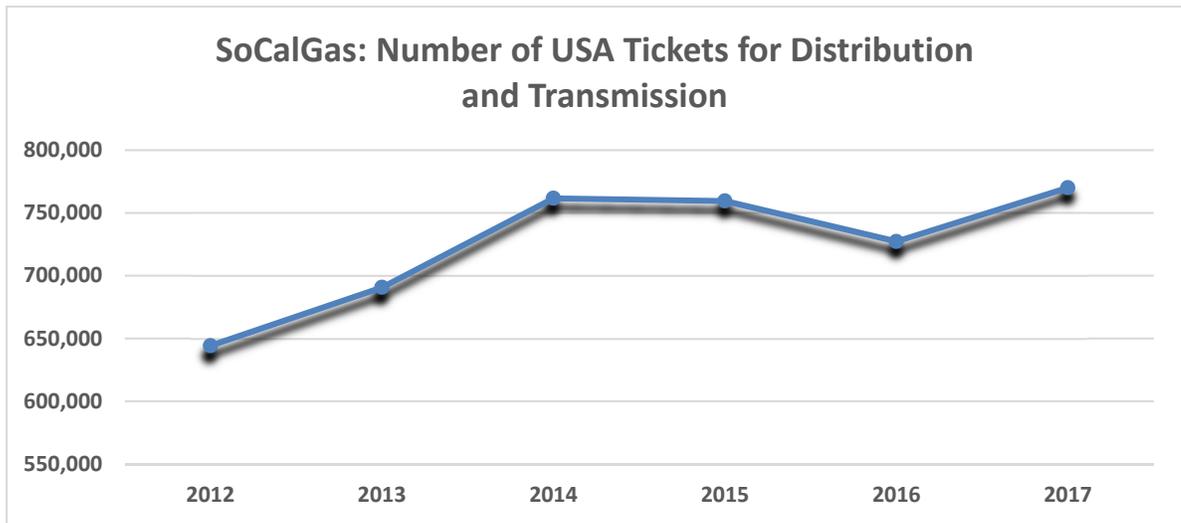
3 Damage Prevention includes activities and associated O&M expenses to address the core
4 Public Awareness Program duties, such as the Underground Service Alert (USA) notification
5 center. The Public Awareness Program is mandated pursuant to 49 C.F.R. § 192.616. For a
6 detailed description of cost and underlying activities please refer to my revised direct
7 testimony.⁴¹

8 SoCalGas used the five-year average method to develop the cost for labor and non-labor
9 expenses for this workgroup given the unpredictability in frequency and severity of damages to
10 pipelines and infrastructure. The mandated public awareness program has a focused effort to
11 promote awareness and communicate the importance of following safe digging practices to help
12 prevent damages to gas pipelines, but also storage fields, or other buried facilities. The
13 assumption is with an increase in awareness, there should be a decrease in damages. In addition,
14 increased public awareness activities are expected to boost the number of calls to USA. The
15 five-year average methodology SoCalGas chose for its base forecast captures years of high and
16 low activity and it more accurately reflects future conditions for this work category due to the
17 fluctuation in the number of damages and number of ticket volume that can drive public
18 awareness program activities. The figure below demonstrates the fluctuations and overall
19 increase in the number of USA tickets.

⁴¹ Ex. SCG-05-R (Rivera) at OR-38 to 40.

1

Figure OR-01



2

3

4 As illustrated in the figure above, there are substantial fluctuations of USA tickets from 2012-
5 2017, with the highest number of tickets experienced in 2017. Accordingly, SoCalGas included
6 incremental adjustments to the five-year average to represent the higher expenses anticipated in
7 TY 2019, as SoCalGas proposes to increase its awareness by exploring new creative ways to
8 effectively communicate public awareness, safe digging, and the gas safety messaging into target
9 audiences, as a proposed risk mitigation plan for Third-Party Dig-Ins in SoCalGas' RAMP
10 Report.

11 ORA opposes SoCalGas' use of the five-year average to forecast expenditures in Damage
12 Prevention Public Awareness and recommends using the 2016 adjusted-recorded amount, for a
13 reduction of \$756,000. Please see Appendix A below for SoCalGas' recalculation showing
14 ORA's potential error in the computation of SoCalGas' increases above the 2016 adjusted-
15 recorded amount. ORA's dismissal of the five-year historical average used by SoCalGas would
16 effectively disallow funding of embedded costs in SoCalGas' forecasts addressing RAMP-
17 related mitigations that reduce safety and reliability risks. ORA does not discuss SoCalGas'
18 RAMP analysis for Gas System Integrity and does not offer testimony regarding the funding of
19 these specific activities from a risk reduction perspective. Damage Prevention Public Awareness
20 is a mitigation to SoCalGas' risk of Catastrophic Damage Involving Third-Party Dig-Ins, which
21 as previously mentioned, is the number one RAMP risk representing the greatest threat to

1 SoCalGas' pipeline infrastructure with potential consequences to public safety.⁴² The funding
2 and resources for these risk mitigation actions are needed to correctly mark underground gas
3 infrastructure, respond to (USA notification center requests within the required timeframe, and
4 provide personnel to perform stand-by duties for third-party excavators in the vicinity of a high-
5 pressure gas pipeline. By failing to produce any analysis of the Damage Prevention forecast in
6 reducing the risk of dig-ins or enhancing safety in this area through public awareness, ORA
7 effectively ignores the new risk-informed GRC process established in Decision (D.) 14-12-025
8 through its recommendation. Further, the Public Awareness Program is mandated pursuant to
9 section 192.616 of title 49 of the Code of Federal Regulations and SoCalGas will implement new
10 incremental projects to further manage this risk including the Automated USA Ticket
11 Prioritization discussed in my revised direct testimony, as well as additional communication
12 efforts to various audiences, which would include homeowners, excavators, farmers, and others
13 that have the potential to damage subsurface installations.

14 As evidenced by the figure above, SoCalGas expects the costs in this workgroup to
15 increase with the implementation of SB 661 and the establishment of a new Board with the
16 power to enforce the law and issue fines, it is anticipated that this regulation will increase the
17 number of locate and mark tickets submitted to the USA notifications centers.

18 SoCalGas is dedicated to mitigating the risk and associated hazards of excavation
19 damages through the expansion of its public awareness program, as well as through API RP
20 1162. PHMSA incorporated API RP 1162 into its regulatory program under 49 C.F.R. § 192.616
21 and 49 C.F.R. § 195.440. Under these new regulatory requirements, pipeline operators must
22 provide the affected public with information about the location of transmission pipelines and
23 about how to recognize, respond to, and report pipeline emergencies, and the importance of
24 using the one-call notification system prior to excavation.

25 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast because
26 it is incomplete in its analysis, inaccurate, and inadequate to fund the anticipated growth in work

⁴² Investigation (I.) 16-10-015, Administrative Law Judge's Ruling including Safety and Enforcement Division Report into Record and Scheduling Comments (issued Mar. 9, 2017), Attachment A at 22 (Risk and Safety Aspects of Risk Assessment and Mitigation Phase Report of San Diego Gas & Electric Company and Southern California Gas Company), *available at* <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M179/K248/179248872.PDF>.

1 to perform these safety, compliance, and risk mitigation activities. Instead, the Commission
2 should adopt SoCalGas’ five-year average (2012-2016) for its base forecast.

3 **5. Disputed Cost – Non- Shared Gas Contractor Controls**

4 **a. ORA**

5 Gas Contractor Controls are activities and associated O&M expenses to address the core
6 PSMS and API RP 1173 duties. The PSMS group, formally referred to in my revised direct
7 testimony as “Gas Contractor Control,” is responsible for planning the development and
8 implementation of a company-wide PSMS API RP 1173, consistent with PHMSA's
9 recommendation: “PHMSA fully supports the implementation of [API] RP 1173 and plans to
10 promote vigorous conformance to this voluntary standard.”⁴³ The recommended practice is a
11 proactive, system-wide approach to safety management and reducing risks, and provides
12 operators with a comprehensive framework to address risk across the entire life cycle of a
13 pipeline. The standard promotes pipeline safety, while implementing guidelines for continuous
14 improvement.

15 SoCalGas used the zero-based method to develop the cost for labor and non-labor
16 expenses for this workgroup to forecast the requirements to develop and implement this new
17 framework. ORA opposes SoCalGas’ use of the zero-based method to forecast expenditures in
18 Gas Contractor Controls and recommends using the 2016 adjusted-recorded amount, for a
19 reduction of \$3.83 million. ORA agreed that new programs and new requirements can result in
20 the increase of costs from 2016 to 2019. Please see Appendix A below for SoCalGas’
21 recalculation showing ORA’s potential error in its computation of SoCalGas’ increase in
22 funding. As discussed in detail below, OSA recommends in their testimony in this proceeding
23 that “[t]he Utilities’ must feverishly seek implementation of API 1173 and make the effort a high
24 priority.”⁴⁴ SoCalGas strongly agrees that the implementation of API RP 1173 for its pipeline
25 operations is a key step towards enhanced asset and risk management decision-making to
26 ultimately improve safety performance. Yet, ORA’s use of a 2016 adjusted-recorded forecast

⁴³ Hon. Marie Therese Dominguez, Written Statement Before the U.S. H.R. Comm. On Transp. & Infrastructure, Subcomm. on R.R. Pipelines, and Hazardous Materials at 15 (Feb. 25, 2016), *available at* https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/Written_Testimony_Marie_Therese_Dominguez_Administrator_of_PHMSA_2.25.16.pdf.

⁴⁴ Ex. OSA-1 (Contreras) at 3-4.

1 would not enable SoCalGas to dedicate sufficient resources to this high priority implementation,
2 as it would only account for recorded costs for a year when SoCalGas was still in the
3 development stage of this effort. API RP 1173 was established in 2015 and thus the year 2016
4 would not reflect the resources needed during the crucial implementation stage for many of the
5 tenets beginning in 2017 and during the duration of the GRC cycle.

6 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast because
7 it is incomplete in its analysis, inaccurate, and inadequate to fund the anticipated growth in work
8 to perform these safety, compliance, and risk mitigation activities. Instead, the Commission
9 should adopt SoCalGas' zero-based methodology for its forecast.

10 **6. API RP 1173 Recommendations**

11 **a. OSA**

12 The creation of an SMS takes time. This conclusion has been confirmed at multiple
13 American Gas Association meetings on API 1173 indicating that implementation is a journey,
14 not a destination. In discussions with OSA, the Companies' leadership have clearly expressed
15 their commitment to implementing API RP 1173 for their gas pipeline operations. Such
16 commitment to safety is also demonstrated through the Companies' voluntary intent to
17 implement this recommended practice, but it must be done thoughtfully and not impulsively.
18 SoCalGas and SDG&E are focused on implementing API RP 1173 in a manner that creates a
19 sustainable and high-quality SMS. As noted in Ms. Day's testimony, this process of continuing
20 to build upon the Companies' existing elements of an SMS has already begun.⁴⁵

21 Each of OSA's recommendations are discussed in further detail below.

22 **API RP 1173 Implementation Plan**

23 SoCalGas and SDG&E have started on their journey of implementing API RP 1173 and,
24 if their funding request in this GRC is approved, they anticipate reaching conformance by the
25 end of 2019.⁴⁶ The Companies' implementation of API RP 1173 furthers the existing strong
26 safety culture with this comprehensive framework and gas pipeline system-wide implementation.
27 The Companies have been working towards detailing and refining the implementation plan for

⁴⁵ Ex. SCG-02-R/SDG&E-02-R, Chapter 1 (Day) at DD-25. Specifically, SoCalGas and SDG&E plan to implement API 1173 Pipeline Safety Management System on the gas side and ISO 55000 Asset Management standards on the electric side.

⁴⁶ See OSA-SEU-003, Question 2, attached as Appendix B.

1 API RP 1173. While those details are being refined, this does not mean API RP 1173 is merely
2 being “tacked on” to existing efforts; API RP 1173 is the lens through which those efforts are
3 being thoughtfully evaluated through the “Plan-Do-Check-Act” cycle and will continually be
4 enhanced.

5 Contrary to OSA’s assertions, the Companies’ API RP 1173 journey began following the
6 formal release of API RP 1173 in July 2015, when the Companies’ began evaluating a PMO
7 function, termed “Gas Safety Management Systems” (GSMS). The GSMS leverages and
8 integrates ongoing work that contains elements of a SMS across all aspects of the gas business in
9 support of the maturity of API RP 1173, as shown in a figure demonstrating the Companies’ gas
10 safety management system integration provided to OSA during discovery.⁴⁷ In 2017, leadership
11 assigned responsibility for the implementation to myself and the GSMS reports to me. As the
12 planning and implementation has moved forward, a formal organizational structure was proposed
13 and approved by leadership. Under this organizational structure, tenet champions have been
14 established for each of the 10 tenets of API RP 1173 (e.g., Emergency Preparedness and
15 Response). In addition, a governance structure has been created, which includes an Executive
16 Steering Committee (ESC) of eight (8) officers that will support achieving conformance to API
17 RP 1173. Officers from multiple functions are represented, including several Vice Presidents
18 over gas operations and customer services. The GSMS team has also set up a Director steering
19 team of sixteen (16) Directors with a specific working team consisting of the tenet champions.
20 There is also a coordination of efforts between the PSMS, underground storage, and electric
21 operations so that we can learn from each other, help to streamline the initiatives, and look for
22 opportunities to integrate into the PSMS efforts.

23 The Companies have been clear with OSA in meetings and data request responses that
24 API RP 1173 implementation and planning are still in their early stages, particularly for less
25 mature elements in this safety journey. More mature elements, such as the development and
26 refinement of a rigorous process like the Incident Evaluation Process (IEP) for gas root-cause
27 investigations, show that it is important for the Companies to take the time to thoughtfully
28 approach all of the implementation plan’s elements so that they can be effective. The Companies
29 agree with OSA that “safety culture is enhanced through discovering, communicating, and acting

⁴⁷ See excerpt of attachment to OSA-SEU-003, Question 2.b.iii, attached as Appendix B.

1 upon safety lessons, often discovered through evaluation of incidents and other events such as
2 near-misses and even stop-the job events” and the Incident Investigation tenet of API RP 1173 is
3 the element that ties much of safety management together.⁴⁸ In line with this tenet, the
4 Companies initiated the IEP. This is one example of SoCalGas and SDG&E’s actions to
5 implement a corrective action process from a systematic perspective that leads to enterprise-wide
6 process improvements. OSA’s recognition of the rigor of the Companies’ IEP for pipeline
7 operations⁴⁹ shows the importance of taking the time to get other elements right for API RP 1173
8 implementation.

9 While the Companies’ API RP 1173 detailed implementation plan is still under
10 development, the approach as stated above is the intent of the Companies to begin with a high-
11 level plan first and then work towards developing a detailed plan that will further be prioritized.
12 This high-level plan will be utilized by the tenet champions, which ultimately have the
13 responsibility of developing the details of the necessary activities that would support
14 conformance of API RP 1173, as well as details of the plan. As mentioned earlier, the GSMS
15 team has identified the tenet champions who would support the development of each of the
16 deliverables/activities for each tenet in order to reach conformance and to further continuous
17 improvement. Some of these implementation plan activities may be completed sooner than
18 others (e.g., activities demonstrating leadership and management commitment, enhancements to
19 incident investigations and management of change (MOC) process), depending on the existing
20 level of maturity and complexity of each. It is the Companies’ intent to further prioritize the
21 efforts to achieve conformance to API RP 1173 as the implementation details are developed and
22 refined. The Companies’ objective in 2020 is to begin to conduct a maturity assessment that will
23 help determine the effectiveness of the developed implementation plan and areas of opportunity,
24 while helping to provide guidance whether OSA’s proposed voluntary API third-party audit is
25 necessary. This is also in line with OSA’s recommendation that the Companies should seek
26 effectiveness of the API RP 1173 in meeting objectives, rather than “seeking evidence of
27 conformity” with detailed requirements.⁵⁰ While the Companies intend to measure their

⁴⁸ Ex. OSA-1 (Contreras) at 2-24 to 2-25.

⁴⁹ *Id.* at 2-23 to 2-24.

⁵⁰ *Id.* at 3-4.

1 effectiveness towards meeting the elements of API RP 1173 (i.e., conformance), this should not
2 be mistaken as a narrow-minded focus – it is a validation process that we are investing in and
3 prioritizing the right actions that meaningfully improve the Companies’ safety performance and
4 culture.

5 The development and inclusion of the Companies’ funding request in my direct testimony
6 to implement API RP 1173 with adequate resources is precisely the resource assessment that
7 OSA recommends. The GRC process is a multi-year long effort from inception to the final
8 decision and will thoroughly assess the Companies’ requests, including that for API RP 1173,
9 ultimately resulting in an authorize a revenue requirement by the Commission. Given the
10 number of stakeholders vetting the Companies’ requests in this GRC and ORA’s opposition to
11 funding the API RP 1173 effort, the Companies believe they are rightfully focused on securing
12 adequate funding in this proceeding and continuing to effectively execute the implementation
13 phase during the GRC cycle. And, in the spirit of the pipeline safety management system, the
14 Companies will continually evaluate resource requirements and next steps for continuous
15 improvement.

16 **Process and Occupational Safety**

17 OSA recommended “the Utilities should increase their focus on process safety.”⁵¹
18 SoCalGas and SDG&E continually evaluate that the appropriate and consistent management
19 systems for analyzing, prioritizing, and maintaining risk are utilized. As mentioned in the Safety
20 Policy rebuttal testimony, the Utilities’ standard operating procedures include practices that
21 address both process safety and occupational safety.⁵²

22 As discussed above, the Companies’ IEP is just one example of a rigorous process safety
23 element that is also tied to API RP 1173’s framework. The IEP provides guidance for a root
24 cause analysis on specific events that may have impacted the safety, integrity, or reliability of the
25 natural gas pipeline system. The IEP was developed in order for the Companies’ gas operations
26 to: formalize a robust root cause process; support the implementation of API RP 1173;
27 demonstrate the Plan-Do-Check-Act cycle; support the existing strong safety culture;
28 demonstrate safety benefits with increased transparency; and carry out system improvements.

⁵¹ *Id.* at 2-2.

⁵² Ex. SCG-250/SDG&E-252 (Buczowski/Geier).

1 The benefits of the IEP approach enable SoCalGas and SDG&E to know that when incidents
2 occur, we are investigating fully and completing the right process improvements that will reduce
3 or eliminate the opportunity for the incidents to occur again. The IEP also supports the
4 assessment of our compliance policies, programs, processes, and resultant activities to better
5 understand the health of our system and further demonstrates the commitment to enhancing
6 process safety elements. This will provide the Companies with data and information to learn
7 new insights to proactively find risk in pipelines before incidents happen.

8 The Companies' plan is to further enhance process safety with efforts such as the
9 enhancement of its MOC process for people, technology, procedures, and operations, which is
10 also part of the Companies' API RP 1173 implementation. The Companies will apply the MOC
11 process consistently for organizational changes so that areas not currently using it can be
12 prioritized under the implementation plan. The GSMS PMO is also developing a formalized
13 online web portal that will further support the MOC process. Additionally, the team will
14 continue its efforts on further promoting the Safety Observation and Reporting (SOAR) Tool,
15 which will help strengthen the Stakeholder Engagement tenet of API RP 1173. As mentioned in
16 the Safety Policy rebuttal testimony, the Companies support OSA's recommendation to establish
17 and focus on leading indicators of process safety through the means of the SOAR tool.⁵³ This
18 platform will allow employees to actively share experiences and learning opportunities within
19 the organization(s) to enable appropriate, high-quality follow up. The team will be responsible
20 for monitoring the tool in addition to reviewing the implementation of lessons learned, and
21 continuously seeking improvements.

22 These API RP 1173 enhancements to process safety are intended to build upon existing
23 process safety elements throughout the Companies' operations. While the Companies may not
24 directly discuss or mention the words "process safety" in direct testimony, the elements of
25 process safety are prevalent throughout my direct testimony, and throughout the Companies'
26 organizations, as further discussed by the Safety Policy rebuttal testimony. My direct testimony
27 supports the Companies' creation and issuance of policies/standards and trainings thereon, in
28 addition to the quality assurance and quality control activities, which measure the effectiveness
29 of these policies/standards. Other examples on the elements of process safety include, but are

⁵³ *See id.*

1 not limited to, Ms. Day’s direct testimony, Gas Distribution witness Gina Orozco-Mejia (Exhibit
2 SCG-04-R and Exhibit SDG&E-04), Gas Control and System Operations-Planning witness
3 Devin Zornizer (Exhibit SCG-13), Pipeline Integrity for Transmission and Distribution witness
4 Maria Martinez (Exhibit SCG-14 and SDG&E-14), Pipeline Safety Enhancement Plan (PSEP)
5 witness Rick Phillips (Exhibit SCG-15-R), Underground Storage witness Neil Navin (Exhibit
6 SCG-10-R), Customer Services - Field & Meter Reading witness Gwen Marelli (Exhibit SCG-
7 18-R and Exhibit SDG&E-17-R), Electric Distribution Capital witness Alan Colton (Exhibit
8 SDG&E-14-R), and Electric Distribution Operations and Maintenance witness William Speer
9 (Exhibit SDG&E-15-2R). This wide array of process safety discussions demonstrates how
10 SoCalGas and SDG&E further carry out measures that mitigate process safety hazards.

11 Equally important to API RP 1173’s strong focus on process safety is to enhance the
12 operational safety of pipeline systems. In response to a discovery request, the Companies
13 provided a spreadsheet of “the SMS-related activities requested in the 2019 GRC, including
14 efforts related to API 1173.”⁵⁴ These SMS-related activities show that the Companies’
15 implementation of API RP 1173 builds on the existing risk management policies and practices.
16 API RP 1173 encourages operators to use the results of their risk assessments to continue to
17 drive down the likelihood of asset-related safety incidents and events—this approach has been
18 adopted by SoCalGas and SDG&E in the RAMP and GRC filings. All of these SMS-related
19 activities are further examples on our commitment to process and operational safety.

20 **Safety Key Performance Indicators (KPIs) and Metrics**

21 OSA recommended KPIs to be structured to represent safety performance as opposed to a
22 straight count of financial spending. OSA also recommended the Companies to work with OSA
23 and its safety consultants to develop experimental metrics that could help the Companies’
24 transition.⁵⁵ As stated in my direct testimony, SoCalGas’ recognizes the importance of KPIs and
25 will continue developing and enhancing existing KPIs for various elements of API RP 1173,
26 where a combination of leading and lagging indicators will be utilized to monitor organizational

⁵⁴ OSA-SEU-003, Question 7a, attached as Appendix B. Some of the activities shown in that spreadsheet are listed as in process or planned, while others are new requests.

⁵⁵ Ex. OSA-1 (Contreras) at 3-14.

1 performance. As the detailed implementation plans are being developed, the Companies will
2 identify new appropriate KPI measures with the intent that these will be continually evaluated.

3 Further, OSA recommends that the Companies “develop metrics that address human and
4 organizational factors to assess the effectiveness of its PSMS.”⁵⁶ As sponsored in the direct
5 testimony of Ms. Day, the Companies “are also participating in a technical working group for
6 performance metrics as part of the S-MAP [Safety Model Assessment Proceeding] in which
7 preliminary risk metrics have been developed. The Companies’ are tracking and documenting
8 those metrics internally.”⁵⁷ Nonetheless, the Companies are open to collaborating with OSA and
9 its safety consultants to develop experimental metrics that could help the Companies’ maturity
10 with establishing a pipeline safety management system.

11 **Integration of RAMP in GRC**

12 OSA recommended API RP 1173 to be designated as RAMP and reported in the
13 Companies’ respective accountability reports required by the Commission in accordance with
14 D.14-12-025. OSA states that the Companies’ request related to API RP 1173 was not identified
15 as “as one of their ‘RAMP-post filing’ activities.”⁵⁸ OSA goes on claiming, “This omission puts
16 into question the Utilities’ true commitment to and understanding of API 1173, as does the
17 Utilities’ proposal to for the PSMS effort as a subset function of the ‘Gas Contractor Controls’
18 department which primarily deals with ‘construction contractor safety.’ This placement does not
19 recognize that a PSMS is a company-wide effort that is not focused on contractors, even if
20 contractors are part of the SMS.”⁵⁹ API RP 1173 was designated as a RAMP item in this GRC;
21 however, it was not labeled as RAMP-post filing. There are multiple ways in which to enter
22 adjustments into the Companies’ forecasting system used for GRCs. Rather than categorizing
23 the adjustment as “RAMP Post-Filing,” the API RP 1173 “post-filing” efforts were included with
24 an existing “RAMP Incremental” adjustment, thus adding to that adjustment rather than making

⁵⁶ Ex. OSA-1 (Contreras) at 3-13 to 3-14.

⁵⁷ Ex. SCG-02-R/SDG&E-02-R, Chapter 1 (Day) at DD-24.

⁵⁸ Ex. OSA-1 (Contreras) at 3-14.

⁵⁹ *Id.* at 3-14 to 3-15 (footnote omitted).

1 a separate entry, as shown in my workpapers.⁶⁰ In the RAMP workpaper for this entry, there was
2 no RAMP range, meaning the entry was added following the submission of the RAMP Report.⁶¹
3 Accordingly, the API RP 1173 efforts will be subject to an accountability report, consistent with
4 other identified RAMP activities. However, the inclusion of API RP 1173 efforts in the Gas
5 Contractor Controls workpaper should not be of concern to OSA. The Companies' present
6 GRCs on a cost center basis, which largely align with our organizational structure. Certain cost
7 centers, because they are in essence departments, can contain a large variety of work products
8 and functions. Similarly, due to how the Companies present GRCs, the API RP 1173 efforts
9 were assigned to the cost center/workpaper in which the employees perform the work.
10 Adjustments to the "Gas Contractor Controls" workpaper have been made to include API RP
11 1173 because the work performed within this workpaper is broader than "contractor"-related
12 functions (as incorrectly assumed by OSA). Thus, costs of API RP 1173 efforts have been
13 included in the appropriate cost centers.

14 **Electric Operations and Underground Storage as it Relates to SMS**

15 OSA recommends that "[t]he Utilities should develop a safety management system
16 (SMS) framework to address electric and gas storage assets/operations, and present its proposal
17 in the next GRC. The framework/s should leverage the API 1173 framework's emphasis on
18 safety culture."⁶² As communicated to OSA through discovery, "This SMS (API 1173) is
19 intended to cover Distribution, Transmission, Above Ground Storage, Customer Service and San
20 Diego Gas Operations. In addition, it should be noted that Underground Storage is implementing
21 API RP 1171 (Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs
22 and Aquifer Reservoirs),"⁶³ that "combines consensus best practices, regulations, and concepts
23 adapted from risk management and safety management systems."⁶⁴ Moreover, elements

⁶⁰ Ex. SCG-05-WP (Rivera) at 77-78.

⁶¹ *Id.* at 81.

⁶² Ex. OSA-1(Contreras) at 2-25.

⁶³ OSA-SEU-003, Question 2.b.ii.

⁶⁴ The American Petroleum Institute, et al., *Underground Natural Gas Storage: Integrity and Safe Operations* at 5 (July 6, 2016), available at <https://primis.phmsa.dot.gov/ung/docs/AGA%20White%20Paper%20-%20UNGS%20Integrity%20and%20Safe%20Ops%2020160706.pdf>.

1 developed as part of API RP 1173 would also be applicable to Underground Storage; for
2 example, the IEP and plans to further enhance the MOC process. OSA's recommendation
3 pertaining to underground storage and electric operations is addressed in the rebuttal testimony
4 of Neil Navin (Exhibit SCG-210) and Kenneth Deremer (Exhibit SDG&E-251), respectively.

5 **Natural Gas Safety Plan**

6 OSA proposes, as part of its safety assurance activities, that the Commission verify the
7 Companies' implementation of their Natural Gas Safety Plans before submittal of the next GRC
8 Application and that verification be done through an evaluation conducted by a multi-
9 disciplinary team comprised of OSA staff and Staff from SED's Gas Safety and Reliability
10 Branch (GSRB) and Risk Assessment and Safety Advisory (RASA) groups. Alternatively, OSA
11 proposes that verification could be performed by a third-party at the direction and with potential
12 participation of Commission staff. Finally, OSA notes that the evaluation should focus on
13 activities that are not part of SED's regular audits, but that play a critical role in the management
14 of safety, such as incident investigation procedures.⁶⁵ The Companies are not opposed to
15 working with the Commission regarding their safety plans. As OSA acknowledges, SED
16 regularly audits the Companies. But, OSA suggests an elaborate multi-disciplinary or third-party
17 review without any support to show that the Companies are not meeting their commitment to
18 safety.⁶⁶ As explained above, the Companies have already taken action towards API RP 1173
19 implementation. However, if the Commission were inclined to agree with OSA, an avenue for
20 review currently exists. SED has had the ability to evaluate the Companies' Natural Gas Safety
21 Plans, thoroughly reviewed the initial filing, and has received the annual updates since 2012.
22 There is nothing that prevents SED from reviewing these plans and our new safety-related
23 initiatives as part of its ongoing audits, and raising any findings as part of the audit process. This
24 seems a more reasonable approach than OSA's recommendation, which is not supported by any
25 facts.

⁶⁵ Ex. OSA-1 (Contreras) at 2-19.

⁶⁶ *Id.* at 2-18 to 2-19.

1 **Annual Leadership Meetings and Third-Party Audits**

2 OSA suggested the Companies’ “leadership should, at a minimum, meet annually with
3 OSA and SED staff to present their progress and continued implementation plans of API RP
4 1173 during the upcoming rate case cycle.”⁶⁷ Also, they suggested that a third-party audit be
5 performed for the implementation of API RP 1173 before the submittal of the next GRC
6 application and to share the results with the OSA,⁶⁸ since “OSA cannot support this initiative
7 without additional transparency on the effort and assurance of its outcome.”⁶⁹ We do not oppose
8 meeting annually with OSA and SED to present progress on API RP 1173. The Companies will
9 continue to perform internal assessments to measure the effectiveness of our implementation
10 plan and areas of opportunity. While the effective execution of their API RP 1173
11 implementation phase must be the Companies’ high priority focus over the GRC cycle,
12 SoCalGas and SDG&E are not opposed to evaluating OSA’s proposed voluntary API third-party
13 audit program⁷⁰ and continue meeting with SED presenting their safety measures.

14 Furthermore, the Companies continually meet with SED to discuss programs, processes,
15 and improvements towards safety, and would welcome OSA to participate in these discussions
16 and any specific discussions on the progress of implementation of API RP 1173. Additionally,
17 OSA suggested to conduct a third-party audit for the implementation of API RP 1173 before the
18 submittal of the next GRC application and to share the results with the OSA.⁷¹ At this time, the
19 Companies do not see the urgency in procuring a third party to audit the implementation of the
20 recommended practice as we feel we are already doing so by being in line with the Pipeline SMS
21 Roadmap,⁷² but plan to evaluate whether a voluntary API third-party audit is warranted upon
22 achieving conformance and in the phase of continuous improvement. The Pipeline SMS
23 Roadmap includes an implementation tool which summarizes the seventy-one (71) requirements

⁶⁷ *Id.* at 3-4.

⁶⁸ *Id.*

⁶⁹ *Id.* at 3-12.

⁷⁰ *Id.* at 3-4.

⁷¹ *Id.*

⁷² Pipeline SMS Tool Roadmap, *available at* http://pipelinesms.org/wp-content/uploads/2018/04/Pipeline-SMS-Maturity-Model_Part2.jpg.

1 of API RP 1173 in a question form. Once completed, the tool evaluates and summarizes the
2 operator’s implementation status by question, element, and overall. The tool helps operators
3 track development of program to implementation and the subsequent evaluation on the
4 effectiveness of PSMS. Once most of the activities are developed and implemented, GSMS will
5 proceed with assessing the progress of each activity and consistent processes, and sustaining and
6 measuring performance improvements. This will support the Plan–Do–Check–Act cycle and
7 enhance the safety culture of SoCalGas and SDG&E.

8 As stated above, although the Companies’ plan to implement API RP 1173 is still in
9 progress, the ESC was briefed and has approved the approach, which will be utilized by the tenet
10 champions who have the responsibility of developing the activities in support of the
11 implementation of API RP 1173. It is the Companies’ intent to further prioritize the efforts of
12 API RP 1173 as the implementation details are developed and refined. In 2020, it is our
13 objective to conduct another maturity assessment, which will determine the effectiveness of
14 implementation and provide areas of opportunity for continuous improvement.

15 The Companies respectfully requests that the Commission adopt its TY 2019 forecasts of
16 \$3.83 million based on the recommendations above and OSA’s recommendation that the
17 Commission require the consideration of Safety Management Systems.⁷³

18 **B. Shared Services O&M**

SHARED O&M - Constant 2016 (\$000)			
	Base Year 2016	Test Year 2019	Change
SoCalGas	\$8,193	\$17,306	\$9,113
ORA	\$8,193	\$11,393	\$3,200

19
20 **1. Disputed Cost – Gas System Integrity Shared O&M**

21 **a. ORA**

22 At issue with ORA’s forecasting methodology is the use of the 2016 adjusted-recorded
23 value as representative of the resources that Gas System Integrity needs, not only to do its work,
24 but to also conduct the incremental activities that ORA supports through its own recommended

⁷³ A.15-05-002, The Office of the Safety Advocate’s Comments on the Settlement Agreement of Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, San Diego Gas and Electric Company, The Office of Ratepayer Advocates, The Utility Reform Network, and Energy Producers and Users Coalition and Indicated Shippers (filed May 1, 2015) at 2.

1 amounts. Please see the section above, Non-Shared Services O&M, for further explanation of
2 ORA's inconsistent forecasting methodology and Appendix A for SoCalGas' recalculation
3 showing ORA's potential error in computing SoCalGas' funding increases.

4 **2. Disputed Cost – Vice President System Integrity and Asset**
5 **Management (Cost Center 2200-0225)**

6 **a. ORA**

7 Within the Gas System Integrity are the leadership and organization governance activities
8 for cost center 2200-0225, which represent the Vice President's activities. The Vice President
9 provides the leadership, guidance, and policies to direct the Gas System Integrity organization,
10 which benefits both the Companies. For a detailed description of cost and underlying activities
11 please refer to my revised direct testimony.⁷⁴

12 SoCalGas used the five-year average method to develop the cost for labor and non-labor
13 expenses for this workgroup. The five-year average methodology SoCalGas chose for its base
14 forecast shows both the labor and non-labor expenses for this cost centers have been consistent
15 over recorded historical data. This fluctuation is expected to continue, and for future labor and
16 non-labor expenses.

17 ORA opposes SoCalGas' use of the five-year average to forecast expenditures in this cost
18 center and recommends using the 2016 adjusted-recorded amount, for a reduction of \$267,000.
19 ORA's dismissal of the five-year historical average used by SoCalGas would effectively
20 disallow funding of this workgroup, as well as with the implementation of API RP 1173. The
21 Vice President of Gas Engineering and System Integrity, formally known as System Integrity
22 and Asset Management, provides leadership and guidance through the Leadership and
23 Management Commitment tenet of AP RP 1173. This work group is essential to improved
24 safety and a positive safety culture. While establishing policies is essential, it is the commitment
25 of management in implementing the processes to meet the objectives of the Gas Engineering and
26 System Integrity organization.

27 As such, SoCalGas respectfully requests that the Commission adopt its TY 2019
28 forecasts of \$629,000 and reject ORA's proposed funding proposal.

⁷⁴ Ex. SCG-05-R (Rivera) at OR-48.

1 **3. Disputed Cost – Pipeline Safety and Compliance Manager (Cost**
2 **Center 2200-2473)**

3 **a. ORA**

4 SoCalGas used the base year method to develop the cost for labor and non-labor expenses
5 for this workgroup. In addition, SoCalGas included incremental adjustments to the base year to
6 represent the expense requirements anticipated in TY 2019. As discussed above in the Pipeline
7 Safety and Compliance section of the Non-Shared O&M section, the key cost driver behind this
8 forecast is SoCalGas’ ability to enhance its Pipeline Safety and Compliance group, comply with
9 all state and federal pipeline safety regulations, and support the implementation of API RP
10 1173⁷⁵ in the safe operation of our gas system.

11 The Commission should reject ORA’s proposed 2016 adjusted-recorded forecast for the
12 Pipeline Safety and Compliance Manager due to the same justifications argued above in the Non-
13 Shared Pipeline Safety and Compliance group that this manager oversees.

14 **4. Disputed Cost – Operator Qualification (Cost Center 2200-2344)**

15 **a. ORA**

16 Operator Qualification are utility shared service activities and associated O&M expenses
17 incurred to manage the implementation and continual enhancements of the PHMSA mandated
18 Operator Qualification Program for the qualification of pipeline personnel. For a detailed
19 description of cost and underlying activities, please refer to my revised direct testimony.⁷⁶

20 SoCalGas used the base year method to develop the cost for labor and non-labor expenses
21 for this workgroup. As new employees are hired to cover incremental work or to replace
22 employees leaving the company or moving to other positions, the need for Operator
23 Qualification is expected to increase. In addition, SoCalGas included incremental adjustments to
24 the base year to represent the expense requirements anticipated in TY 2019. The key cost driver
25 behind this forecast is GO 112-F, which will require additional work in the operator qualification
26 area.

⁷⁵ Ex. SCG-05-R (Rivera) at OR-44.

⁷⁶ *Id.* at OR-52.

1 ORA supports the incremental increases requested from 2016-2019.⁷⁷ However, ORA’s
2 base forecasting methodology of 2016 adjusted-recorded should have resulted in the same values
3 as SoCalGas’ selected base year forecast methodology. While ORA indicates in its testimony
4 that it reflected the base year plus incremental increases, its forecast resulted in a lower number
5 than SoCalGas’ base year plus incremental increases.⁷⁸ Please refer to Appendix A for a
6 depiction of the differences in recommendations using the same methodology.

7 The Commission should reject ORA’s proposed 2016 adjusted-recorded forecast because
8 it is incomplete in its inaccurate and should adopt the base year forecast selected by SoCalGas.

9 **5. Disputed Cost – Shared Public Awareness Activities (Cost Center**
10 **2200-2417)**

11 **a. ORA**

12 The activities associated with the shared service component of Public Awareness include
13 the central management of the Companies’ Public Awareness plans. For a detailed description
14 of cost and underlying activities please refer to my revised direct testimony.⁷⁹

15 SoCalGas used the base year method to develop the cost for labor and non-labor expenses
16 for this workgroup. In addition, SoCalGas included incremental adjustments to the base year to
17 represent the expense requirements anticipated in TY 2019. As discussed above in the Damage
18 Prevention Public Awareness section of the Non-Shared O&M section, public awareness is one
19 of the most important RAMP mitigation activities supporting the risk of Catastrophic Damage
20 Involving Third-Party Dig-Ins.

21 ORA supports the incremental increases requested from 2016-2019.⁸⁰ However, ORA’s
22 base forecasting methodology of 2016 adjusted-recorded should have resulted in the same values
23 as SoCalGas’ selected base year forecast methodology. While ORA indicates in its testimony
24 that it reflected the base year plus incremental increases, its forecast resulted in a lower number

⁷⁷ Ex. ORA-12 (Enyinwa) at 9-10.

⁷⁸ *Id.*

⁷⁹ Ex. SCG-05-R (Rivera) at OR-55.

⁸⁰ Ex. ORA-12 (Enyinwa) at 9-10.

1 than SoCalGas' base year plus incremental increases.⁸¹ Please refer to Appendix A for a
2 depiction of the differences in recommendations using the same methodology.

3 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast as
4 inaccurate and due to the same justifications argued above in the non-shared Damage Prevention
5 Public Awareness group.

6 **6. Disputed Cost – Business Process ESS Implementation and ESS**
7 **Mobile Solutions (Cost Center 2200-0302)**

8 **a. ORA**

9 The activities associated with this cost center include the labor and expenses associated
10 with implementation of systems to support business processes associated with Material
11 Traceability, Materials Management, and development of departmental websites. For a detailed
12 description of cost and underlying activities please refer to my revised direct testimony.⁸²

13 SoCalGas used a five-year average forecasting method to factor in periods of high levels
14 of work, as well as years with lower volumes of work for this workgroup. This approach allows
15 SoCalGas to capture historical spending under a variety of conditions that reflect the historical
16 fluctuations in labor and non-labor expenditures associated with this workgroup, as seen in table
17 below.

Years	Adjusted-Recorded				
	2012	2013	2014	2015	2016
Labor	182	140	86	265	184
Non-Labor	59	7	3	30	5
NSE	0	0	0	0	0
Total	240	147	89	295	189
FTE	2.3	1.6	1.3	3.4	1.9

18
19 SoCalGas included incremental adjustments to the five-year average to represent the higher
20 expense requirements anticipated in TY 2019, as SoCalGas anticipates an increase in personnel
21 and non-labor costs due to (1) implementation of material traceability process improvements and
22 deployment of additional software modules to enhance system capabilities for managing,
23 tracking and tracing high pressure steel material; and (2) rebuild departmental websites in a

⁸¹ *Id.*

⁸² Ex. SCG-05-R (Rivera) at OR-59 to 60.

1 modern and more capable platform to improve knowledge sharing and access to relevant
2 company departmental content.

3 ORA opposes SoCalGas' use of the five-year average to forecast expenditures in
4 Business Process ESS Implementation and ESS Mobile Solutions and recommends using the
5 2016 adjusted-recorded amount. ORA accepts and recommended "for both Non-Shared and
6 Shared operations, [that] SCG's requested incremental increase from 2016 to 2019 be
7 allowed."⁸³ However, ORA proposes a reduction of \$110,000 to the forecast of this work
8 category. SoCalGas used a five-year (2012 – 2016) historical average, whereas ORA
9 recommends using the 2016 adjusted-recorded amount plus incremental, in which the amount
10 should have been \$299,000. Please see Appendix A for SoCalGas' recalculation showing
11 ORA's potential error in its computation of SoCalGas' funding increase.

12 ORA's methodology is selective, arbitrary, and inaccurate, in which they do not explain
13 why using the 2016 adjusted-recorded amount produces a more reasonable or reliable forecast
14 over SoCalGas' five-year average that shows the historical fluctuation in this work category.
15 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast and should
16 adopt SoCalGas' five-year average (2012-2016) for its base forecast.

17 **7. Disputed Cost – Work Management and Databases (Cost Center**
18 **2200-0306)**

19 **a. ORA**

20 Activities associated with this cost center include the support of Work Management
21 Systems for Measurement and Regulation (M&R), System Protection Specialists (SPS) and
22 Work Order Tracking (WOT) applications, AutoSol Enterprise System (AES), OSI/PI pressure
23 alarming and monitoring system, Document and Record Management System, and the
24 MyProjects enterprise system. For a detailed description of cost and underlying activities please
25 refer to my revised direct testimony.⁸⁴

26 Instead of a five-year historical linear trend for this work category, ORA recommends
27 using the 2016 adjusted-recorded amount, for a reduction of \$770,000, stating the 2016 adjusted-

⁸³ Ex. ORA-12 (Enyinwa) at 9.

⁸⁴ Ex. SCG-05-R (Rivera) at OR-63 to 64.

1 recorded data is “generally consistent with the data from 2012 to 2015.”⁸⁵ ORA’s dismissal of
 2 the five-year historical linear trend used by SoCalGas would effectively disallow funding of
 3 embedded costs in SoCalGas’ forecasts addressing RAMP-related mitigations. For example,
 4 SoCalGas’ proposed mitigation plan in the Records Management risk chapter of the RAMP
 5 report will enable improved pipeline asset management, safety, and integrity modeling and will
 6 better enable the ability to meet current and future regulatory and reporting requirements. To
 7 address new regulatory requirements, improve pipeline safety, and operations efficiency, the
 8 work management and databases group implemented several additional systems such as OSI/PI
 9 for monitoring Electronic Pressure Monitoring and Alarming, Maximo Mobile, work
 10 management system for miscellaneous GIS updates (leakage), new Mobile Pipe Condition and
 11 Maintenance Report (ePCMR), as well as enhancing existing systems such as MyProjects, Work
 12 Order Tracking (WOT), and Pipeline Document Management System (PDMS). This is in
 13 addition to revamping the entire Records and Document Management System using OpenText
 14 platform.

15 SoCalGas’ five-year historical linear forecasts represent SoCalGas’ best evaluation of the
 16 total funding requirement for Work Management and Database. While individual years may be
 17 higher or lower than the 2016 adjusted-recorded amount, the total spent across the five historical
 18 years (2012-2016) is representative of what SoCalGas believes it needs in order to maintain
 19 system reliability and safety, as is shown in the table below.

Years	Adjusted-Recorded				
	2012	2013	2014	2015	2016
Labor	529	567	516	647	771
Non-Labor	504	532	874	281	221
NSE	0	0	0	0	0
Total	1,033	1,099	1,389	928	991
FTE	6.2	6.7	6.0	7.5	8.8

20
 21 Gas System Integrity believes the forecast is the appropriate level to provide the appropriate
 22 upgrades and enhancements for the work that is anticipated.

23 ORA’s treatment of this area is inconsistent with its forecasts for Gas System Integrity’s
 24 Asset Management Non-Shared category, as the 2016 adjusted-recorded amount was also used

⁸⁵ Ex. ORA-12 (Enyinwa) at 9.

1 and incremental increases from 2016 to 2019 were allowed.⁸⁶ However, ORA recommends
 2 SoCalGas proposed request of \$2.503 million for Asset Management for the Non-Shared O&M
 3 expenses. ORA’s selective treatment in its forecast methodology for this area provides no
 4 explanation for why it treated Non-Shared Asset Management differently than the Asset
 5 Management categories for the shared cost centers.

6 The Commission should reject ORA’s proposed 2016 adjusted-recorded forecast because
 7 it is incomplete in its analysis and inadequate to fund the anticipated growth in work to perform
 8 these safety, compliance, and risk mitigation activities and should adopt SoCalGas’ five-year
 9 linear trend (2012-2016) for its base forecast.

10 **8. Disputed Cost – Contract and Maintenance (Cost Center 2200-0308)**

11 **a. ORA**

12 This cost center accounts for the labor and non-labor expenses associated with software
 13 licenses and maintenance contracts for Operations Technology. For a detailed description of cost
 14 and underlying activities please refer to my revised direct testimony.⁸⁷

15 ORA opposes SoCalGas’ use of the five-year average to forecast expenditures in this cost
 16 center and instead recommends using the 2016 adjusted-recorded amount, for a reduction of
 17 \$93,000. SoCalGas’ five-year average is more appropriate to capture five years of historical
 18 spending as well as typical fluctuations from year to year, as seen in the table below.

Years	Adjusted-Recorded				
	2012	2013	2014	2015	2016
Labor	481	-17	0	0	0
Non-Labor	329	435	389	336	843
NSE	0	0	0	0	0
Total	810	418	389	336	843
FTE	5.8	-0.2	0.0	0.0	0.0

19 A five-year average produces a forecast of \$559,000, which is less than the 2016 adjusted-
 20 recorded amount of \$843,000. ORA appears to recommend a lower forecast amount than what a
 21 2016 adjusted-recorded methodology would produce. As discussed previously, ORA also does
 22 not explain why using a 2016 adjusted-recorded amount produces a more reasonable or reliable
 23 forecast than a five-year average.
 24

⁸⁶ *Id.*

⁸⁷ Ex. SCG-05-R (Rivera) at OR-64.

1 As such, SoCalGas respectfully requests that the Commission adopt its TY 2019
2 forecasts of \$559,000 for this cost center.

3 **9. Disputed Cost – Enterprise Geographic Information System (eGIS)**
4 **(Cost Center 2200-2376)**

5 **a. ORA**

6 This cost center accounts for the labor and non-labor expenses associated with the
7 synchronization of the GIS system. This includes the synchronization of eGIS and High-
8 Pressure Pipeline Database (HPPD) data into a single GIS data model. For a detailed description
9 of cost and underlying activities please refer to my revised direct testimony.⁸⁸

10 SoCalGas selected the five-year linear trend for Enterprise Geographic Information
11 System (eGIS) due to observations during the four years of 2012-2015. Based on these
12 observations, shown in the table below, SoCalGas believes the use of a five-year trend more
13 accurately reflects current and future activity. The table below demonstrates approximately a 40%
14 growth was experienced in labor from 2012-2015.

Years	Adjusted-Recorded				
	2012	2013	2014	2015	2016
Labor	523	927	1,136	1,423	1,079
Non-Labor	338	135	237	6	39
NSE	0	0	0	0	0
Total	862	1,062	1,373	1,429	1,118
FTE	6.0	11.1	13.6	16.7	12.5

15
16 ORA recommends a \$1.435 million reduction to SoCalGas' forecast, by using the 2016
17 adjusted-recorded amount instead of my five-year linear trend methodology. The 2016 adjusted-
18 recorded amount does not account for the increase in work anticipated over the forecast period,
19 as eGIS activities are planned to increase due to upward pressures and efforts related to AVEVA
20 3D modeling of storage pipelines, Renewable Natural Gas, and best practices for Records
21 Management Operational Compliance & Oversight. Also, using the 2016 adjusted-recorded
22 amount does not account for the change in workforce due to retirements and employee
23 movement as a result of promotion and transfers.

24 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast because
25 historical data and other facts that support the use of a linear trend and account for growth and

⁸⁸ *Id.* at OR-65 to 66.

1 other drivers that were overlooked by ORA, as well as the inconsistencies of the shared Asset
2 Management categories discussed above in the Work Management and Databases section.

3 **10. Disputed Cost – Records Management and Programs (Cost Center**
4 **2200-7242)**

5 **a. ORA**

6 This cost center accounts for the labor and non-labor expenses associated with centralized
7 records management and programs organization that allows SoCalGas to continue executing on
8 its proposal of an Enterprise Asset Management (EAM) system and the modernization of records
9 while additionally identifying other potential opportunities to improve its records management
10 program and oversight on day-to-day activities. For a detailed description of cost and underlying
11 activities please refer to my revised direct testimony.⁸⁹

12 SoCalGas used the zero-based method to develop the cost for labor and non-labor
13 expenses for this workgroup to forecast the requirements to develop and implement this new
14 organization. A zero-based methodology was selected due to the Records Management and
15 Programs department being newly created in late 2016/early 2017, which has no past cost history
16 for the newly inaugurated functions. This new group will be the program structure that provides
17 centralized operational oversight for records management processes in specific operational areas
18 and would provide dedicated full-time records management over the daily tasks and activities
19 performed.

20 ORA opposes SoCalGas' use of the zero-based method to forecast expenditures in
21 Records Management and recommends using the 2016 adjusted-recorded amount, for a reduction
22 of \$1.7 million. Please see Appendix A for SoCalGas' recalculation showing ORA's potential
23 error in its computation of SoCalGas' funding increase. ORA's dismissal of the zero-based
24 methodology disregards the fact that this cost center has an insufficient history upon which to
25 base a forecast and would effectively disallow funding of embedded costs in SoCalGas' forecasts
26 addressing RAMP-related mitigations related to the Records Management risk as well as the
27 Documentation and Record Keeping tenet of API RP 1173. For example, this workgroup will
28 maintain a procedure for the identification, distribution, and control of documents, which is
29 consistent with its implementation of API RP 1173. In addition, Records Management will also

⁸⁹ *Id.* at OR-67 to 68.

1 maintain a procedure to identify the controls and responsibilities needed for the identification,
2 collection, storage, protection, retrieval, retention time, and disposition of records.

3 The Commission should reject ORA's proposed 2016 adjusted-recorded forecast because
4 it is incomplete in its analysis, incorrectly calculated, and inadequate to fund the anticipated
5 growth in work to perform these safety, compliance, and risk mitigation activities and should
6 adopt SoCalGas' zero-based methodology for its forecast. Instead, the Commission should
7 approve SoCalGas' funding request.

8 **IV. CONCLUSION**

9 To summarize, SoCalGas respectfully request the Commission adopt a TY 2019 forecast of
10 \$32,904,000 for Gas System Integrity O&M expenses, which is composed of \$15,598,000 for non-
11 shared service activities and \$17,306,000 for shared service activities.

12 My revised direct testimony, workpapers and SoCalGas' responses to numerous data requests
13 provide substantial justification for the Commission to authorize SoCalGas' Gas System Integrity
14 O&M request in full as presented in my direct testimony and corresponding workpapers. As
15 described in this rebuttal testimony, the proposals of the intervenors to reduce funding are based on
16 inappropriate forecasting methodology and/or discounting of information presented by SoCalGas.

17 It is important to note the following overall observations:

- 18 • ORA's forecasts include some calculation errors and data omissions.
- 19 • ORA's forecasts tended to be based on 2016 spending, which was not a good
20 indicator of future expectations or newly created programs.
- 21 • While CUE proposes increases to SoCalGas' forecast of training, SoCalGas does
22 not agree with the one-way balance account.

23 SoCalGas' forecasts reflect sound judgment and represent the impact from higher regulatory
24 expectations to continuously enhance the safety of the SoCalGas natural gas system
25 and provide safe, clean, and reliable natural gas service at reasonable rates. The Commission
26 should adopt the forecasted expenditures discussed in this testimony because they are prudent
27 and reasonable estimates of future requirements.

28 This concludes my prepared rebuttal testimony.

APPENDIX A

Recalculation of ORA 2016 Adjusted Recorded

Description (a)	ORA Recommended (b)	SCG Proposed (c)	Amount SCG>ORA (d=c-b)	SCG 2016 Adjusted Recorded (e)	SCG Incremental Adjustment TY 2019 (f)	SCG 2016 Adjusted Recorded plus Incrementals (g=e+f)	SCG Forecast Method Used
Non-Shared							
2SI001.000- Gas Operations Staff & Training	\$2,387	\$4,734	\$2,347	\$1,072	\$3,637	\$4,709	5-Year Linear
2SI002.000- Pipeline Safety & Compliance	\$1,408	\$2,890	\$1,482	\$699	\$2,191	\$2,890	Base Year Recorded
2SI003.000- Damage Prevention	\$642	\$1,641	\$999	\$398	\$1,000	\$1,398	5-Year Average
2SI004.000- Asset Management	\$2,503	\$2,503	\$0	\$2,086	\$312	\$2,398	5-Year Average
2SI005.000- Gas Contractor Controls	\$521	\$3,830	\$3,309	\$520	\$3,830	\$4,350	Zero-Based
Total Non-Shared	\$7,461	\$15,598	\$8,137	\$4,775	\$10,970	\$15,745	53% Gap Difference

Description (a)	ORA Recommended (b)	SCG Proposed (c)	Amount SCG>ORA (d=c-b)	SCG 2016 Adjusted Recorded (e)	SCG Incremental Adjustment TY 2019 (f)	SCG 2016 Adjusted Recorded plus Incrementals (g=e+f)	SCG Forecast Method Used
Shared							
2200-0225.000- USS - VP GAS SYSTEM INTEGRITY	\$362	\$629	\$267	\$362		\$362	5-Year Average
2200-0302.000- BUSINESS PROCESS ESS IMPLEMENTATION AND ESS MOBILE SOLUTIONS	\$192	\$302	\$110	\$189	\$110	\$299	5-Year Average
2200-0303.000- APPLICATIONS	\$478	\$478	\$0	\$230		\$230	5-Year Average
2200-0305.000- ESS PRODUCTION SUPPORT	\$666	\$666	\$0	\$271	\$100	\$371	5-Year Average
2200-0306.000- WRK MGMT & DATABASES	\$1,088	\$1,858	\$770	\$991	\$488	\$1,479	5-Year Average/ Linear
2200-0308.000- CONTRACT & MAINTENCANCE	\$466	\$559	\$93	\$843		\$843	5-Year Average
2200-2023.000- FIELD TECHNOLOGIES	\$415	\$415	\$0	\$211	\$105	\$316	5-Year Average
2200-2144.000- GAS SYSTEM INTEGRITY STAFF &PROGRAMS	\$320	\$320	\$0	\$274	\$25	\$299	5-Year Average

2200-2344.000- OPERATOR QUALIFICATION	\$1,158	\$1,952	\$794	\$1,158	\$794	\$1,952	Base Year Recorded
2200-2345.000- PIPELINE SYSTEM CONSTRUCTION POLICY	\$1,846	\$1,846	\$0	\$699	\$1,115	\$1,814	5-Year Average
2200-2360.000- QUALITY & RISK	\$1,215	\$1,215	\$0	\$900	\$315	\$1,215	Base Year Recorded
2200-2376.000- ENTERPRISE GEOGRAPHIC INFORMATION SYSTEM (EGIS)	\$1,118	\$2,553	\$1,435	\$1,118	\$580	\$1,698	5-Year Average/ Linear
2200-2417.000- SHARED PUBLIC AWARNESS ACTIVITIES	\$117	\$537	\$420	\$117	\$420	\$537	Base Year Recorded
2200-2473.000- PIPELINE SAFETY & COMPLIANCE MANAGER	\$536	\$853	\$317	\$535	\$318	\$853	Base Year Recorded
2200-2551.000- PIPELINE SAFETY OVERSIGHT	\$573	\$573	\$0	\$295	\$278	\$573	Base Year Recorded
2200-2361.000- Records Management	\$850	\$2,550	\$1,700		\$2,550	\$2,550	Zero- Based
Total Shared	\$11,400	\$17,307	\$5,907	\$8,193	\$7,198	\$15,391	26% Gap Difference
Total Non- Shared/Shared	\$18,861					\$31,136	39% Gap Difference

APPENDIX B Data Request

Excerpt of OSA-SEU-003, Question 2

**Figure Demonstrating Gas Safety Management System Integration, Excerpt of Attachment
to OSA-SEU-003, Question 2.b.iii**

OSA-SEU-003, Question 7

OSA-SEU DATA REQUEST-003
SOCALGAS- SDG&E 2019 GRC – A.17-11-007/8
DATE RECEIVED: MARCH 15, 2018
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2. OSA understood that there are two safety management systems (SMS's) being proposed for development and implementation in this rate case: 1- for the gas lines of businesses conforming to API 1173 for both SDG&E and SoCalGas; and 2- for the aviation component of SDG&E's electric operations. At this time, no enterprise-wide safety management system is proposed. Please:

Utilities Response 2:

As reflected in the testimony of J. Bret Lane and Caroline Winn, SoCalGas and SDG&E have been focused on public, contractor, employee and asset safety for many years.¹ In mid 2015, the American Petroleum Institute released its Recommended Practice 1173 *Public Safety Management Systems* (API 1173). Similarly, the International Standards Organization (ISO) released its standards on Asset and Risk Management. Diana Day's testimony² notes at page 26 and 27 "Specifically, SoCalGas and SDG&E plan to implement API 1173 Public Safety Management System and ISO 55000 Asset Management standards, respectively." This preamble to subpart 2 of this response provides information on both the implementation of API 1173 by gas operations at SoCalGas and SDG&E, and ISO 55000 by electric operations at SDG&E.

API 1173 for Gas Operations

In 2017, SoCalGas decided to pursue the implementation of American Petroleum Institute's Recommended Practice 1173 (API 1173) and use it as a basis of establishing a safety management system within the Company. A Director (Gas Systems Integrity and Programs) was identified in the organization to take on this role.

API 1173 was released in July 2015 following the Marshall Michigan pipeline incident in 2012. The Pipeline Hazardous Materials and Safety Administration (PHMSA) took the lead and responsibility for working with industry and other groups, to effectively respond to the National Transportation Safety Board's (NTSB) recommendations following the incident. The recommended practice builds upon a range of other standards and approaches that have been adopted widely, such as PAS-55, API 1160, ASME B31.8S, ISO 55000, ISO 31000 etc. API 1173 combines the key components of these standards to form a recommended practice that is specific to pipeline operators. The overall "Plan-Do-Check-Act" (PCDA) structure of API 1173 is shown below.

¹ A.17-10-007/008, Exhibits SCG-01-R, SDG&E-01.

² A.17-10-007/008, Exhibit SCG-02-R/SDG&E-02-R, Chapter 1.

OSA-SEU DATA REQUEST-003
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Utilities Response 2 - continued



As shown in the diagram, there are 10 tenets overall within API 1173. Each tenet is described from a perspective of what a safety management system looks like—it does not describe how an operator can accomplish implementing this system. The decision to move towards implementing API 1173 was based on the focus it provided for pipeline operators and the use of a continuous-improvement based system, i.e., Plan-Do-Check-Act. SoCalGas and the gas operations of SDG&E are committed to implementing API 1173 by 2019. See the Revised SoCalGas Direct Testimony of Omar Rivera (Gas System Integrity), Exhibit SCG-05-0R, at pages 44-45 for a discussion of implementation of a Pipeline Safety Management System pursuant to API 1173, and the 10 tenets.

As described in response to Questions 1a-d, OSA Data Request-004, Gas Operations' leadership recognizes that API 1173 has a strong emphasis on safety and safety culture. This emphasis and integration into our business is further detailed in responses to OSA-SEU Data Request-002 regarding our safety governance framework, other responses in this OSA-SEU Data Request-003 set regarding safety management system-related activities, as well as SoCalGas and SDG&E's Risk Assessment Mitigation Phase (RAMP) Reports and General Rate Case (GRC) testimonies. All Gas Operations witnesses have dedicated sections describing their organization's safety culture and RAMP risk-informed process, safety-related prioritization, and continuous

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Utilities Response 2 - continued

improvement approach. The various tenets of API 1173 encourage an integrated approach to public, contractor and employee safety. For example, there is emphasis within API 1173 on the provision of safety-related training (Competence, Awareness and Training tenet), a senior leadership commitment to safety (Leadership and Management Commitment tenet), communication with internal and external stakeholders (Stakeholder Engagement tenet). As these tenets are integrated, they provide a structure that encourages safe operations and a learning culture with safety at the core.

Equally important is the focus API 1173 provides to improve the safety of the pipeline systems. Understanding, preventing and mitigating pipeline risk is the way operators are expected to meet this goal of improving pipeline-related safety measures. Gas Operations' leadership believes implementing API 1173 builds on the existing risk management policies and practices. A prerequisite to understanding and assessing the level of risk of potential incidents and events on a pipeline system is a robust understanding of system knowledge based on reliable records such as the location, condition and operating parameters of the pipelines. API 1173 encourages operators to use the results of these risk assessments to continue to drive down the likelihood of asset-related safety incidents and events – this approach has been adopted by Gas Operations as part of the development of Operating Unit Risk Registries (see Diana Day's testimony pg 26.), as well as SoCalGas and SDG&E's RAMP Reports and GRC testimonies by various Gas Operations witnesses related to asset risks, such as our Integrity Management Programs (e.g., TIMP, DIMP, and SIMP) and Pipeline Safety Enhancement Plan (PSEP).³

ISO 55000 Electric Operations

In 2008, 50 organizations from 15 industry sectors in 10 countries worked together to release the latest update to PAS 55 (Publicly Available Specification 55), known as PAS 55: 2008. It contained two parts: (1) PAS 55-1: Specification for the Optimized Management of Physical Assets, and (2) PAS 55-2: Guidelines for the Application of PAS 55-1.

The new update of PAS 55 provided clear definitions and a 28-point requirements specification for establishing and verifying an aligned, risk-informed, and whole-life management system for all types of physical assets.

In late July 2009, BSI (British Standards Institute), supported by Institute of Asset Management (IAM), submitted a proposal to form a "Project Committee" to develop an International Standard. This ISO Standard would be based upon the PAS 55, and include input from other industries, academia and practitioners, worldwide.

In January 2014, under the umbrella of the International Organization for Standardization, the ISO 55000 family of standards for asset management was published. As shown in the diagram

³ A.17-10-007/008, Exhibits SCG-1; SCG -02-R/SDG&E -02-R, Chapter 1; SCG-10-R; SCG-15-R and SDG&E-11.

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below there are 24 different components to ISO 55000. These are arranged, similarly to API 1173, as part of a plan-do-check-act system.



In 2017 SDG&E Electric Operations decided to begin implementation of ISO 55000 for electric assets. SDG&E leadership believes the implementation of ISO 55000 will enhance safety and optimize performance of electric assets, while balancing asset risk and health.

There are many benefits of applying ISO 55000 within an organization. The factors that are important to us are three-fold. First, by utilizing this standard, the Company will be able to place the safe and effective management of our physical assets at the heart of what we do. Second, the discipline of following a proven benchmark will lead to greater internal consistency and transparency across asset groups that will lead to repeatable business, integrated asset data and asset-based processes. Finally, the framework promotes significant alignment across the organization and build a 'line of sight' to ensure employees at all levels fully understand their role in supporting effective management of asset health.

Comparison of API 1173 and ISO 55000

As implied above, there are many similarities between API 1173 and ISO 55000. Some of these are listed below:

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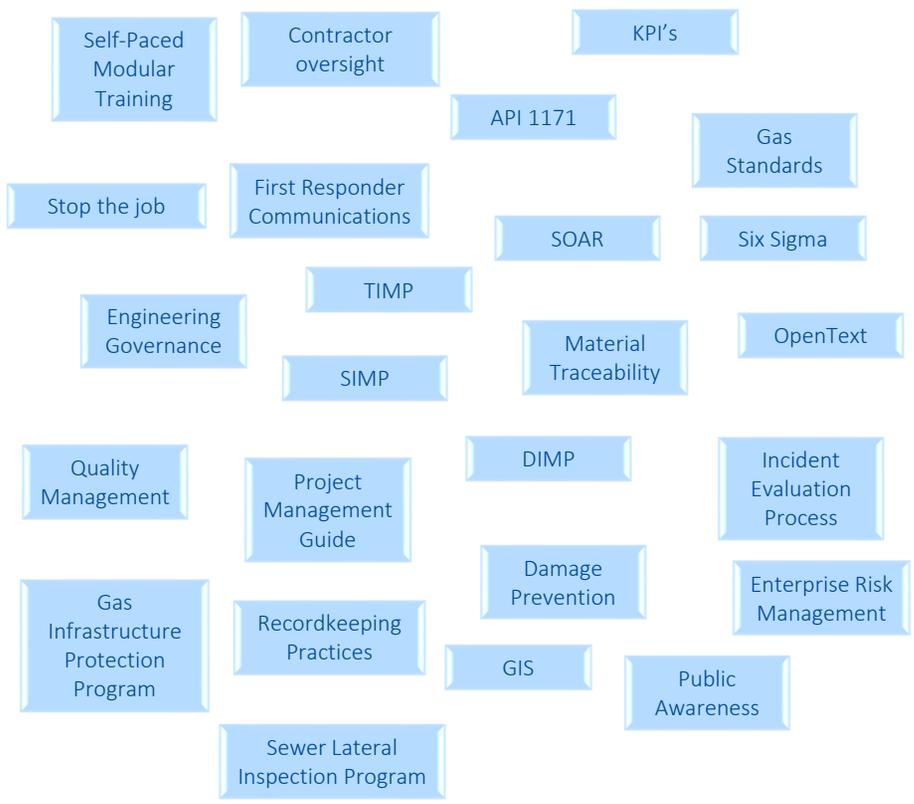
- Emphasis on leadership commitment to the program
- Managing the assets as a systemic and systematic process
- Both use the Plan-Do-Check-Act cycle
- Understanding and mitigating risk
- Integrated communication and training
- Management of information and documentation across life cycle
- Continuous Improvement

The main difference between the two standards is in the scope and focus of each. While API 1173's primary focus is on pipeline safety risk, ISO 55000 focuses on risks to achieving corporate objectives, safety typically being one of the key elements. Furthermore, ISO 55000 considers financial constraints and costs more effectively than API 1173. The table below illustrates the similarities between the two standards:

API 1173 Chapter	Corresponding ISO 55000 Chapter
Leadership and Management Commitment	Leadership
Stakeholder engagement	Context of the organization
Risk Management	Planning
Operational controls	Operation
Incident investigation, evaluation and lesson learned	Nonconformity and corrective action
Safety assurance	Preventive action
Management Review and Continual improvement	Performance evaluation
Competence, Awareness and Training	Continual improvement
Documentation and record keeping.	Support: Competence & Awareness
Emergency preparedness and Response	Documented information
	Not specifically in ISO 55000

Gas Safety Management System Integration Journey

Help unite and promote activities regarding safety throughout SoCalGas and SDG&E



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7) Please identify all the activities that will be/are being/have been developed and implemented to achieve conformance with API 1173 and identify their status. Also:

- a) Using an excel spreadsheet, please map all SMS related activities that are included in this GRC to the corresponding testimony and workpaper sections, provide the activity description, and corresponding dollar amount for each activity.
- b) Please compile all the testimony sections addressing the SMS and related activities into a single document compendium.

Utilities Response 7:

Please see the response to Question 7a.

Utilities Response 7a:

- a) Please see the separately attached spreadsheet “Data Response OSA 003_Q7a,” which provides the SMS-related activities requested in the 2019 GRC, including efforts related to API 1173.

The status of each line item is provided the spreadsheet. It is shown as either “In Process” or “Planned,” and was determined by the presence of recorded expenditures greater than zero in 2017. Any line item with a non-zero 2017 expenditure is labeled as “In Process.” Because multiple line items in the spreadsheet can correspond to often a single forecasted item in the GRC, if that GRC forecasted item showed a value greater than zero, then all associated line items in the SMS spreadsheet were marked “In Process.”

The exact meaning and application of “all SMS related activities” in the question are vague and ambiguous. As such, the spreadsheet referenced in this response represent the best efforts of SoCalGas and SDG&E to capture SMS-related activities, including, but not limited to, those intended to achieve or maintain API 1173 conformance and to address Risk Assessment Mitigation Phase (RAMP) items that mitigate SoCalGas and SDG&E’s top safety risks. However, depending on the definition of SMS-related activities, this may not be a complete list or include more granular items that may be identified through a more time-consuming, comprehensive search.

It is further noted that API 1173 is specifically mentioned in the following exhibits in the 2019 GRC proceeding:

- SCG-02-R/SDG&E-02-R, Chapter 1 (Day) - testimony
- SDG&E-04-R (Orozco-Mejia) and SDG&E-04-WP-R
- SDG&E-05 (Rivera) and SDG&E-05-WP
- SCG-05-R (Rivera) and SCG-05-WP
- SCG-08-R (Bermel)

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Utilities Response 7b:

- b) Please see the response to Question 7a. Please also see column C of the spreadsheet referenced in response to Question 7a.

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.001	Field O&M - Leak Survey	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	1,629	0	1,629	Leak Mitigation, Unstable Earth, Bridge and Span, Pipeline Patrol	Leak surveys, inspection of bridges and spans, self audits all at code required intervals	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.001	Field O&M - Leak Survey	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Safety Policies & Programs	1,250	0	1,250	Leak Repair	Leak repair is the result of leak mitigation and pipeline patrol. The activity involves replacing pipe or components that are poorly performing by leaking.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.001	Field O&M - Leak Survey	SDG&E-03	Employee, Contractor, and Public Safety	Safety Policies and Programs	211	0	211	Leak Surveys, Pipeline Patrols, Bridge Span Inspections	Patrolling, Leakage Surveys, atmospheric corrosion control and odorization of gas. Mandated under Federal Regulations DOT/PHMSA Title 49 to perform leak survey on high pressure pipelines annually, and begin an annual Aldyl-A survey. (Total combined labor is 3 X \$85K= \$255K beginning in TY2019 and thereafter); Non-labor expense is 3 X 5K= \$15K total beginning in TY2019 and thereafter.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.001	Field O&M - Leak Survey							D. Three Leak Patrolters	Training, certification and compliance of Federal and State laws. Prevention of damage to substructures due to unsafe excavation practices. Staff to translate federal and state regulations into company Gas Standards. Surveillance of excavations in the vicinity of high pressure gas lines to prevent damage.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.002	Field O&M - Locate & Mark	SDG&E-02	Catastrophic Damage Involving Third Party Dig-Ins	Training, Locate & Mark Activities Prevention and Improvements	2,542	560	3,102	Locate & Mark Training, Field Activities, Staff Support, Pipeline Observations (stand-by), Compliance, technical, and leadership training classes and programs	Annual ESCMP/OpQual Welding School Proposed: Supervisor University	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.007	Field O&M - Supervision & Training	SDG&E-17	Workforce Planning	Improvements	0	319	319			IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.007	Field O&M - Supervision & Training	SDG&E-03	Employee, Contractor, and Public Safety	Safety Policies & Programs	1,875	0	1,875	Traffic Control Work Group and Equip	Traffic Control for Employee and Public Safety. FY impact only 2015 going forward.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD000.007	Field O&M - Supervision & Training							Three Field Supervisors	will be added one beginning in 2018 and two more in 2019 to address growth in capital work. These positions will charge 40% of their time to O&M.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Coat or remove affected buried piping in vaults	0	217	217	Buried Piping in Vaults	SDG&E has pipeline buried in vaults that may be corroded by above ground facilities and pitting of below ground piping. This activity will determine the locations vaults containing medium and high pressure facilities. SDG&E will assess the coating and the condition of the above-ground and below-ground facilities within the vaults.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Encapsulate Dresser couplings	0	0	0	Dresser Mechanical Coupling Removal	This program consists of evaluating the coupling field location, excavating, and assessing the weld housing to encapsulate the dresser mechanical couplings main in and near downtown San Diego.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	174	0	174	Utility Conflict Review (Right of Way)	Inspection of the property area where pipelines are located and addresses encroachment, which is tangible property belonging to either the owner or a third party, which has unlawfully been or will be placed within the Companys right of way. This is mandated by CFR 49 Part 192 Subpart M.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Operations	68	0	68	Gas Standards Review	All procedures in Gas Standards are reviewed yearly for updated regulator information & updating standard procedures	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Verify locations and remove	0	0	0	Oil Drip Piping	This project is designed to verify the location of above ground and buried oil drip lines and containers. As part of the process, SDG&E consults with Pipeline Operations and Region Engineering to determine and remove facilities that are not necessary.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management							Four - Technical Support Analysts (TSA)s	will be added in the Technical Services design groups, 2 in 2017 and 2 more in 2018, in order to support increased workload.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management							Two GIS Analysts	will be added in the GGISS group one beginning in 2017. These positions will charge 52% of their time to O&M.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD001.000	Asset Management							Four GIS Technicians	will be added in the GGISS group beginning 2018. This addition is for system growth, mobile home park replacement mapping, mapping support to newly added leak surveys and GO 112-F reporting.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD002.000	Measurement & Regulation	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Scheduled monitoring and survey activities	2,400	0	2,400	Regulator Station Inspections, Meter Set Assembly (MSA), Valve Inspection, Meter and Regulators	Inspect meters, regulators to evaluate and confirm overpressure protection is in place and maintained.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD003.000	Cathodic Protection	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Requirements for Corrosion Control	1,500	0	1,500	Cathodic Protection	System protection requirements mandated by CFR 49 Part 192 Subpart I. This program maintains cathodically protected assets by repairing, replacing, or retrofitting components. (2 CP Electricians in 2017 and an additional 2 in 2018) are required for -	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD003.000	Cathodic Protection							Four CP Electricians	CP 10% and other magnesium anode area reads	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD003.000	Cathodic Protection							One Technical Advisor	will be added beginning in 2018 to provide CP system integrity analysis and prioritization of work activities.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training	SDG&E-03	Employee, Contractor, and Public Safety	Customer Communications & First Responder training	262	0	262	First Responder Outreach Program	First Responder gas related safety training and contingency planning. Also includes training and communications to internal personnel.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training	SDG&E-03	Employee, Contractor, and Public Safety	Mandatory Employee training refresher programs	800	0	800	Job Skills Training and STC -Gas	Job Skills Training at the Skills Training Center (Gas)	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Operations	90	0	90	Pipeline Safety and Compliance	The minimum safety requirements prescribed by CFR 49 Part 192 Subpart L. Operations include locate and mark, emergency preparedness and odorization. These activities are intended to address threats as identified by PHMSA.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Operations	68	0	68	QA/QC mostly new construction	Inspections of installed assets, welding/bonding procedures, material verification, gas standard compliance, personnel training/qualification verification.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	650	0	650	Distribution Welder Training, Distribution Construction Training, Training Props	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N. For safety and distribution staff training, Props are purchased to be used in situation city to simulate real world scenarios while qualifying personnel.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training							Records Management System	Funds will be required for setup and licensing for ITS and Veriforce records management systems for monitoring and tracking employee and contractor Operator Qualification records and Drug and Alcohol testing records.	IN PROCESS
SDG&E	O&M	SDG&E-04	Gina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training							Utility Specialists in 2018 and 2019	Contract resource (Instructional design) will be required to DEVELOP training for Field Utility Specialists in 2018 and 2019	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SDG&E	O&M	SDG&E-04	Jina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training								One Shop Assistant Due to the increase in customer meter sets and regulator stations requiring fabrication in the Welding Shop and for shop tools maintenance, one Shop Assistant will be required beginning in 2018.	IN PROCESS
SDG&E	O&M	SDG&E-04	Jina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training								One Emergency Response Technical Advisor to assist in coordinating tabletop and functional gas incident emergency exercises, provide staff support to the San Diego Region Gas Emergency (GEC), and update GEC procedures and operating manual, one Technical Advisor will be required beginning in 2018.	IN PROCESS
SDG&E	O&M	SDG&E-04	Jina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training								One Project Specialist Beginning in 2018 one Project Specialist will be added to focus on increased reporting and Operator Qualification requirements and compliance support as a result of the implementation of the new CPUC GO-112F.	IN PROCESS
SDG&E	O&M	SDG&E-04	Jina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training								Contract resource (Instructor) will be required to CONDUCT training for Gas Transmission and Moreno Compressor Station operators in 2018 and 2019	IN PROCESS
SDG&E	O&M	SDG&E-04	Jina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training								Contract resource (instructional design) to DEVELOP training for the Moreno Compressor station. This includes operations skills, OpQual, and instrumentation training for Moreno personnel	IN PROCESS
SDG&E	O&M	SDG&E-04	Jina Orozco-Meji	Gas Distribution	1GD004.000	Operations Management & Training								One Project Manager To begin implementing SDG&E Gas Distribution approach to compliance with API 1173 and Pipeline Safety Management System (PSMS) objectives. This will require one Project Manager beginning in 2018 and thereafter	IN PROCESS
SDG&E	O&M	SDG&E-05	Omar Rivera	Gas System Integrity	1SI000.000	GAS CONTRACTOR CONTROLS	SDG&E-03	Employee, Contractor, and Public Safety	Safety Policies & Programs	0	0	0	Traffic Control Work Group and Equipment	Traffic control for construction work	PLANNED
SDG&E	O&M	SDG&E-05	Omar Rivera	Gas System Integrity	1SI000.000	GAS CONTRACTOR CONTROLS	SDG&E-03	Employee, Contractor, and Public Safety	Safety Policies & Programs	0	127	127	Traffic Control Work Group and Equipment	Traffic control for construction work	PLANNED
SDG&E	O&M	SDG&E-05	Omar Rivera	Gas System Integrity	1SI002.000	PIPELINE SAFETY & COMPLIANCE								Adjustment to make the SDG&E Pipeline Safety & Compliance advisor 100%	IN PROCESS
SDG&E	O&M	SDG&E-05	Omar Rivera	Gas System Integrity	1SI003.000	DAMAGE PREVENTION AND PUBLIC AWARENESS	SDG&E-02	Catastrophic Damage Involving Third Party Dig-Ins	Public Awareness	125	500	625	Damage Prevention Public Awareness	Promotion of excavation safety to contractors and the public	IN PROCESS
SDG&E	O&M	SDG&E-05	Omar Rivera	Gas System Integrity	2100-3563	CODES STANDARDS AND RECORDS	SDG&E-13	Records Management	Management Systems	0	600	600	Information Management Systems	Regulatory compliance standards increasingly require that utilities be able to efficiently and effectively identify specific attributes related to operational assets	PLANNED
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT000.000	Pipeline Operations	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Systems In Place To Monitor And Manage Compliance Activity	20	0	20	Pipeline Patrol	Patrol Pipelines For Leaks	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT000.000	Pipeline Operations	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Systems In Place To Monitor and Manage Compliance Activity	7	0	7	Transmission M & I Maintenance	Inspect Regulators To Ensure Overpressure Protection In Place And Maintained	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT000.000	Pipeline Operations	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Systems in place to monitor and manage compliance activity schedules	27	0	27	Maximo Work Order Tracking	Track All Compliance Related Conditions In MAXIMO	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT000.000	Pipeline Operations								Pipeline Operation - Support Staffing	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT000.000	Pipeline Operations								Pipeline Leakage Investigation & Mitigation (Non Capital qualifying repairs)	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT000.000	Pipeline Operations								Right-Of-Way Compliance Maintenance	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT001.000	Compression Station Operations								Compression Operations Support Staffing	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT001.000	Compression Station Operations								Peak Load - Extended Maintenance Support Staffing	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT002.000	Technical Services	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Operations	32	0	32	Utility Conflict Review	Review Rights Of Way And Other Conflicts For Resolution	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT002.000	Technical Services	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Operator Qualification	108	0	108	Transmission Operator Qualification	Certification, Training, and Compliance With CFR	IN PROCESS
SDG&E	O&M	SDG&E-06	Elizabeth A. Music	Gas Transmission O&M	1GT002.000	Technical Services								Engineering Support Staffing	IN PROCESS
SDG&E	O&M	SDG&E-09	Deanna R. Haines	Gas Engineering	2100-3563	CODES STANDARDS AND RECORDS	SDG&E-13	Records Management	Administrative	0	0	0	Periodic Independent Internal Audits of Records Management	Records Management Group performs an internal audit of selected departments annually	PLANNED
SDG&E	O&M	SDG&E-11	Maria T. Martinez	TIMP & DIMP	1TD000.000	TIMP	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	management program is closely monitored and given high priority.	4,717	283	5,000	ILI - ECDA - Integrity Assessments	Cleaning and assessing internal conditions of hi pressure pipelines, external assesment of hi pressure pipelines, assessing the integrity of current hi pressure pipelines through ILI data	IN PROCESS
SDG&E	O&M	SDG&E-11	Maria T. Martinez	TIMP & DIMP	1TD000.001	DIMP	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Programs in place to minimize infrastruce damage due to vehicles or equipment striking above ground	3,027	2,973	6,000	GIPP - Anodeless Riser DRIP - SLIP - DIMP DREAMS	Program in place to protect assets by building infrastructure to protect gas equipment - addresses the threat of failures of anodeless risers - addresses an emerging issue concerning pipeline damage associated with sewer laterals - risk evaluation and monitoring of distribution systems	IN PROCESS
SDG&E	O&M	SDG&E-15	William H. Speer	Electric Distribution C	1ED011.000	Electric Regional Operations	SDG&E-08	Aviation Incident	safety Management Syst	34	0	34	Aviation Safety Management System (SMS)	Comprehensive safety management approach consisting of policies and procedures applicable for aviation	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SDG&E	O&M	SDG&E-15	William H. Speer	Electric Distribution	1ED011.000	Electric Regional Operations	SDG&E-08	Aviation Incident	Safety Management Syst	0	37	37	Governing Document Development	Development of separate policies for internal and external aviation operations	IN PROCESS
SDG&E	O&M	SDG&E-15	William H. Speer	Electric Distribution	1ED011.000	Electric Regional Operations	SDG&E-11	Unmanned Aircraft System Incident	Safety Management Sy	0	49	49	UAS SMS	A systematic approach to managing safety to better capture, analyze, and understand performance information and flight data, leading to programmatic changes that prevent failures.	IN PROCESS
SDG&E	O&M	SDG&E-15	William H. Speer	Electric Distribution	1ED011.000	Electric Regional Operations	SDG&E-11	Unmanned Aircraft System Incident	Safety Management Sy	0	29	29	UAS Privacy Policy	A policy to be created in compliance with industry best practices. The development of this policy will drive changes to the Aviation Operations Manual and Training Documentation.	IN PROCESS
SDG&E	O&M	SDG&E-15	William H. Speer	Electric Distribution	1ED027.000	Emergency Management	SDG&E-01 SDG&E-02 SDG&E-14	Wildfires Caused by SDG&E Equipment Employee, Contractor and Public Safety Climate Change Adaptation	Various	5970	911	6881	Emergency Management	Emergency Management is made up of three groups: Emergency Services (ES), Meteorology, and Fire Coordination and Prevention (FCP).	IN PROCESS
SDG&E	O&M	SDG&E-15	William H. Speer	Electric Distribution	1ED019.000	Asset Management	SDG&E-12	Electric Infrastructure Integrity	Utility Asset Managemer	0	3329	3329	ISO 55000 Certification	Estimated costs to obtain ISO55000 certification of standards for utility asset management.	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC001.000	Customer Services Field - Operations	SDG&E-03	Employee, Contractor, and Public Safety	Refer to Program Description	0	0	0	Refer to Program Description	CSF BBS program, CSF Field Observations performed by Supervisors, CSF Emergency orders include include Carbon Monoxide, Fumigation and Hazardous and non hazardous gas leaks, CSF Atmospheric Corrosion Orders	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC001.000	Customer Services Field - Operations								CS - Field Operations labor and non-labor costs associated with workload order forecast. Refer to Ex. SDG&E-17-WP - GMarelli - 1FC001, Supplemental Workpaper 1, for detailed calculations.	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC001.000	Customer Services Field - Operations								Incremental ongoing O&M costs associated with the implementation of the Field Parts Replacement Services (FPRS) program. Refer to testimony of SDG&E witness G. Marelli, Ex. SDGE-17, Section III.A.5, for more information on the FPRS program.	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC002.000	Customer Services Field - Supervision								Labor and non-labor cost for front-line CS - Field Supervision who provide direct supervision for CS - Field Operations technicians and collectors to maintain historical employee to supervisor ratio of 12:1. Refer to Ex. SDG&E-17-WP - GMarelli - 1FC002, Supplemental Workpaper 1, for detailed calculations.	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC003.000	Customer Services Field - Dispatch	SDG&E-03	Employee, Contractor, and Public Safety	Field observations of employee and contractors activities and safety behaviors	1	0	1	Behavior Based Safety (BBS) Program	CSF BBS program	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC003.000	Customer Services Field - Dispatch								Labor and non-labor costs for Dispatch personnel who route and dispatch work orders to CS - Field Operations employees. A three-year average was used because SDG&E believes this methodology best reflects the effects of Smart Meter implementation.	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC004.000	Customer Services Field - Support	SDG&E-03	Employee, Contractor, and Public Safety	Field observations of employee and contractors activities and safety behaviors	96	0	96	Behavior Based Safety (BBS) Program	CSF BBS program	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC004.000	Customer Services Field - Support	SDG&E-03	Employee, Contractor, and Public Safety	Field observations of employees and contractors activities and safety behaviors	0	(22)	(22)	Behavior Based Safety (BBS) Program	CSF BBS Program	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC004.000	Customer Services Field - Support								CS - Field Support labor and non-labor expenses to support CS - Field Operations. A three-year average was used because SDG&E believes this methodology best reflects the effects of Smart Meter implementation	IN PROCESS
SDG&E	O&M	SDG&E-17	Gwen R. Marelli	CS-Field	1FC004.000	Customer Services Field - Support								Incremental ongoing O&M costs for software license and maintenance costs associated with the implementation of the SORT Extension Capital Project. Refer to SDG&E witness G. Marelli, Ex. SDG&E-17, Section V, for more information on this project	IN PROCESS
SDG&E	O&M	SDG&E-18	Jerry D. Stewart	CS-Office Operations	1O0001.000	Advanced Metering Ops	SDG&E-03	Employee, Contractor, and Public Safety	Field observations of employee and contractors activities and safety behaviors.	37	0	37	Behavior Based Safety (BBS) and Customer Service Field (CSF) Observations Outside of BBS	A proactive approach to safety and health management focusing on principles that recognize at-risk as a frequent cause of both minor and serious injuries. The purpose is to reduce the occurrence of at-risk behaviors by modifying individuals actions and/or behaviors through observation, feedback, and positive interventions aimed at developing safe work habits, and Field observations performed by Supervisors.	IN PROCESS
SDG&E	O&M	SDG&E-18	Jerry Stewart	CS-Office Operations	1O0001.000	Advanced Metering Ops								Work Order Volume Increase: Estimated increase of 4,000 work orders over 2016 base year. These orders would be worked at an average annual order of 1,000 per FTE at an annual salary of \$90.3K per year. Approximately 3,000 of the increase in orders will be worked by the Electric Meter Tester Apprentices (EMTA's). See AMO 1O0001.000 Supplemental Workpaper 1 - Work Order Volume Forecast Calculations. (Reference cells C-17 and C-21)	IN PROCESS
SDG&E	O&M	SDG&E-18	Jerry D. Stewart	CS-Office Operations	1O0006.000	CCC Operations	SDG&E-03	Employee, Contractor, and Public Safety	Customer initiated orders relative to public safety.	371	166	537	Call Center Volume Relative to Public Safety	Emergency calls taken by the Customer Contact Center.	IN PROCESS
SDG&E	O&M	SDG&E-18	Jerry D. Stewart	CS-Office Operations	1O0006.000	CCC Operations	SDG&E-03	Employee, Contractor, and Public Safety	Mandatory employee training programs and standardized policies are in place.	20	0	20	Customer Contact Center (CCC) Emergency Call Training	Emergency call training and situational practice relative to both gas and electric.	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SDG&E	O&M	SDG&E-19	Lisa C. Davidson	CS-Information & Technologies	11N001.000	Residential Customer Services	SDG&E-03	Employee, Contractor, and Public Safety	Customer Communications and First Responder Training	11	0	11	Fire Preparedness & Outreach	Ensure public is aware of SDG&Es operation activities during high fire risk situations. Work closely with Commercial & Industrial (C&I) Services Outreach, Residential Services Outreach, Media Relations, Public Affairs, and Community Relations to plan, organize, and participate in community outreach events ensuring that key external stakeholders and channels are utilized efficiently. Provide funding for programs from community partners and first responders that support fire prevention and emergency response.	IN PROCESS
SDG&E	O&M	SDG&E-19	Lisa C. Davidson	CS-Information & Technologies	11N002.000	Business Services	SDG&E-03	Employee, Contractor, and Public Safety	Customer Communications and First Responder training	80	0	80	Fire Preparedness & Outreach	Ensure public is aware of SDG&Es operation activities during high fire risk situations. Work closely with Commercial & Industrial (C&I) Services Outreach, Residential Services Outreach, Media Relations, Public Affairs, and Community Relations to plan, organize, and participate in community outreach events ensuring that key external stakeholders and channels are utilized efficiently. Provide funding for programs from community partners and first responders that support fire prevention and emergency response. Forecast methodology is base year.	IN PROCESS
SDG&E	O&M	SDG&E-19	Lisa C. Davidson	CS-Information & Technologies	11N003.000	Marketing Research & Analytics	SDG&E-03	Employee, Contractor, and Public Safety	Customer Communications and First Responder Training	455	100	555	Emergency Prep Communications; Summer/Winter Prep Campaign	Emergency Prep: A general communications effort mainly concentrated in the High risk fire area, but reaching beyond this service area with information about preparing for emergencies. Summer/Winter Prep Campaign - Bill inserts, print, radio, web, social media. Messages include Carbon Monoxide Safety, Fumigations, furnace, etc.	IN PROCESS
SDG&E	O&M	SDG&E-19	Lisa C. Davidson	CS-Information & Technologies	11N004.000	Customer Programs Pricing and Other Office	SDG&E-03	Employee, Contractor, and Public Safety	Customer initiated orders relative to public safety.	147	141	288	Natural Gas Appliance Test (NGAT)	NGAT or CO testing is a safety-related program for Customer Assistance's Energy Savings Assistance (ESA) Program participants. SDG&E conducts Carbon Monoxide (CO) testing on homes weatherized through the ESA Program in accordance with Statewide ESA Program Installation Standards and the Statewide ESA Program Policy and Procedures Manual. CPUC directives require SDG&E to charge the costs for the NGAT program to base rates rather than to the public purpose funds.	IN PROCESS
SDG&E	O&M	SDG&E-22	Richard D. Tatters	Real Estate, Land Services & Facilities	1RE001.000	SDGE Facility Operations	SDG&E-03	Employee, Contractor, and Public Safety	Safety Policies & Programs	0	0	0	Facilities Maintenance Program	Facility Manger addresses issues regularly and consistently.	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3101	SECURITY POLICY AND AWARENESS	SDG&E-07	Cyber Security	See Subsidiary Workpaper	0	0	0	Cyber Security	Security Policy and Awareness	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3763	DIRECTOR - INFORMATION SECURITY	SDG&E-07	Cyber Security	See Subsidiary Work Paper	367	0	367	Cyber Security	Cyber Security	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3774	SECURITY ENGINEERING	SDG&E-07	Cyber Security	See Subsidiary Workpaper	0	115	115	Cyber Security (Labor)	SECURITY ENGINEERING	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3774	SECURITY ENGINEERING	SDG&E-07	Cyber Security	See Subsidiary Workpaper	1,174	140	1,314	Cyber Security - (Non Labor)	SECURITY ENGINEERING	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3774	SECURITY ENGINEERING	SDG&E-07	Cyber Security	See Subsidiary Workpaper	993	0	993	Cyber Security	SECURITY ENGINEERING	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3775	SECURITY OPERATIONS	SDG&E-07	Cyber Security	See Subsidiary Work Paper	1,642	0	1,642	Cyber Security	SECURITY OPERATIONS	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3775	SECURITY OPERATIONS	SDG&E-07	Cyber Security	See Subsidiary Workpaper	0	115	115	Cyber Security - (Labor)	SECURITY OPERATIONS	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3781	CRITICAL INFRASTRUCTURE PROTECTION	SDG&E-07	Cyber Security	See Subsidiary Workpaper	0	420	420	Cyber Security	Security Contracts	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3781	CRITICAL INFRASTRUCTURE PROTECTION	SDG&E-07	Cyber Security	See Subsidiary Workpaper	0	0	0	Cyber Security	Security Contracts	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3781	CRITICAL INFRASTRUCTURE PROTECTION	SDG&E-07	Cyber Security	See Subsidiary Workpaper	0	2,950	2,950	Cyber Security - Contracts	Security Contracts	IN PROCESS
SDG&E	O&M	SDG&E-25	Gavin H. Worden	Cyber Security	2100-3976	INFORMATION SECURITY PROGRAMS	SDG&E-07	Cyber Security	See Subsidiary Workpaper	22	0	22	Cyber Security	Security Programs	IN PROCESS
SDG&E	O&M	SDG&E-26	Aia L. DeMontign	Corporate Center - General Administration	1SE000.001	SECC OUTSIDE SERVICES EMPLOYES - F923.1	SDG&E-13	Records Management	Administrative	107	0	107	Sempra Energy Records Management Support and Offsite Records Storage	Costs allocated from Sempra Energy for Records Management Support and Offsite Records Storage	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR001.000	Safety Wellness and Disability Svcs	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework is in place at SDG&E. This framework cons	1,069	200	1,269	Safety Training, Workshops and campaigns	Safety Training, Workshops and campaigns	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR001.000	Safety Wellness and Disability Svcs	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework	0	0	0	Contractor Safety Program	Contractor Safety Program Analyst	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR001.000	Safety Wellness and Disability Svcs	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework	0	40	40	Contractor Safety Program	Contractor Safety Database	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR001.000	Safety Wellness and Disability Svcs	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework	25	100	125	Contractor Safety Program	Program Manager FY Impact	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR001.000	Safety Wellness and Disability Svcs	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework	0	75	75	Contractor Safety Program	Contractor Safety Program Analyst	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR001.000	Safety Wellness and Disability Svcs	SDG&E-03	Employee, Contractor, and Public Safety	Safety Training	2,480	0	2,480	OSHA Required Training and Training Required per Company Safety Standards	OSHA Required Training and Training Required per Company Safety Standards	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR004.000	Organizational Effectiveness	SDG&E-17	Workforce Planning	Training	0	80	80	Working Foreman Training and Human Performance	Working Foreman Training and Human Performance	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR004.000	Organizational Effectiveness	SDG&E-17	Workforce Planning	Training	0	0	0	Workforce Planning	Training	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR004.000	Organizational Effectiveness	SDG&E-17	Workforce Planning	Workforce Planning	76	150	226	Leadership training programs	Workforce Planning Efforts Supervisor Effectiveness Program	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	1HR004.000	Organizational Effectiveness	SDG&E-17	Workforce Planning	Workforce Planning	0	100	100	Supervisor Effectiveness Training	Supervisor Effectiveness Training	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	2100-0214	SDG&E FIELD SAFETY	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework	885	90	975	Field Safety	Field Safety Advisor	IN PROCESS
SDG&E	O&M	SDG&E-30	Tashonda Taylor	HR, Safety, WC, LTD	2100-3414	Safety Compliance	SDG&E-03	Employee, Contractor, and Public Safety	A comprehensive Health & Safety risk management framework	577	30	607	Safety Compliance	Increased substance abuse prevention, testing and contractor monitoring	IN PROCESS
SDG&E	O&M	SDG&E-31	Sandra K. Hrma	Acctg, Fin, Reg, Legal	2100-3555	Oper CCTR-USS-Controllers BUSINESS CONTROLS	SDG&E-13	Records Management	Consulting expertise to improve records management program	591	200	791	Consultant Support	Records Management update	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	Contractor Management and Traffic Control	1,541	0	1,541	Medium Pressure Contractor Inspections	These inspections are completed on capital jobs by the Contractor Inspectors plus support from the area Field Operations Supervisor and Team Leads. Inspectors to complete a Field Audit Collection Tool form to record their findings - both performance overall and work elements	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	Employee Skills Training	0	0	0	Formal Skills Training - Distribution Employee Time	Distribution employee skills training, base safety meeting and annual documents review	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	Gas Facility and Pipeline Inspections	0	0	0	Bridge and Span Inspections - Distribution	Bridge and Span Inspections - Distribution	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	High-Pressure Pipeline Failure, Project Maintenance	59	0	59	Valve Maintenance and Installation (Distribution High Pressure)	Maintain valves and replace or install valves required for compliance	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Maintenance	3,476	0	3,476	Pipeline Observation (Standby)	Surveillance of excavations in the vicinity of high pressure gas lines to prevent damage	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	89	32	121	Bridge & Span Inspections	Inspect pipelines which cross bridges or spans. Inspections of natural gas pipeline over bridges and land crossings at least once every 2 calendar years, but with intervals not exceeding 27 months. This is mandated by CFR 49 Part 192 Subpart M.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	8	0	8	Unstable Earth Inspection	Mitigation of pipeline rupture due to environmental conditions of soil. This is usually completed at the same time of the valve inspection and maintenance cycle.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	862	0	862	Valve Inspection and Maintenance (Per Region)	Valves are checked and serviced at intervals not exceeding 15 months, but at least once each calendar year. (CFR 192.747). This is mandated by CFR 49 Part 192 Subpart M.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	160	38	198	Pipeline Patrol	Pipeline patrol performed to look for any broken terraces, exposed pipe, erosion, sunken back fill, etc. Any remedial action discovered must be issued within 30 days and completed in 90 days. This is mandated by CFR 49 Part 192 Subpart M.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	PPE and Safety Equipment	693	0	693	Company wide purchases of personal protective equipment (PPE)	Cost basis of the purchases for inventory replenishment of PPE materials	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	PPE and Safety Equipment	1,032	0	1,032	Uniform Expenses - Distribution, Transmission, Storage	Uniform rentals for employees - both protective and for security	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	PPE and Safety Equipment	0	20	20	Confined space air monitoring system for field personnel	Replace 280 confined space monitors in 2018. Replace 380 personal monitors in 2018. 100 calibration gas cylinders purchased per year	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	QA Job Observations Field Rides and Job Monitoring	1,647	0	1,647	High Pressure Standby Distribution	This is review at the 3rd party job site to ensure safety of SoCalGas system. The locations are often result of Locate & Mark tickets	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-02	Employee, Contractor, Customer, and Public Safety	QA Job Observations Field Rides and Job Monitoring	60	0	60	Medium Pressure Company Crew Inspections	The Field Operations Supervisor and Team Leads will complete inspections on company crew work. Supervisors will complete the Field Audit Collection Tool form to record their findings	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	1,821	652	2,473	Student Labor for attending Distribution-related training classes	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Formal Skills Training - Distribution Employee Time	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer and Public Safety (SCG-02); High Pressure Pipeline Failure (SCG-04); Records Management (SCG-08); and Medium Pressure Pipeline Failure (SCG-10) (NOTE: Overlapping training removed)	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support			Office Instructor				Field Operations Supervisors	Incremental Office Instructor to support Dispatch offices with on the job training	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support							Field Operations Supervisors	Field Operations Supervisors to support incremental work related to Leak Survey, Main Maintenance, Service Maintenance, and Locate and Mark	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.000	Field Support							Hydraulic Valve Maintenance	Maintenance for installation of hydraulic valves due to PSEP Valve Enhancement Plan. Upgraded valve infrastructure provides automatic and remote isolation and depressurization of the distribution supply line system in 30 minutes or less in the event of a pipeline rupture. PSEP plans to install six valves in 2018 and four in TY 2019.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.001	Leak Survey	SCG-02	Employee, Contractor, Customer, and Public Safety	Gas Facility and Pipeline Inspections	0	0	0	Leak Survey Distribution	Completion of the routine leak survey requirements.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.001	Leak Survey	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	7,080	1,240	8,320	Leak Survey	Leak surveys are performed to find any leaks in the system using state of the art technology and SAP leak reporting for tracking purposes. This is mandated by the Federal Code of Regulation (CFR) 49 Part 192 Subpart M.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.001	Leak Survey							Bi-Annual High-Pressure Leak Survey	Incremental 690 miles of leak survey due to revisions in GO 112-F. This effort will begin in 2017 and continue through 2018 and TY 2019.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.001	Leak Survey								See Supplemental Workpaper SCG-04-GOM-O&M-SUP-005 for calculation details.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.001	Leak Survey								Proposed change to inspect all high-pressure lines twice a year. Approximately 19 million feet of high-pressure lines would be inspected twice a year starting in TY 2019.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD000.001	Leak Survey								See Supplemental Workpaper SCG-04-GOM-O&M-SUP-005 for calculation details.	IN PROCESS

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SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.001	Leak Survey							Enhanced Leak Survey - Early Vintage Plastic Pipe	SoCalGas plans to increase survey cycle requirements for all pre-1986 plastic pipe (Aldyl-A) from a five-year survey cycle to an annual cycle. This change adds a mitigation measure in support of RAMP risk: Catastrophic Damage Involving Medium-Pressure Pipeline Failure. Aldyl-A is a polyethylene plastic pipe material widely used in the gas industry. Early vintages of this material (1970s and 1980s) can experience brittleness as it ages increasing the risk for leakage. Approximately 32,202,720 million feet of pipe to be surveyed annually.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.002	Locate & Mark	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Locate & Mark Activities	12,529	1,921	14,450	Locate & Mark Field Activities	Prevention of damage to substructures due to unsafe excavation practices	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.002	Locate & Mark	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Locate & Mark Training	140	0	140	Gas Operations Centralized Training	Training, Certification and compliance of Federal and State laws	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.002	Locate & Mark	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Locate & Mark Training	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer and Public Safety (SCG-02); High Pressure Pipeline Failure (SCG-04); Records Management (SCG-08); and Medium Pressure Pipeline Failure (SCG-10) (NOTE: Overlapping Trainings Removed)	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.002	Locate & Mark							USA Ticket Price Increase	i. USA Ticket Price Increase - SoCalGas costs will increase by \$0.15 per new ticket for the regional notification center covering the southern region of the service territory (DigAlert, also known as USA South).	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.002	Locate & Mark							USA Ticket Price Increase	ii. USA Ticket Price Increase - The regional notification center covering the northern part of the SoCalGas' service territory (USA North 811, also known as USA North) uses a membership fee structure, which will increase by 2% over the base year 2016 cost.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.002	Locate & Mark							Vacuum Technology for Potholing	The use of keyhole technology to excavate in order to find hard-to-locate underground pipelines. Provides accurate locating and marking of hard-to-find or un-locatable pipelines and reduce the risk of damage to its infrastructure and protect public safety. Non-labor cost will be 10 units x \$1,000 = \$10,000 beginning in 2017 Non-labor cost will be 100 units x \$1,000 = \$100,000 beginning in 2018 Non-labor cost will be 500 units x \$1,000 = \$500,000 beginning in TY 2019	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.003	Main Maintenance	SCG-02	Employee, Contractor, Customer, and Public Safety	Contracting for Traffic Control Delineation materials -- Distribution Only. Outside vendors	942	920	1,862	Contracting for Traffic Control Delineation materials	Contracting for Traffic Control Delineation materials	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.003	Main Maintenance							Leak Repairs	SoCalGas has forecasted in this TY 2019 GRC an increase in the number of incremental leak repairs in 2017 and 2018 to 2,800 and 4,870 respectively for a total of 7,670 over this two-year period. Labor costs will be 2,800 leaks X \$1,000 = \$2,800K in 2017. Non-labor costs will be 2,800 leaks X \$1,500 = \$4,200K in 2017. Labor costs will be 4,870 leaks X \$1,000 = \$4,870K in 2018. Non-labor costs will be 4,870 leaks X \$1,500 = \$7,305K in 2018. As a result of the accelerated leak survey cycles there is an estimated of 2,400 leaks that will be repaired in TY 2019. Labor costs will be 2,400 leaks X \$1,000 = \$2,400K in TY 2019. Non-labor costs will be 2,400 leaks X \$1,500 = \$3,600K in TY 2019.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.004	Service Maintenance							MSA Maintenance Activities	SoCalGas plans to address the continuing increase in maintenance work associated with riser and service valve work, SoCalGas anticipates addressing approximately 1,500 orders in 2017, 3,000 in 2018, and 8,500 in TY 2019. Associated non-labor cost can be found under the workbook for Tools-Fittings and Materials. See Supplemental Workpaper SCG-04-GOM-O&M-SUP-007 for calculation details.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Mejia	Gas Distribution	2GD000.004	Service Maintenance							Meter Guard Activities	SoCalGas plans to address the continuing increase in maintenance work associated with meter guard activities, SoCalGas anticipates addressing approximately 500 orders in 2017, 1,000 in 2018, and 3,500 in TY 2019. Associated non-labor cost can be found under the workbook for Tools-Fittings and Materials. See Supplemental Workpaper SCG-04-GOM-O&M-SUP-006 for calculation details.	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD000.004	Service Maintenance							Chronically Inaccessible MSA's	Disconnect Services - SoCalGas continues to face the issue of chronically inaccessible MSAs. This refers to meters that Company personnel are unable to access after multiple attempts of communication. After Customer Services personnel attempts to reach the customer to gain access to the MSA using different communication options such as letter, phone and in person; a final notification is sent notifying the customer that service will be cut in the street if SoCalGas is unable to access the meter to complete the inspection work. Gas Distribution crews cut and cap the gas service line at the service to main connection. This effort will begin in 2018 by addressing approximately 364 services in 2018 and 709 in TY 2019. See Supplemental Workpaper SCG-04-GOM-O&M-SUP-011 for calculation details.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD000.005	Tools Fittings & Materials							Calibrated Tools	This project will build up an adequate stock of tools available for immediate swap out when equipment is sent in for maintenance or calibration. The project will also replace tools that are at the end of their useful life or that are damaged and no longer useful.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD000.005	Tools Fittings & Materials							OMD Cages	The purchase and installation of protective cages around vehicle mounted Optical Methane Detectors (OMD). The cages will be built specifically for OMDs to provide protection from damage in case of contact with objects or other vehicles while allowing easy access to the equipment.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD000.005	Tools Fittings & Materials							MSA Maintenance Activities	SoCalGas will address an increased amount of riser and service valve orders regenerated by the MSA Inspection program SoCalGas anticipates addressing approximately 1,500 orders in 2017, 3,000 in 2018, and 8,500 in TY 2019. Associated labor cost can be found under the workbook for Service Maintenance.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD000.005	Tools Fittings & Materials							Meter Guard Activities	SoCalGas will address an increased amount of meter guard orders regenerated by the MSA Inspection program. SoCalGas anticipates addressing approximately 500 orders in 2017, 1,000 in 2018, and 3,500 in TY 2019. This section covers the non-labor cost for this activity. Associated labor cost can be found under the workbook for Service Maintenance.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD000.005	Tools Fittings & Materials							OMD Maintenance	Regular maintenance of SoCalGas owned Optical Methane Detectors (OMD). Maintenance is required every three months by a certified technician. Cost for manufacturer to maintain and service these devices.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD001.000	Asset Management							Administrative Control Clerks for Pipeline Records Management	Administrative Control Clerks to support record-keeping and document quality control driven by an increase in level of construction as discussed throughout the Gas Distribution testimony. Continuous improvement of documentation practices that provide for the development and retention of reliable, traceable, and verifiable records.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD001.000	Asset Management							Administrative Control Clerk for Leak Survey and Repairs	Administrative Control Clerks to support with recording work history and maintenance of records due to increase in leak survey cycles for pre-1986 plastic pipe and high-pressure pipe.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD002.000	Measurement & Regulation	SCG-02	Employee, Contractor, Customer, and Public Safety	Gas Facility and Pipeline Inspections	0	0	0	Meter & Regulator Station Inspections Distribution	Meter & Regulator Station Inspections Distribution	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD002.000	Measurement & Regulation	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	1,191	198	1,389	M&R and Maintenance	Inspect meters, regulators, and gauges to evaluate and confirm overpressure protection is in place and maintained. Each pressure limiting station, relief device, signaling device, and pressure regulating station and its equipment must be inspected and tested at intervals not exceeding 15 months, but at least once each calendar year. This is mandated by CFR 49 Part 192 Subpart M.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD002.000	Measurement & Regulation	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	3,550	1,449	4,999	MSA	Maintenance and inspections of meter set assemblies in the system. This is mandated by CFR 49 Part 192 Subpart M.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD002.000	Measurement & Regulation							Meter Transmission Unit (MTU) Battery Replacements	Non-labor cost to capture the replacement of MTU batteries. Labor cost will be 3,000 orders x \$40 = \$120,000 beginning in TY 2019.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD002.000	Measurement & Regulation							Advanced Metering Infrastructure (AMI) Remediation	Labor cost for Measurement & Regulation technicians to troubleshoot and replace approximately 1,900 AMI modules due to failure of the devices. See Supplemental Workpaper SCG-04-GOM-O&M-SUP-010 for calculation details.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD003.000	Cathodic Protection	SCG-02	Employee, Contractor, Customer, and Public Safety	Gas Facility and Pipeline Inspections	879	0	879	CP 10% Reads - Inspections on Distribution system	CP 10% Reads - Inspections on Distribution system	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD003.000	Cathodic Protection	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Requirements for Corrosion Control	10,519	5,056	15,575	CP	System protection requirements mandated by CFR 49 Part 192 Subpart L. This program maintains cathodically protected assets by repairing, replacing, or retrofitting components. Re-evaluation of existing 100 mV shift areas at least every 10 years to verify their effectiveness as a measurement for adequate cathodic protection of the area. SoCalGas will re-evaluate 75 CP packages in 2018 and 175 CP packages annually starting in TY 2019.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD003.000	Cathodic Protection							Incremental Cathodic Protection System Enhancement	See Supplemental Workpaper SCG-04-GOM-O&M-SUP-003 for calculation details.	IN PROCESS
SoCalGas	O&M	SCG-04	Gina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management	SCG-02	Employee, Contractor, Customer, and Public Safety	Employee Skills Training	552	0	552	Formal Skills Training - Instructor Time	Formal Skills Training - Instructor Time	IN PROCESS

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SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Locate & Mark Activities	111	0	111	Staff Support	Staff to translate federal and state regulations into company Gas Standards	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management	SCG-02	Employee, Contractor, Customer, and Public Safety	Policy Procedures Standards and ESCMP	1,540	0	1,540	Development and management of formal gas standards, procedures and processes for Gas Distribution,	Evaluation includes the time of the Standard Owner to complete initial review, coordinate inputs, make changes and complete processing	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management							Project Advisors	Leak Repairs - Incremental project advisors responsible for implementing leak analysis and process strategy to the leak inventory reduction effort. They will schedule work and coordinate with field crews and contractors to verify that repairs and service replacements are completed on time. The project advisors will develop reports to track cost, set up performance metrics, manage contractors, and coordinate material and fleet needs.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management							Project Manager	Leak Repairs - Incremental support to manage the Leak inventory reduction effort and communicate with key stakeholders, provide work direction to the project advisors, implement best practices, negotiate contractual agreements, and work with the finance team to develop key financial metrics.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management							Director of Workforce Planning & Resource Management	Incremental Director position responsible for directing and providing strategy, vision and leadership for an organization accountable for the planning, scheduling, resource management, engineering, design and special projects of the entire SoCalGas distribution pipeline infrastructure. The director provides strategic direction and leadership in optimizing resource management across all distribution functions including pipeline maintenance, construction and special project work across company and contractor crews.	IN PROCESS
SoCalGas	O&M	SCG-04	Jina Orozco-Meji	Gas Distribution	2GD004.000	Operations and Management							Continuous Improvement Operations Manager	Incremental position responsible for providing the focus to review work processes that determine efficiency, safety and compliance improvement opportunities. This position identifies and implements opportunities to reduce or avoid operating cost through efficiency initiatives and improvements that strengthen business processes and internal controls.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-0302	BUSINESS PROCESS ESS IMPLEMENTATION AND ESS MOBILE SOLUTION	SCG-08	Records Management	Information Management System	0	110	110	Document management and communications of Gas Standards	Involves the management of the Document Management System, including the development, publication & maintenance process of the SoCalGas & SDG&E plans to comply to pipeline safety regulations (49 CFR Parts 191-193) and CPUC General Orders 112-E, 58A & 58B in addition to the Company Operations Standards, Form Instructions, Manuals (Safety, IIPP, DIMP/TIMP, Gas Operator Safety Plan, Welding Specs, etc.)	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-0305	ESS PRODUCTION SUPPORT	SCG-08	Records Management	Information Management Systems	0	100	100	IT O&M Costs	Costs for the ongoing O&M to maintain the systems used to store operational asset records	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-0306	WRK MGMT & DATABASES	SCG-08	Records Management	Operational Compliance and Oversight	0	200	200	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-0306.000	WRK MGMT & DATABASES								Incremental FTEs for two Technical Computing Advisors and one application Support Lead develop and implement the Engineering Data Analytics group.	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2023.000	FIELD TECHNOLOGIES								One additional employee to support QA Operations	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2144.000	GAS SYSTEM INTEGRITY STAFF & PROGRAMS								Incremental \$25k for non-labor for Gas System Integrity Director and Admin. Non-labor expenses include Office Supplies, Mileage, Per Diems, Professional Dues, External Training, Cell Phones etc...	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2344	OPERATOR QUALIFICATION	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Operations	0	794	794	Operator Qualification Program Administration and Development	The minimum safety requirements prescribed by CFR 49 Part 192 Subpart L. Operations include locate and mark, emergency preparedness and odorization. These activities are intended to address threats as identified by PHMSA.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2345	PIPELINE SYSTEM CONSTRUCTION POLICY	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Locate & Mark Activities	0	250	250	Locate & Mark Field Activities	Prevention of damage to substructures due to unsafe excavation practices	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2345	PIPELINE SYSTEM CONSTRUCTION POLICY	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Locate & Mark Activities	0	865	865	Staff Support	Staff to translate federal and state regulations into company Gas Standards	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2345.000 -	PIPELINE SYSTEM CONSTRUCTION POLICY								R&D at \$20 000 for N/L per year 2017 - One time Office Equipment Update at \$50,000 Golden Shovel Implementation at \$5,000 per year. The project encompasses SoCalGas' adoption of the Gold Shovel Standard. The Gold Shovel Standard is a program designed to strengthen professional contractors' commitment to safe excavation practices through incentives tied to obtaining contracts with the utility. All contractors who perform excavation activities when performing contractual work for SoCalGas will be required to be Gold Shovel Standard certified, which includes development of safe excavation policies and practices, process for acquiring employee feedback, and protection against retaliation of whistleblowers. Gold Shovel Standard membership will improve SoCalGas' insight to the excavation safety practices of the contractors it hires by allowing the utility access to information regarding damages caused by contractors working for other entities anywhere in the United States.	PLANNED

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2360	QUALITY & RISK	SCG-08	Records Management	Operational Compliance and Oversight	0	315	315	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2376	ENTERPRISE GEOGRAPHIC INFORMATION SYSTEM (EGIS) SHARED PUBLIC AWARENESS ACTIVITIES	SCG-08	Records Management	Operational Compliance and Oversight	0	580	580	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2417	PIPELINE SAFETY & COMPLIANCE MANAGER	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Analysis	398	420	818	Upgrade reporting systems	Upgrade and integrate systems to automate pipeline damage information and reporting for improved data analysis and prevention of dig-ins	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2473.000	PIPELINE SAFETY OVERSIGHT								Additional headcount needed to perform increasing number of audits & to manage simultaneous scheduled audits as prescribed by regulation.	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2551.000	PIPELINE SAFETY OVERSIGHT								1st half of root Cause analysis training- Teach how to do root cause so we're consistent, implement train the trainer program, develop core curriculum, licensing fee with trainer program benefit: to ensure better effective solutions to solve problems and no longer see repeat issues	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-2551.000	PIPELINE SAFETY OVERSIGHT								Upward pressure adjustment in shared cost center 2200-2551 to implement new staff focused on performing centralized incident analysis, enhanced tracking & management of process improvement to meet PHMSA compliance requirements, and enhanced compliance oversight. We also want to enhance our ability to administer within staff organizations & communicate our gas standards to the field.	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-7242	RECORDS MANAGEMENT - from 2200-2361	SCG-08	Records Management	Operational Compliance and Oversight	0	1,650	1,650	Centralized Operational Records Management Department	ARMA certified records specialists from each functional area; data analysts; quality control specialists (5 - 15 Full Time Equivalents)	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2200-7242	RECORDS MANAGEMENT - from 2200-2361	SCG-02	Employee, Contractor, Customer, and Public Safety	Policy Procedures Standards and ESCMP	0	900	900	Development and management of formal gas standards, procedures and processes for Gas Distribution,	Evaluation includes the time of the Standard Owner to complete initial review, coordinate inputs, make changes and complete processing	PLANNED
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-02	Employee, Contractor, Customer, and Public Safety	Employee Skills Training	0	250	250	Broaden Situation City Skills Training	Expand Situation City training props at Pico Rivera campus - props, sheds and simulation capabilities to increase number of classes conducted per year	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Qualification of Pipeline Personnel	0	0	0	Cathodic Protection Technician Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	664	0	664	Distribution Construction Technician Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	267	0	267	Distribution Energy Technician Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	323	0	323	Distribution Lead Construction Technician Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	99	0	99	Distribution System Protection Specialist Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	0	0	0	Distribution Lead System Protection Specialist Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	99	0	99	Distribution Construction Technician Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	5	0	5	Distribution Energy Technician Distribution Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Qualifications of Pipeline Personnel	15	0	15	Distribution Lead Construction Technician Training	Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Construction Technician Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Energy Technician Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Lead Construction Technician Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution System Protection Specialist Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Lead System Protection Specialist Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Construction Technician Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Energy Technician Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Lead Construction Technician Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution System Protection Specialist Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	0	0	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Distribution Lead System Protection Specialist Training	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT	SCG-07	Workforce Planning	Training - Technical non-HR	0	1,050	1,050	Skills training covered by the following risks: Dig-Ins (SCG-01); Employee, Contractor, Customer an	Technical Specialist for Modernization of Training Materials	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation	(A) 2016 Embedded RAMP Base Costs (000s)	(B) TY 2019 Estimated RAMP Incremental (000s)	Dollars Requested (000)	Program Name	Program Desc	Status
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							Classroom Technology	Further enhancing the employee training experience and knowledge transfer SoCalGas' proposes to continue its modernization of classroom technology, this modernization would include enhancing audio-visual equipment, introduction of handheld devices into the classroom and leveraging virtual technology for simulated activities.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							Employee Collaborative Training Program	Development and implementation of a technical academic training program	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							Incremental Locate & Mark Trainer	Historically we have seen an increase in the number of locate and mark tickets and we expect a continued increase through our continual efforts from our Public Awareness Program and Senate Bill 661(Protection of subsurface installations) that was signed in September 2016. Senate Bill 661 added enforcement to the digging law by establishing the California Underground Facilities Safe Excavation Board. The Board is authorized to take action against those parties who violate the excavation law 4216. This new bill is expected to require more excavators to notify Underground Service Alert (USA) which will add upward pressure to an already increasing USA ticket volume in California. Thus, more employees will be needed to perform locate and mark activities in order for the Company to meet increasing USA ticket demands and prevent marking delays. Other notable impacts of the Dig Safe Act of 2016 include the requirement for marking the presence of known abandoned lines and keeping abandoned line records which will increase time spent locating each ticket and create additional work for supporting activities.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							High Pressure Technical Advisors	One Technical Advisors are required to support high pressure training. They will develop new and refine existing training modules, and will assume delivery of initial Operator Qualification technical training to managers and supervisors involved with high pressure pipeline construction. The Technical Advisor will be the responsible document owners for the various high pressure field procedures.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							Instructors for Formal Clerical Training	SoCalGas has identified an opportunity for enhancement is the training for employees performing clerical work within Gas Transmission, Gas Distribution and Storage, such as Distribution Operations Clerk, Work Order Control Clerk, and Leakage Clerk. Instructors are responsible for accuracy of course materials, arranging required items for class, and following up with students and their supervisors following class to identify areas of continuous improvement so that students are prepared when they return from training. Additionally, Instructors act as Subject Matter Experts while adapting course content following a change to software or the process used by employees to complete the required tasks . The work these clerical workers perform directly impacts compliance and pipeline facility records management . Therefore, having knowledgeable, highly-skilled clerks contributes to the safety and integrity of the gas system.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							Compliance Assurance Technical Advisor	comprehensive data validation tools to identify missing or incorrect information. This position will work directly with region personnel (Supervisors, Compliance Technical Advisors, and Administrative Advisors) to retrieve the correct information and make the necessary changes in SAP. As trends are discovered with specific data issues, additional validation mechanisms will be implemented in Click and SAP to help reduce the number of discovered errors. Furthermore, this advisor will assist in the preparation of reports for the annual CPUC audits and will support region management during audits to respond to data requests.	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI001.000	GAS OPERATIONS TRAINING & DEVELOPMENT							High Pressure Management	Incremental to support R&D Engineering studies and Policy and Procedure development for High Pressure Management	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI002.000	PIPELINE SAFETY & COMPLIANCE	SCG-08	Records Management	Operational Compliance and Oversight	0	100	100	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI002.000	PIPELINE SAFETY & COMPLIANCE	SCG-08	Records Management	Operational Compliance and Oversight	0	295	295	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI002.000	PIPELINE SAFETY & COMPLIANCE	SCG-08	Records Management	Operational Compliance and Oversight	0	781	781	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI002.000	PIPELINE SAFETY & COMPLIANCE	SCG-08	Records Management	Operational Compliance and Oversight	0	1,111	1,111	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS

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SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI003.000	PUBLIC AWARENESS	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Public Awareness	398	1,000	1,398	Damage Prevention Public Awareness	Promotion of excavation safety to contractors and the public	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI004.000	ASSET MANAGEMENT	SCG-08	Records Management	Operational Compliance and Oversight	5,572	104	5,676	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI004.000	ASSET MANAGEMENT	SCG-08	Records Management	Operational Compliance and Oversight	0	208	208	Support of Employees in Designated Departments to Collect, Enter and Maintain Records Related to Ope	Labor and non-labor costs for employees in designated departments to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	O&M	SCG-05	Omar Rivera	Gas System Integrity	2SI004.000	ASSET MANAGEMENT	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Prevention and Improvements	0	0	0	Automated USA Ticket Prioritization	Automate the prioritization process using algorithms based on ticket and GIS information	IN PROCESS

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SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005000	New Business					6,376	8,217	7,805		Budget code 500 covers the installation of gas mains and services, meter set assemblies (MSAs), regulator stations, and all associated equipment except the purchase of gas meters and service regulators, which are reflected in budget code 502. Costs includes main and service extensions into new residential, commercial and industrial developments.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005000.03	RAMP - Base / Risk ID 16 - Odorization of New Pipeline	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Odorization of gas	45	45	45	45	Odorization of Pipelines	Operations include locate and mark, emergency preparedness, and odorization. These activities are intended to address threats as identified by PHMSA.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005010	Systems Minor Additions, Relocations and Retirements					3,694	3,694	3,694		Projects in this budget allow for minor gas distribution main and service additions, retirements, and relocations due to customer requests or as required by SDG&E to support system operation and integrity, retirement of gas mains and services, and expenses for associated street repairs.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005010.03	RAMP - Base / Risk ID 2 - Locate and Mark Field Activities	SDG&E-02	Catastrophic Damage Involving Third Party Dig-Ins	Locate and Mark	225	225	225	225	Locate and Mark	Prevention of damages to substructures due to unsafe excavation practices	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005010.04	RAMP - Incremental / Risk ID 2 - Locate and Mark Field Activ	SDG&E-02	Catastrophic Damage Involving Third Party Dig-Ins	Locate and Mark	0	18	18	18	Locate and Mark	Prevention of damage to substructures due to unsafe excavation practices	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005020	Meter and Regulator Materials					7,077	7,468	7,283		This effort involves the purchasing of new domestic, commercial and industrial gas meters and regulators. These meters are required to provide gas service to new customers as well as replace aging meters for some existing customers. Existing residential gas meter measurement accuracy is monitored by sampling meters in the service territory under the Gas Meter Performance Control Program. Meters are grouped into "families" for monitoring purposes. As these family groups age, they may fall outside prescribed accuracy limits and must be replaced. Budget code 502 provides funds to replace family groups of meters that do not meet strict accuracy guidelines. In addition to the replacements of meters, this budget code includes the costs of additional regulators to replace obsolete regulators.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005030	Pressure Betterment					1,695	1,695	1,695		This budget code provides Capital expenditures for gas distribution system reinforcement or pressure betterment projects required to maintain gas service to all customers. System reinforcement projects are designed to remedy low-pressure problems and/or improve reliability to large single feed areas, to meet load growth. These projects typically involve installing new mains and/or regulator stations, extending high pressure mains or upgrading existing mains to increase delivery pressure.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005040	Distribution Easements					38	38	38		Expenditures under budget code 504 are used 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.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005050	Pipe Relocations - Franchise and Freeway					6,665	6,665	6,665		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.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005060	Tools and Equipment					2,219	2,219	2,219		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 start-of-the-art tools used in training. 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.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005060.02	RAMP - Base Risk ID 16/SDG&E Medium Pressure Pipeline Failure	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Training props	300	300	300	300	Qualification of pipeline personnel	For safety and distribution staff training, props are purchased for use in situation city to simulate real world situations when qualifying personnel.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005060.03	RAMP - Incremental Risk ID 16/SDG&E Medium Pressure Pipeline	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Training props	0	435	214	25	Qualification of pipeline personnel	For safety and distribution staff training, props are purchased to be used in situation city to simulate real world scenarios while qualifying personnel.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005070	Code Compliance					2,549	1,149	1,174		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.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080	Replacements of Mains & Services					5,968	16,940	26,266		This budget code includes the replacement of gas distribution pipelines due to its condition or location. Pipelines with a leak history are evaluated, resulting in a list of projects for replacement under this budget that are ranked by risk. This evaluation uses several criteria to prioritize candidate replacements including observed condition of the pipe, coating deterioration, leak history, age of the pipe, construction methods originally used, and location relative to places of gathering or population centers.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.02	RAMP - Incremental / Risk ID 16 - Early Vintage Steel Replac	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements	0	1,901	5,488	7,385	Early Vintage Steel Replacement	This program is intended to remove pre-1947, non-piggable high pressure pipeline as well as pre-1955 medium pressure steel mains. In the years prior to 1955, cold tar asphaltic wrap was used as the primary protection against corrosion with cathodic protection supplementing as secondary protection.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.03	RAMP - Incremental / Risk ID 16 - Early Vintage Threaded Mai	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements	0	0	7,385	14,774	Pre-1933 Threaded Main Removal	Prior to 1933, piping in the gas distribution system was joined by treaded couplings. This project aims to proactively remove a total of 152 miles of threaded pipe over a 10-year period. This would be a 10-year program to remove 15 miles of pipe per year.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.04	RAMP - Base / Risk ID 2 - Excavation Standby	SDG&E-02	Catastrophic Damage Involving Third Party Dig-Ins	Standby	13	13	13	13	Pipeline Observations (Standby)	Surveillance of excavations in the vicinity of high pressure gas lines to prevent damage	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.05	RAMP - Base / Risk ID 16 - Leak Repair	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	1,000	1,000	1,000	1,000	Leak Repair	Leak repair is the result of leak mitigation and pipeline patrol. This activity involves replacing pipe or components that are leaking.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.06	RAMP - Incremental / Risk ID 16 - Leak Repair	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Maintenance	0	46	46	46	Leak Repair	Leak repair is the result of leak mitigation and pipeline patrol. This activity involves replacing pipe or components that are leaking.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.07	RAMP - Base / Risk ID 16 - EPOCH Planned Replacement of Pipe	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Pipeline projects are prioritized based on condition and performance	2,000	2,000	2,000	2,000	EPOCH	Planned, risk-ranked replacement of pipe with recurring leak history.	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005080.08	RAMP - Incremental / Risk ID 16 - EPOCH Planned Replacement	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Pipeline projects are prioritized based on condition and performance	0	(36)	259	597	EPOCH	EPOCH projects start with a single coded leak repair. When subsequent repairs are made to the same pipe, the segment is added to a risk-ranked list of planned replacements	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005090	Cathodic Protection					1,535	1,741	1,946		Corrosion on pipelines increases the potential for gas leaks and may reduce the useful lives of the pipelines. Cathodic protection is one method for mitigating external corrosion on steel pipelines by imposing an electric current flow toward the surface of a pipeline. This budget code funds the addition of new CP systems and the replacement or upgrade of existing CP systems. Installations include direct current rectifier stations, deep well anode beds, and related equipment.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005100	Regulator Station Improvements and Other					1,688	20,509	25,633		Projects completed under this budget code typically involve upgrades or improvements to distribution piping, pressure regulation or metering stations, valve stations, meter set assembly valve replacements, remote monitoring instrumentation equipment, LNG upgrades, or other gas distribution facilities.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005100.02	RAMP - Incremental / Risk ID 16 - Dresser Mechanical Couplin	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements	0	926	6,952	7,877	Dresser Mechanical Couplings	This program consists of evaluating the coupling field location, excavating, and assessing the weld housing to encapsulate the dresser mechanical couplings main in and near downtown San Diego.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005100.03	RAMP - Incremental / Risk ID 16 - Oil Drip Piping Removal	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements	0	0	9,275	9,275	Oil Drip Piping	This project is designed to verify the location of above ground and buried oil drip lines and containers. As part of the process, SDG&E consults with Pipeline Operations and Region Engineering to determine and remove facilities that are not necessary.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005100.04	RAMP - Incremental / Risk ID 16 - Buried Piping in Vaults	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements	0	0	0	7,719	Buried Piping in Vaults	SDG&E has pipeline buried in vaults that may be corroded by above ground facilities and pitting of below ground piping. This activity will determine the locations vaults containing medium and high pressure facilities. SDG&E will assess the coating and the condition of the above-ground and below-ground facilities within the vaults.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	005100.05	RAMP - Incremental / Risk ID 16 - Closed Valves Between High	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements	0	0	3,520	0	Closed Valves Between High and Medium Pressure Piping	This proposed activity involves verifying the valve location, excavating, and removing the closed and locked valves which connect high pressure piping to medium pressure piping. This budget code is comprised of labor and non-labor costs associated with technical planning for capital projects. This includes production of project drawings, acquiring and managing third party services, and estimating work order costs. This budget code also includes Region Engineering personnel's labor and non-labor costs associated with capital projects as well as other engineering functions including pipeline network analysis, development of pipeline project specifications, developing construction requirements, and analysis of the construction impact on the gas distribution system.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020	Local Engineering Pool					7,247	14,739	20,083			IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020.02	RAMP - Incremental Post Filing / Risk ID 16 - RAMP Proposed	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Local Engineering overhead costs associated with large RAMP proposed projects	0	600	6,928	9,989	Local Engineering - RAMP component	Local Engineering overhead costs associated with large RAMP proposed projects	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020.03	RAMP - Incremental / Risk ID 16 - CP System Risk Algorithm D	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Improvements to Cathodic Protection reliability	0	0	1,027	3,349	Cathodic Protection (CP) Reliability Program	This is a region specific program which will perform a detailed cathodic protection evaluation that will assess the health of the CP system	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020.04	RAMP - Base / Risk ID 3 - Traffic Control	SDG&E-03	Employee, Contractor, and Public Safety	Safety policies and Programs	3,700	3,700	3,700	3,700	Traffic Control Work Group and Equipment	Traffic control for construction work	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020.05	RAMP - Incremental / Risk ID 3 - Traffic Control	SDG&E-03	Employee, Contractor, and Public Safety	Safety Policies and Programs	0	353	353	353	Traffic Control Work Group and Equipment	Traffic Control for construction work	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020.06	RAMP - Base / Risk ID 16 - Gas Standards Review	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Operational Review	68	68	68	68	Gas Standards Review	All procedures in Gas Standards are reviewed yearly for updated regulator information and updating.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	009020.07	RAMP - Base / Risk ID 16 - New Construction QA/QC	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Operational QA/QC	383	383	383	383	QA/QC mostly new construction	Inspections of installed asset, welding/bonding procedure, material verification, gas standards and other construction activities	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	125510	Cathodic Protection System Enhancement					3,915	3,915	3,915		This budget code funds the proactive cathodic protection system improvements and reinforcements in addition to its routine work performed in budget code 509. Cathodic system enhancements are based on internal company assessments. A majority of work involves separating transmission gas mains from distribution gas mains, as well as isolating all high pressure distribution lines. CP system enhancements included in BC 125510 involve the installation of insulated unions to separate CP systems, new rectifiers, anode beds and test points allowing CP technicians to take CP reads.	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	125510.02	RAMP - Base / Risk ID 16 - Maintain CP Assets	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Cathodic Protection	1,095	1,095	1,095	1,095	Requirements for corrosion control	Maintains cathodically protected assets by repairing, replacing, or retrofitting components	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	125510.03	RAMP - Incremental / Risk ID 16 - Maintain CP Assets	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Cathodic Protection	0	965	1,172	1,285	Requirements for corrosion control	Maintains cathodically protected assets by repairing, replacing, or retrofitting components	IN PROCESS
SDG&E	Capital	SDG&E-04	Gina Orozco-Mejia	Gas Distribution	145530	CNG STATION UPGRADES						2,617	2,617		Infrastructure includes canopy structure, lighting, card readers, dispensers, security, and signage; compressed natural gas equipment including compressors, dryers, controllers, valves, piping, and storage vessels; and engineering, design, fabrication, construction, initial testing and start up fees.	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Mussich	Gas Transmission Capital	004010	GT PL NEW ADD-PRE 2004					3,901	3,901	3,901		New pipeline projects include planning, design, permitting, material acquisition, construction, commissioning and impact mitigation for new pipelines and associated valves, fittings, pressure regulating stations and service lines. Projects can range in size and magnitude from a few feet to many miles of large diameter pipeline through urban, suburban, rural or remote terrain within SDG&E's service territory.	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Mussich	Gas Transmission Capital	004140	GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN					2	2	2		This Budget Code contains forecasts for a number of pipeline relocation projects required to meet the regulatory requirements or contract clauses of operating, right of way, franchise, and 3rd party developer agreements. Specific projects with cities and developers are not always clear during the annual budgeting process. These projects can range in magnitude from less than one hundred feet of pipe to accommodate a storm drain or sewer installation to several miles of relocated pipe, fittings, valves and appurtenances needed to accommodate residential development over large tracts of previously undeveloped land throughout our service territory. Throughout the year, SDG&E can be required to relocate pipelines during the same year the request is received by SDG&E due to the immediate needs of third party developers or municipal agencies	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Mussich	Gas Transmission Capital	004160	GT CATHODIC PROTECTION/EXTERNAL DRIVEN					184	184	184		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. Cathodic protection projects may also include the installation of new remote satellite communication technology which allows for more efficient operation and monitoring of the cathodic protection system.	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Mussich	Gas Transmission Capital	004160.01	RAMP - BASE GT CATHODIC PROTECTION/EXTERNAL DRIVEN	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Requirements for corrosion control.	184	184	184	184	Cathodic Protection	Install cathodic protection (anodes, rectifiers, etc.) to protect high pressure pipelines	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Mussich	Gas Transmission Capital	004180	M&R Stations					691	691	691		Typical expenditures includes the instrumentation necessary for the metering or regulating of natural gas in connection with transmission operations and, in particular, costs associated with additions or replacements of station piping, valves, regulators, control and communications equipment, shelters and enclosures.	IN PROCESS

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SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M04120	MP PL REPLACE/EXTERNAL DRIVEN					1,505	1,505	1,505		Projects in this Budget Code 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. This forecast is for multiple smaller projects varying in scope and pipe size but not qualifying for separate work papers. Also included are projects to replace pipelines due to class location changes	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M04120.01	RAMP - Base Blanket WOA	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Gas Transmission Operations	1,505	1,505	1,505	1,505	HCA Class Location Followup Mitigation	HCA identification relies on pipeline-specific information regarding the location, size, and operating characteristics of the line, as well as the identification of structures, specified sites, and their intended usage along the pipeline right-of-way	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M04150	MP COMP STA ADD/RPL / EXTERNAL DRIVEN					1,552	1,552	1,552		Individual project scopes can consist of one or a combination of the following installations: engine control panels, oxidation catalysts, evaporative ponds, cooling tower, blowdown silencer, station auxiliary systems, turbos, station physical security, and clearance pockets.	IN PROCESS
SDG&E	Capital	SDG&E-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M04350	MP COMP STA ADD/RPL /QUALITY-ECON DRIVEN					2,863	2,563	2,413		Activities include permitting, environmental and detailed engineering design. Other capital improvements includes routine and bulk work that is forecasted based on the 5 year average cost.	IN PROCESS
SDG&E	Capital	SDG&E-11	Maria T. Martinez	TIMP & DIMP	034680.01	RAMP - Base BC 3468 is SDG&E TIMP	SDG&E-10	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	TIMP IL/ECDA	3,658	3,997	3,997	4,000	TIMP	TIMP IL/ECDA	IN PROCESS
SDG&E	Capital	SDG&E-11	Maria T. Martinez	TIMP & DIMP	095460.01	RAMP - Base BC 9546 is SDG&E DIMP DREAMS	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Distribution Integrity Management Programs - DREAMS	22,346	20,219	20,219	22,346	DIMP DREAMS	Distribution Integrity Management Programs - DREAMS	IN PROCESS
SDG&E	Capital	SDG&E-11	Maria T. Martinez	TIMP & DIMP	095460.02	RAMP - Incremental BC 9546 is SDG&E DIMP DREAMS	SDG&E-16	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	DIMP DREAMS	0	0	0	22,654	RAMP - Incremental BC 9546 is SDG&E DIMP DREAMS	DIMP DREAMS	IN PROCESS
SDG&E	Capital	SDG&E-22	R. Dale Tattersall	Real Estate, Land Services & Facilities	00701A.004	Mission Skills Training Site Upgrades					403	605	504		SDG&E Skills Training Center is a combined site and classroom based facility that provides training of electric, gas, customer service, project planning and inspection resources. The objective and focus of this project is to improve the site training facilities needed to develop the skills of current and future electric field employees (e.g. lineman, electric troubleshooter, fault finder, substation electrician, etc.). The current site training facilities were originally designed to primarily meet apprenticeship and journeyman training requirements and need to be improved to incorporate training for new technologies and equipment. More efficient space planning and increased infrastructure flexibility is necessary to allow employees to train on new equipment standards before encountering in the field, receive periodic refresher training for reinforcement of safe work methods and compliance with electric standard practices, and concurrently serve a greater mix of employee groups. The project scope will therefore include a redesign of the existing training yard utilization, new training and testing locations, upgrades to existing training equipment, and expanded equipment storage and accessibility.	IN PROCESS
SDG&E	Capital	SDG&E-22	R. Dale Tattersall	Real Estate, Land Services & Facilities	00710A.003	Miramar Welding Room Expansion						1,088	3,023		This project will construct a new facility to replace an existing aged and inadequate facility, thereby creating a safer, more efficient environment for employees and contractors to participate in welding qualification and training, and allowing for increased throughput of qualified and certified welders necessary to maintain compliance with governing regulations and standards. The existing facility is comprised of a 3-sided metal building structure that is protected by the elements only by retractable tarp. Only 8 hands-on welding training booths are available and they alternate between each of arc and oxy-acetylene welding training. Wind poses a risk to training safety as well as the spread of particulates outside of the welding environment. There is no classroom or office space for instructors. The project scope will increase welding booths up to 24, split between dedication to arc and oxy-acetylene welding training, provide classroom space for operator qualification and welding training classes, and office space for the welding instructors to organize instruction materials and maintain training records. These new areas will allow arc and oxy-acetylene welding training to be conducted concurrently, and classroom training to be conducted at the same time as hands-on training, thereby yielding an increased number of welders qualifying at the same time.	IN PROCESS
SDG&E	Capital	SDG&E-22	R. Dale Tattersall	Real Estate, Land Services & Facilities	00710A.004	Mission Critical Facility Consolidation & Expansion						1,496	3,540		The objective of the project is to unify critical 24/7 operations control functions into a singular facility, constructed with high level seismic resistivity and physical security measures to increase the hardening and protection of these facilities and internal assets. Functions to be housed at this facility would include, but not be limited to, Grid Control, Distribution Operations, IT Network operations and Emergency Operations Control. The existing facilities providing these functions would be redeployed as back-up operations, thereby improving the capabilities of back-up functions, as well. Costs proposed in this rate case submittal would be to initiate design and permitting processes, only.	IN PROCESS
SDG&E	Capital	SDG&E-22	R. Dale Tattersall	Real Estate, Land Services & Facilities	16768A.001	CP East Tenant Improvements					10,943				The project includes technology infrastructure upgrades and a complete demolition and remodel of the existing office space. Tenant improvement construction will include prefabricated modular walls and raised floor for flexibility of space utilization, a new HVAC distribution system and lighting, information systems distribution (routers, switches, wireless access points and cabling), audio visual technologies, security and surveillance systems, and furniture to meet current company ergonomic standards. This workpaper includes the 2017 cost component, only, of the project, which has an overall estimated cost of \$24.5M and commenced in 2016.	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00811H	T16033 POWER YOUR DRIVE/ENTERPRISE FUNCTIONALITY						1,513			The project scope includes upgrades that are PYD specific and charged to the PYD balancing account (web Enrollment and My Account modifications, meter/charger inventory tracking, Service Orders (account holder start, stop, change service as well as meter/charger repair/replacement, and Finance/Credit), as well as Enterprise assets that shall support 3rd party meter read accuracy and hourly TOU pricing and bill calculations.	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813A.01	RAMP - INCREMENTAL T16045 CPD ENHANCEMENTS PHASE 3	SDG&E-13	Records Management	IT	0	129	0	0	IT	IT	IN PROCESS

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SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813A.02	RAMP - INCREMENTAL T16045 CPD ENHANCEMENTS PHASE 3	SDG&E-13	Records Management	IT	0	7,805	0	0	IT	IT	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813A.03	RAMP - INCREMENTAL T16045 CPD ENHANCEMENTS PHASE 3	SDG&E-13	Records Management	IT	0	0	888	0	IT	IT	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813B.01	RAMP - INCREMENTAL T16035 CMP SAP ENHANCEMENT	SDG&E-13	Records Management	IT	0	1,023	0	0	IT	IT	IN PROCESS
<p>The initiatives that will have an impact on E&FP, IT and vendor efforts during 2017 have been identified based on the RUG process of the ISO, and include:</p> <ol style="list-style-type: none"> 1. Automated Dispatch System (ADS) Technology Upgrade (Internal E&FP effort) 2. Commitment Cost Enhancements Phase 3 (Opportunity Cost Adder for Use Limited Resources) 3. Contingency Modeling Enhancements- Bid Cost Recovery (BCR) Implications - special case 4. Reliability Services Initiative/Capacity Procurement Mechanism (RSI/CPM) Phase 1B/2 (Impact to PCI Resource Adequacy (RA) Non SE Outage Screen), and Verify application) 5. Bidding Rules Enhancements Part B 6. Also Canyon 7. Regional Resource Adequacy Planning (PacifiCorp joining in 2019 will require this capability in 2017) 8. Cost Allocation Mechanism (Verify/ Allegro impact) 9. CPUC Resource Adequacy (Verify Impacts) 																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813D	T19015 E&FP 2017 CAISO Mandates					941	426				IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813F.01	RAMP - INCREMENTAL T19011 Patrol Inspect Auto Corrective Mai	SDG&E-13	Records Management	IT	0	646	0	0	IT	IT	IN PROCESS
<p>Deliver 153 SCG and SDG Gas Operations self-service reports and ad-hoc reporting capabilities Automate the acquisition, validation, and integration of data from SAP Plant Maintenance, ClickSchedule, KorTerra, MyTime, Franson GPSGate, ARCOS, and SAP FI/CO within SAP HANA Implement information Steward (Data Dictionary) for GOPA reports</p>																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00813I	T15073 SDGE GOPA Phase 3					110					IN PROCESS
<ol style="list-style-type: none"> 1. Manage finance for the business to test and replace a subset of existing RMS900 RTUs in critical sites 2. Replace 1788 GE end point radios, 30 radio masters and 200 repeater radios including SDGE Electric Distribution, SDGE Gas Transmission 3. Expand SCADA radio coverage with a potential to reduce the number of repeater sites. Number of repeaters to be reduced is pending RF analysis 4. Address backhaul capacity constrains (San Clemente to Encina, Rattlesnake, Borrego and Los Pinos) 5. Repeaters moved to licensed spectrum where available 5. Address issues with SCADA backend ACS Servers 																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00827B	T15080 SCADA RADIO REPLACEMENT & EXPANSION					1,861					IN PROCESS
<p>The build will consist of the following capabilities: 900 MHz, 800 MHz, and 450 MHz radios (excludes radio consoles): two (2) for the workspace and one (1) in conference room (3 total) Iridium satellite phones with external antennas and attached analog phones. One (1) for each workspace and one (1) in the conference room. With speaker available on the analog phone or speaker phone capability in conf room. Direct TV: 2 receivers Monitors - AV matrix switch from any of the stations in the trailer to one or many of the monitors. 2 MiFi devices for the interim. 1 Verizon & 1 AT&T Users will use MDTs with cellular data cards Office supplies, printer etc. 4G/LTE and satellite voice and data backhaul to the Sempra Corporate network. Add ability for IT Network Operations Center (NOC) to provide remote network and power management support</p>																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00829A	T16050 SDGE ENHANCED MOBILE COMMAND TRAILER					95					IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00829B	T16055 EMERGENCY FIELD COMMUNICATION SERVICES					1,272					IN PROCESS
<p>Satellite - 5 quickly deployable trailers Microwave - 5 quickly deployable trailers Standards for Satellite and Microwave Comm Trailer Cell on Wheels and Fly Away Kit for cellular voice coverage</p>																
<p>Provide a software solution to perform the following functions: Create a central repository and reporting for Gas Customer Choice capabilities. Manage gas core and non-core imbalance reporting and customer communications, contract maintenance. Enable gas curtailment processes including analysis of available load, event monitoring, and violations reporting.</p>																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00831B	T19004 Gas Customer Choice Automation (GCCA)						1,216	310			IN PROCESS
<p>Replace IBM database servers. The MDMS application software will be upgraded from IEE 7.0 (Itron Enterprise Edition) SP4.0 HF10 to the current release IEE 8.1 or later. The OWCE application software will be upgraded from OWCE 3.9 HF3 to the current release OWCE 6.6. Define the overall Smart Meter testing methodology and develop test automation for end-to-end Smart Meter system testing. This improved Smart Meter testing process will ensure that these systems are thoroughly tested during this project and will provide the process and tools required for ongoing software release testing and Smart Meter configuration and firmware testing in the future. Provide analysis and if warranted, report recommendations to enhance business operations and streamline applications through additional configuration of available MDMS functionality.</p>																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00831I	T15064 SMART METER SYSTEMS UPGRADE					3,340	480	480			IN PROCESS
<p>The SDG&E Smart Meter Network consists of approximately 2,800 operational Itron OpenWay radio frequency local area network (RFLAN) 3G Cell Relays. The Cell Relays provide routing functions for over 2.2 million existing Company RFLAN electric and gas meters. The majority of the existing Cell Relays are near the end of their useful life. Reportedly, in Q1 of 2019 Verizon will discontinue support of 3G communication devices and in Q1 of 2020, AT&T will follow suit. If the Cell Relays are not replaced with 4G or better communication technology, the network will stop communicating. Additionally, greater efficiency and new revenue opportunities exist with modernizing our network capabilities. The existing Smart Meter Network is not capable of supporting additional communication devices limiting functionality and scalability to support newer technologies, e.g. Internet of Things (IoT) sensors, methane gas sensors, 3rd party devices (water meters, street lights, EV charging stations, solar inverters, etc.).</p>																
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00831P	T19047 Smart Meter Network Modernization						4,866	10,215			IN PROCESS

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SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00832B	T16034 SMART METER NETWORK ENHANCEMENT					2,534				This project will overlay a new internet protocol version 6 (IPv6) communications infrastructure designed for different device types enabling new functionality and services. This new infrastructure would permit the Company to add new capabilities and revenue sources not specifically related to metering. The project will deliver a field area network upgrade path which facilitates the integration of new multi-vendor meters, Internet of Things (IoT) sensors, as well as having the ability to provide connectivity services to 3rd party devices (e.g., methane gas sensors, water meters, street lights, EV charging stations, solar inverters, etc.).	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00833B.01	RAMP - INCREMENTAL T16040 SORT EXTENSION	SDG&E-13	Records Management	IT	0	52	0	0	IT	IT	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00833B.02	RAMP - INCREMENTAL T16040 SORT EXTENSION	SDG&E-13	Records Management	IT	0	1,609	0	0	IT	IT	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00833J.01	RAMP - INCREMENTAL T19023 CPD Enhancement Phase 4	SDG&E-13	Records Management	IT	0	0	9,954	0	IT	IT	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00833J.02	RAMP - INCREMENTAL T19023 CPD Enhancement Phase 4	SDG&E-13	Records Management	IT	0	0	0	9,954	IT	IT	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00833M	T17003 FoF - ET & Substation Project Lifecycle					3,064	4,943	4,089		New functions or groups established to support end to end process (project management COE, QA/QC, work and resource management) Existing organization redesigned to support end to end processes (per output from up front organizational assessment) Improved control using formalized project stage gates Standardized Work Breakdown Structure (WBS) for capital work Capital planning extended further into the future to allow increased visibility Defined work and resource management processes and procedures to balance supply and demand of project work Project management best practices are formalized and tracked Tools integrated to support end to end process Consistent data sources and defined "sources of truth" to ensure clear visibility into costs, resources, and project information	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00834E	T19012 LTE Communications Network						22,889	50,262		Implement a private LTE network that can be expanded in stages, as needed, to provide communications capability in traditionally difficult to reach locations in addition to providing a wireless network with broadband capabilities for a variety of uses - voice, SCADA, Advanced SCADA, pipeline integrity and others.	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00834F	T16024 2016/2017 SDGE MDT TECHNOLOGY OBSOLESCEN					1,015	160			This project will replace approximately 235 units in 2016 and 294 units in 2017 used by various organizations throughout SDG&E. This replacement is being done in accordance with guidelines outlined in the MDT standards for MDT life cycle, due to the environment in which units are used on a daily basis, and because of their general condition at the end of four years. The technology will be evaluated to insure users will be able to take full advantage of new features being developed in field applications such as Click Mobile and GIS Mobile	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00834H	T15088 SDGE ENTERPRISE DESKTOP REFRESH					2,928				Procure/configure/deploy ~3300 Windows 10 workstations to office-based SDGE employees. Workstations include combination of desktops, laptops and tablets; laptops will be provided in "bundle" to include dock, adapters/dongles, headset, case. One workstation per employee. An allowance for replacement of ~10% of monitors/peripherals is included. Perform foundational work to support above deployment, including Windows 10 image development and testing. Assess, test, remediate and validate applications compatibility on Windows 10 platform. Remediation could include minor code changes, application virtualization (App-V), or other workarounds (ie, VDI running Win 7). Deploy Office 365 tools to same users as part of desktop refresh, including but not limited to: OfficeProPlus, Skype for Business, SharePoint Online, OneDrive, Delve. Project has strong dependency on Office 365 Adoption Project for organizational change management. Update CMDDB and solidify asset management process to ensure accurate asset tracking	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00834I	T19014 SDGE FAN Voice and Dispatch					9,659	9,816	11,968		Replace mission critical analog radios and consoles with digital capable equipment, refresh analog base stations to digital base stations, and provide high available radio infrastructure for disaster recovery purposes. Project will include expansion of the current radio coverage area and will replace leased.	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	00834O	T19027 Transmission Communications Reliability Enhancement - Phase II					6,769	12,711	14,631		Phase II of this project will complete the design, implementation, and commissioning of infrastructure developed during Phase I of this project. The remaining Electric Transmission substations (~100) and associated transit communication sites are included within the scope of this project. All remaining legacy telecommunications equipment will be decommissioned and removed from the field. Services such as LMR, LPCN and SCADA Radio are out of scope for this project	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	03849A	T19031 FoF - IVR Project					652				This project will add Fumigation turn-off self-service function, streamline appliance service orders flow to improve self-service and customer experience, and to match the new streamline ASO process. This project will reroute credit excessive-repeat callers to self-service, insist callers to specify the purpose of their calls before transferring callers to agents. This project will expand emergency menu to include detailed emergency types, quickly post gas odor messages to help customers self-service. This project will quickly post outage information regarding outage start time, cause, restoration time and numbers of callers.	IN PROCESS
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	03849B	T19030 FoF - KANA Enhancements and Online Training					1,360				To functionalize and integrate existing features within the KANA Enterprise Bundle (Case Management, Live Chat, E-Mail). To implement computer based training for onboarding Energy Service Specialists. Integrate KANA products into existing applications that are currently used. For on-line training: Secure vendor for on-line training.	IN PROCESS

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SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	03851A	T19035 FoF - Business Process Management (BPM) Automation					2,259				Install system for SDGE only. Note 1: SCG concept doc exists for entire enterprise - this one needed for SDGE if SCG doc is not approved. Note 2: if PegaSystems is selected solution, potentially migrate from cloud instance to on premise). Integrate with HR Repository and SAP to synchronize various approval hierarchies. Develop APIs (if not already pre-built) to facilitate BPM integration with major systems, depending on prioritized use cases - SAP (ECC, CPD, etc.), CISCO, GIS, Click, SORT, etc.. Develop core set of workflows to address various business use cases. Design/implement organizational support model to sustain and grow capability.	PLANNED	
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	03852A	T19032 FoF - Unmanned Aerial System (UAS) Analytics					1,362	1,684			Design, develop and implement IT application and infrastructure solution to support growing UAS requirements and demand. Scope encompasses the "lifecycle" of UAS imagery data: - Architecture: reference architecture (capabilities), data architecture, applications/systems architecture - Capture: How data will be initially captured from UAV and uploaded into SDGE systems - Storage: Most likely in "data lake"; make imagery data searchable and available for consumption by multiple applications, users; requires ingest process, metadata tagging, integration, retention rules, etc. - Analytics: Applications to analyze imagery data (images, video, LIDAR). May be multiple tools, and could be insourced or outsourced - Integration: With core systems as needed/prioritized: GIS, SAP, PowerWorks, etc. - Distribution: Providing potentially large volume of imagery data either real time or post-capture via video stream or similar bandwidth intensive channel. Impacts could be to wired and wireless networks, and may include satellite communications in field.	PLANNED	
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	15869A	T15869 SMART GRID ENDPOINT PROTECTION					218				Develop and test proper endpoint protection policies and processes for each use case (connected/disconnected). Add hardware and licensing to SDG&E's remote privileged access management technology to support Smart Grid applications. Establish new internal remote access process and procedures for internal and external vendors and administrators	IN PROCESS	
SDG&E	Capital	SDG&E-24	Christopher R. Olmsted	Information Technology	16871A	T16028 SMART METER NETWORK DEVICES					725	475			Purchase and installation of Smart Meter Network Devices to enable communication of company metering equipment.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001510	New Business Construction					35,935	44,616	49,696		The activities of this category include installation of gas mains and services, meter set assemblies, regulator stations and the associated facilities necessary to provide service to new customers.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001630	Meters					16,289	22,206	29,838		A meter is the device that measures the customer's gas consumption. Meter types purchased within this budget code include diaphragm, rotary, turbine, and ultrasonic. Meters are grouped into two sizing groups, where the small and medium size meters are referred to as "size 1 through 3" meters, and the other being the large size meters referred to as "size 4 and above" meters. Size 1 through 3 meters are typical of residential and small commercial customers. The size 4 and above are typical of large commercial and industrial customers.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001640	Regulators					3,733	4,962	5,128		Gas regulators are purchased for two primary purposes, new business installations and replacements. When choosing a pressure regulator many factors are considered before selecting a model. Important considerations include: material choice, inlet operating pressure, outlet delivery pressure, flow capacity, temperature, and size constraints	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001730	Cathodic Protection (CP) Capital					6,320	8,434	9,511		Typical projects for this workgroup include the capital expenditures associated with the installation of new and replacement cathodic protection stations and applying cathodic protection to existing steel mains and service lines. This includes the additions of new rectifier (impressed current) sites along with associated anode installations including the necessary cathodic protection instrumentation and remote monitoring equipment; shallow well and deep well anode bed replacements for existing rectified systems; as well as installation and replacement of larger surface bed magnesium anode systems.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001730.03	RAMP - Base - Risk ID SCG-10/SCG Medium-Pressure Pipeline Fa	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Systems are in place to monitor and manage compliance activity schedules		3,727	3,908	5,096	5,590	Cathodic Protection (Per Region)	System Protection of all distribution system	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001810	Electronic Pressure Monitors (EPM)					829	909	577		An Electronic Pressure Monitors (EPM) is a unit made for the purpose of measuring and recording gas pressure within a gas pipe via a connected gas transducer sensor. The unit has a box shaped shell cover that protects the internal circuitry from environmental hazards. After initial installation, this device is placed on an annual maintenance plan which includes inspection of the battery pack serving as the source of power for most EPMs. Currently, this device is commonly connected to a telephone hardline. These devices will be converted to operate using the Advance Metering Infrastructure (AMI) network. The line of communication is what allows the EPM device to send pressure data logs to a calling computer, at which point, the pressure data can be electronically reviewed, analyzed, stored, and archived. These EPM units are commonly affixed to wall-mount and pole-mount configurations.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	001820	Remote Mtr Reading					727	2,032			This category includes CSF labor and associated non-labor costs for the replacement of curb meters. CSF labor includes field technicians who perform the meter replacement work, supervision and management support staff.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002510	Pressure Betterments - Routine					23,088	23,088	23,088		Pressure betterment projects typically involve one or more of the following: • Installing new mains. • Upsizing existing mains. • Upgrading existing mains to higher pressure. • Installing new regulator stations. • Upsizing existing regulator stations.	IN PROCESS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002520	Main Replacements					33,711	33,711	33,711		The distribution medium pressure system is comprised of approximately 47,093 miles of steel and plastic pipeline constructed between the early 1920s and the present, and ranges in diameter from 1-inch to 16-inch. These mains support the delivery of gas to more than 5.9 million customers. Pipeline replacement projects include: • The installation of new mains to replace existing mains. • Service line replacements associated with main replacements. • Existing service line "tie-overs" to newly installed replacement main. • Meter set re-builds associated with newly installed replacement main. • Main replacements completed in advance of public infrastructure improvement projects.	IN PROCESS	

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SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002520.02	RAMP - Base - Risk ID SCG-02/SCG Employee Contractor Custome	SCG-02	Employee, Contractor, Customer, and Public Safety	Contracting for Traffic Control Delineation materials	2,199	2,146	2,146	2,146	Contracting for Traffic Control Delineation materials -- Distribution Only	Contracting for Traffic Control Delineation materials	IN PROCESS
															Abandonment of mains and services can only occur when abandonment of the pipeline is deemed to not 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 extremes of the section of pipe in order to isolate from gas flow.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002540	Main & Service Abandonments					9,256	10,522	11,787		Abandonment of service lines is accomplished by cutting and capping at the service-to-main connection.	IN PROCESS
															SoCalGas has approximately 49,516 miles of service pipe. These distribution service lines are used to transport gas from a common source of supply to an individual residence, or to two adjacent or adjoining residences, or a small commercial customer. It is also common to serve multi-residential buildings and multi-commercial customers through a meter header or a manifold. A service line ends at the end of the customer meter or at the connection to a customer's piping, whichever is further downstream.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002560	Service Replacements					28,538	31,470	34,403			IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002560.02	RAMP - Base - Risk ID SCG-10/SCG Medium-Pressure Pipeline Fa	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	MSA Inspections	1,765	2,150	2,258	2,526	Meter Set Assembly (MSA)	Maintenance and inspections of meter set assemblies in the system. Per region basis	IN PROCESS
															Gas pipeline relocation projects are performed to establish adequate clearance to accommodate freeway construction improvements and/or expansions. These pipeline relocation projects include all sizes of distribution main and associated service lines, meter set assemblies and related gas facilities. Freeway relocation projects include altering: • Pipeline crossing over and under a freeway bridge span. • Any gas facility interfering with construction and located within CalTrans' right-of-way. • Any gas facility outside of CalTrans' right-of-way deemed to interfere with freeway construction.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002610	Pipeline Relocations - Freeway					7,837	7,837	7,837			IN PROCESS
															Franchise related pipeline relocation projects are performed to establish adequate clearance to accommodate public works construction improvements and/or expansions. These pipeline relocation projects include all sizes of distribution main and associated service lines and related pipeline facilities including meter set assemblies. Some examples of the type of municipality work that drives franchise pipe relocations include: • Street widening, resurfacing, or repairs. • Storm drain work. • Municipal water work. • Sewer work.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002620	Pipeline Relocations - Franchise					17,894	17,894	7,894			IN PROCESS
															Meter guards consist of pipeline compatible materials with sufficient structural integrity to guard against damage to meter set assemblies. Posts installed into the ground with welded cross braces, usually made of steel pipe, are fabricated and installed by SoCalGas field crews and contractors	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002640	Meter Guards					359	8,299	8,299			IN PROCESS
															Regulator Stations are key assemblies of control equipment on the SoCalGas pipeline system. They are installed to reduce the pressure of gas from high-pressure pipelines to provide the lower pressures used on the distribution pipeline system, which provides steady continued operating conditions to the customer. These stations consist of pipes, electronics, valves and regulators, which are installed in either below-ground vaults or above-ground fenced facilities, and in some instance inside specially built housing. These stations not only serve to control gas pressure but also as a line of defense against over-pressurization. Many of the modern stations are design with dual run feeds to maintain continued operation of the station in the event of a failure within either of the two runs.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002650	Regulator Stations					8,636	14,636	19,436			IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002650.02	RAMP - Base - Risk ID SCG-04/SCG High-Pressure Pipeline Fail	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Systems are in place to monitor and manage compliance activity schedules.	179	185	185	185	Regulator Station Inspection and Maintenance	Inspect regulators to ensure Overpressure Protection is in place and maintained	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002650.03	RAMP - Base - Risk ID SCG-10/SCG Medium-Pressure Pipeline Fa	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Systems are in place to monitor and manage compliance activity schedules	318	42	42	42	Measurement & Regulation and maintenance	Inspect regulators and gauges to ensure overpressure protection is in place and maintained.	IN PROCESS
															The distribution supply line system is comprised of approximately 3,700 miles of high-pressure pipeline constructed between the early 1920s and the present, and ranges in diameter from 2 inch to 30 inch. These supply lines normally operate at pressures higher than 60 psig. Projects in this workgroup include replacements of pipelines and associated facilities within the supply line system.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002670	Supply Line Replacements					4,209	4,209	4,209			IN PROCESS
															These facility relocation projects include all sizes of distribution main and associated service lines, meter set assemblies and related gas facilities. Examples of these "other" projects include, but are not limited to: • Replacement or alteration and abandonment of appurtenance to mains such as valves and vaults, drips, traps, roads, and fences due to condition in order to maintain the reliable operation of the distribution system. • Raising, lowering or relocating main due to interference with external party construction. • Changes to Company facilities at customer request. This could include items such as alteration or relocation of main or meter set assemblies; installation of customer exclusively used mains, or moving or relocating regulator stations. • Changes to SoCalGas facilities in accordance with right-of-way agreements, encroachment permits, and railroad crossing lease agreements.	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002700	Other Distribution Capital Projects					3,297	3,297	3,297			IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002700.03	RAMP - Base - Risk ID SCG-10/SCG Medium-Pressure Pipeline Fa	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Systems are in place to monitor and manage compliance activity schedules	5	13	5	5	Valve Inspection and Maintenance (Per Region)	Maintenance and Inspection of Valves	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002700.04	RAMP - Base - Risk ID SCG-04/SCG High-Pressure Pipeline Fail	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Maintenance	21	22	22	22	Valve Maintenance and Installation (Distribution High Pressure)	Maintain valves with lubrication and servicing, and replace or install valves required for compliance	IN PROCESS
															Gas Energy Measurement Systems (GEMS) provide the electronic means to compute and accumulate corrected volumetric measurements. They also have the ability to provide gas volume corrections based on "live" temperature measurement, provide audit trail capabilities, and some models provide remote communication capabilities. These devices are configured to fit the requirements of each GEMS field site. Proper pressure and temperature transducers need to be considered, as well as casing size and mounting configuration. The types of GEMS included in this category are: Electronic Correctors, little GEMS, big GEMS, and new generation GEMS	
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	002800	Gas Energy Measurement Systems (GEMS)					1,415	1,470	1,494			IN PROCESS

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SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	007250	Capital Tools & Equipment - Routine					14,386	14,220	12,322		Routine tool and equipment purchases are used by the gas distribution field, meter shop, fabrication & repair shop, measurement & controls, and other departments to efficiently and safely install and maintain the gas distribution system	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	007250.02	RAMP - Incremental - Standardizing locate and mark tools use	SCG-01	Catastrophic Damage Involving Third Party Dig-Ins	Prevention and Improvements	0	3,800	2,500	0	Standardize Locate & Mark Equipment	Standardize locating tools used by Locators by replacing aging tools	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	007250.04	RAMP - Incremental - Upgrade Nomex coveralls and fresh air	SCG-02	Employee, Contractor, Customer, and Public Safety	Upgrade Nomex Coveralls & Fresh Equipment	0	1,667	0	0	Upgrade Nomex coveralls and fresh air equipment	Replace all current Nomex and fresh air equipment	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	007250.05	RAMP - Incremental - Confined space air monitoring system f	SCG-02	Employee, Contractor, Customer, and Public Safety	Confined space air monitoring system for field personnel	0	0	1,100	0	Confined space air monitoring system for field personnel	Replace 280 confined space monitors in 2018. Replace 380 personal monitors in 2018. 100 calibration gas cylinders purchased per year	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	009030	Field Capital Support					61,317	70,292	74,618		Traditional work elements recorded to this budget 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.	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	009030.02	RAMP - Base - Risk ID SCG-02/SCG Employee Contractor Custome	SCG-02	Employee, Contractor, Customer, and Public Safety	Med Pressure Company Crew Inspections	59	58	58	58	Medium Pressure Company Crew Inspections	FOS and Team Leads will complete inspections on company crew work	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	009030.03	RAMP - Base - Risk ID SCG-10/SCG Medium-Pressure Pipeline Fa	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Systems are in place to monitor and manage compliance activity schedules	72	83	86	108	Utility Conflict Review (Right of Way)	Review right of way and other conflicts and resolve these matters	IN PROCESS
SoCalGas	Capital	SCG-04	Gina Orozco-Mejia	Gas Distribution	A01510	New Business Trench Reimbursement					697	697	697		In conjunction with the installation of gas facilities (mains and services, meter set assemblies, and the associated regulator stations) necessary to provide service to the customers, a trench in which the pipeline is placed must be developed. If SoCalGas develops the trench the costs are included in the new business construction costs. If the customer provides the trench SoCalGas reimburses the customer for this cost. This workpaper covers only the latter.	IN PROCESS
SoCalGas	Capital	SCG-06	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003090.04	RAMP - Incremental Blanket projects	SCG-06	Physical Security of Critical Gas Infrastructure	Operations Mitigation	0	1,883	3,648	6,080	Operational Resiliency	Develop and implement operational flexibility, which may include redundant pipeline system capabilities, backup equipment and resources, resumption planning and exercises	IN PROCESS
SoCalGas	Capital	SCG-06	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003090.04	RAMP - Incremental Blanket projects	SCG-06	Physical Security of Critical Gas Infrastructure	Physical security measures put in place for the security/safety of employees and infrastructure	0	594	1,152	1,920	Physical Security Systems	Physical security measures put in place for the security/safety of employees and infrastructure	IN PROCESS
SoCalGas	Capital	SCG-06	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003160.01	RAMP - Base Gas Transmission Cathodic Protection / External	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Requirements for corrosion control	504	1,927	1,729	1,219	Transmission Cathodic Protection	install cathodic protection (anodes, rectifiers, etc.) to protect high pressure pipelines	IN PROCESS
SoCalGas	Capital	SCG-06	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	00308A.01	RAMP - Base Valve Maintenance and Installation	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Valve Maintenance and Installation	5,713	0	0	0	Valve Maintenance and Installation (Transmission)	Replace or retrofit of capital equipment to allow for effective valve servicing.	IN PROCESS
SoCalGas	Capital	SCG-06	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	00309A.01	RAMP - Incremental Real time monitoring of land movement via	SCG-09	Climate Change Adaptation	Strain Gauge Installation Projects	0	396	396	400	Strain Gauge Installation Projects	Real time monitoring of land movement via stress acting on infrastructure	IN PROCESS
SoCalGas	Capital	SCG-06	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M03120.19	RAMP - Base Blanket WOA	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Gas Transmission	5,000	3,935	9,026	1,890	HCA Class Location Follow-up Mitigation	HCA's for natural gas pipelines focus on populated areas which affects class location. HCA identification relies on pipeline-specific information regarding the location, size, and operating characteristics of the line, as well as the identification of structures, specified sites, and their intended usage along the pipeline right-of-way	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003010	GT - New Construction					8,543	7,383	7,383		(003010.01 El Segundo Loop) - Installation of new pipe, valves, and fittings connecting existing transmission pipelines on the east in the City of El Segundo thereby creating a transmission pipeline "loop" in the El Segundo area. This solution provides not only the necessary incremental capacity but a level of redundancy that is currently lacking, insuring more reliable service.	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003040	GT - Pipeline Relocations - Franchise/Private					11,584	10,464	5,834		(003010.02 Blanket WOA) - multiple smaller Transmission pipeline projects that arise typically on short notice.	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003080	GT - M&R Stations					18,938	18,938	18,938		Relocating pipe. Typical expenditures includes the instrumentation necessary for the metering or regulating of natural gas in connection with transmission operations and, in particular, costs associated with additions or replacements of station piping, valves, regulators, control and communications equipment, shelters and enclosures. This project includes adding and/or replacing critical valves in large pressure regulating stations to comply with federal class location regulations. Also included are local projects to replace or upgrade customer metering sites and large pressure regulating equipment due to age and/or obsolescence	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003090	GT - Aux Equipment					10,314	8,700	12,350		Included are local controls and communication devices such as programmable logic controllers (PLCs), pressure transmitters, gas quality remote sensors, communication interfaces/technologies, intrusion monitoring & alerting systems and real-time video monitoring. This equipment is used to control the flow of gas in pipelines, valves and regulator stations both locally and through the initiation of remote commands and for enhanced security for remote sites where transmission facilities are either above ground or reside in concrete vaults	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003130	GT PL Reloc-Fway / Externally Driven					12	12	88		Relocate and replace pipelines and related facilities found to be in conflict with Caltrans construction projects. Individual projects will vary from less than \$10,000 to as high as multiple hundreds of thousands of dollars.	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	003160	GT Cathodic Protection / Externally Driven					5,000	6,235	6,658		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. Cathodic protection projects may also include the installation of new remote satellite communication technology which allows for more efficient operation and monitoring of the cathodic protection system.	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M03050	MP Comp Sta Add/Rpls/Pre 2004					193	193	193		Individual project scopes can consist of one or a combination of the following installations: replacing the pneumatic and electro-mechanical control systems and related station auxiliary systems, installation of new engine control panels, new station control panel and replacement of sensors, wiring, industrial communications and local controllers. New Programmable Logic Controllers, local control networks, operator interfaces, continuous emissions monitoring (CEMS), precombustion chambers, and new catalysts.	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M03120	MP PL Rpls / Externally Driven					30,194	26,358	10,499		Projects in this Budget Code 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. This forecast is for multiple smaller projects varying in scope and pipe size but not qualifying for separate work papers. Also included are projects to replace pipelines due to class location changes	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M03150	MP Comp Sta Add/Rpls / Externally Driven					11,818	17,875	11,150		Individual project scopes can consist of one or a combination of the following installations: engine control panels, oxidation catalysts, evaporative ponds, cooling tower, blowdown silencer, station auxiliary systems, turbos, station physical security, and clearance pockets	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M03250	MP Comp Sta Add/Rpls / Volume Driven					1,283	1,283	1,283		This work paper represents multiple smaller projects not qualifying for their own work paper and is based on recent experience in maintaining compressor-related equipment through capital component replacements and upgrades.	IN PROCESS
SoCalGas	Capital	SCG-07	Michael Bermel & Elizabeth Musich	Gas Transmission Capital	M03350	MP Comp Sta Add/Rpls / Quality/Economic Driven					37,138	84,000	104,000		SoCalGas will decommission two compressor stations, Desert Center and Cactus City, and isolate the station from existing transmission pipelines. SoCalGas will install new gas compression and related ancillary systems at the Blythe Compressor Station.	IN PROCESS
SoCalGas	Capital	SCG-08	Michael Bermel	Gas Major Projects	003430	Distribution Operations Control Center and Technology Management					1,200	8,969	37,714		and Technology Management projects identified under budget code 00343: (00343.001 - DOCC) The DOCC project will add RTUs control valves, valve indicators, pressure monitors, servers and modifications to existing field equipment to provide monitoring and oversight to the DOCC SCADA servers, co-located with the existing Gas Control which will be looking to migrate to a new facility in 2022. In addition to the field equipment, 32 employees (fifteen management and fifteen union) will be needed to support the project, 16 of which will need to be hired between 2017 and 2019. (00343.002 - Methane Sensors and Fiber Projects) The Methane Sensor project will look to deploy upwards of 2,100 methane sensors along existing HCA and evacuation challenged areas. The fiber optic project will deploy several fiber monitoring stations along new and replaced transmission pipelines that meet specific operating criteria, estimated at approximately 4 operating stations per year. (00343.003 - Pipeline Infrastructure Management System) PIMS will include new and enhanced IT system functionality along with related data transfer interfaces to various systems that include OSI PI, SAP, GIS, Esri, dispatch, field workforce order management systems, and SCG Advanced Meter and SDG&E Smart Meter (for sensor data collection). This will allow for the data management and reporting for over 2,000 methane sensors and fiber optic monitors as well as provide	IN PROCESS
SoCalGas	Capital	SCG-08	Michael A. Bermel	Gas Major Projects	003430.01	RAMP - Incremental Post Filing Distribution Operations Contr	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Gas Control Operation	0	400	3,156	25,901	Distribution Operations Control Center	This program will bring in the EPM hourly data directly into the Gas Control SCADA system along with real-time alarms, along with hourly core and non-core customer data. The DOCC will also bring in real-time pressure data and provide remote control to high priority distribution sites which will provide greater visibility of the distribution system. Creating a distribution operations control center can allow for more data to be monitored and analyzed for the purpose of safety, pipeline reliability, more efficient emergency response and improving environmental performance.	IN PROCESS
SoCalGas	Capital	SCG-09	Deanna R. Haines	Gas Engineering	006170	Land Rights (BC 617) & Buildings (BC 633)					5,468	5,468	5,468		Pipeline rights-of-way physical dimensions vary but may be at least thirty feet wide (to allow for workers, vehicles and equipment) and are as long as the distance across a property owner's land. They are contractual agreements for which landowners are compensated and may incorporate an expiration date. Such buildings and structures may be gauge houses, shelters for multiple critical valves or buildings providing shelter and protection for critical controls or SCADA-related equipment. Such structures and buildings vary from frame-and-stucco houses or buildings made from reinforced masonry blocks in cases where protection and security is needed.	IN PROCESS
SoCalGas	Capital	SCG-09	Deanna R. Haines	Gas Engineering	007300	Laboratory Equipment (BC730), Measurement Gas Samples (BC714) and Capital Tools (BC736)					2,245	2,245	2,245		Tools used by laboratory personnel are frequently sensitive instruments for measuring a variety of materials, substances and gases including emissions. Other equipment may include ovens, burners, microscopes, scales, handling equipment, and tools for computed radiography. Also, this includes hand tools, Volt/Amp Meters, GPS receivers, leak detection equipment, methane detectors, gauges, wrenches, tapping and stopping equipment.	IN PROCESS
SoCalGas	Capital	SCG-09	Deanna R. Haines	Gas Engineering	007300.01	RAMP - Base: ENGINEERING LABORATORY EQUIPMENT	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Odorization	116	2,245	2,245	2,245	Engineering Analysis Center Odorization	Engineering Analysis Center (EAC) develops odorant techniques for system	IN PROCESS
SoCalGas	Capital	SCG-09	Deanna R. Haines	Gas Engineering	009080	Supervision and Engineering Overhead Pool					4,909	5,648	6,388		Provide a pool for overhead charges from the Gas Engineering Supervisors or other employees. The charges get reassigned to the various budget categories on a direct basis. Charges reside in this Budget Category temporarily and are reassigned on a monthly basis. Overhead charges stemming from labor spend on capital projects and reassigned to Capital budget categories	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	002760.01	RAMP - Base BC 276 is TIMP Capital	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	TIMP is closely monitored and given high priority frequent audits are conducted	4,217	5,080	5,080	5,080	TIMP - ILI & ECDA	cleaning and assessing internal conditions of high pressure pipelines	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	002770	Distribution Integrity Management					74,383	74,383	160,000		In DIMP DREAMS capital for 2019 expecting to ramp up the amount of miles replacing	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	002770.01	RAMP - Base BC 277 is for DIMP DREAMS and GIPP	SCG-10	Catastrophic Damage Involving Medium-Pressure Gas Pipeline Failure	Distribution Integrity management programs are closely monitored and given high priority. Frequent audits are conducted.	60,854	70,183	71,583	60,854	DIMP DREAMS and GIPP	Risk Evaluation and Monitoring of Distribution Systems, Program in place to protect assets by building infrastructure to protect gas equipment	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	002770.02	RAMP - Incremental DIMP Gas Distribution enhancement IT	SCG-08	Records Management	Projects that will modernize and enhance the searchability, traceability and digitalization of Operation Asset Records	0	4,200	2,800	0	Records Management, maintenance of projects	Projects that will modernize and enhance the searchability, traceability and digitalization of Operation Asset Records	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	002770.03	RAMP - Incremental BC 277 is for DIMP DREAMS and GIPP	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	DIMP DREAMS and GIPP	0	0	0	96,346	DIMP DREAMS and GIPP	DIMP DREAMS and GIPP	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	002770.04	RAMP - Incremental DIMP Gas Distribution enhancement IT	SCG-08	Records Management	Projects that will modernize and enhance the searchability, traceability and digitalization	0	0	0	2,800	Records Management, maintenance of projects	Projects that will modernize and enhance the searchability, traceability and digitalization	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	P03120	GT PL Rpls / Externally Driven					45,721	45,721	49,920		In 2019 expecting increase in TIMP capital activity	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	P03120.01	RAMP - Base BC 312 is Base TIMP	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	TIMP is closely monitored and given high priority. Frequent audits are conducted.	38,152	40,321	42,021	46,220	TIMP - ILI, ECDA and P&M measures	Cleaning and assessing internal conditions of Hi pressure pipelines	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	P03120.02	RAMP - Incremental TIMP Gas High Pressure Enhancement IT	SCG-08	Records Management	Info systems costs will modernize and enhance the searchability, traceability and digitalization of operational assets	0	5,400	3,700	0	Records Management - collect, enter and maintain records related to operational assets	costs to collect, enter and maintain records related to operational assets	IN PROCESS
SoCalGas	Capital	SCG-14	Maria T. Martinez	TIMP & DIMP	P03120.03	RAMP - Incremental TIMP Gas High Pressure Enhancement IT	SCG-08	Records Management	Info systems costs will modernize and enhance the searchability, traceability and digitalization	0	0	0	3,700	Records Management - collect, enter and maintain records related to operation assets	costs to collect, enter and maintain records related to operation assets	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569A	PSEP Pipeline Projects							11,179		These costs are for PSEP Capital Projects that go into service in 2019. The Supply Line 36-9-09 North (SL-36-9-09N) Section 12 Replacement Project will install 0.875 miles of pipe to replace non-piggable pipelines installed prior to 1946 with new pipe constructed using state-of-the-art methods and to modern standards, including current pressure test standards. The project is located in San Luis Obispo County southwest of the City of Santa Margarita and will be completed in 2019. The forecast also includes an allowance for pipeline test failure. Over the course of hydrotesting pipelines, a rupture can occur. To address this potential for pipeline failure during hydrotest, an allowance was added for each year in the GRC.	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569A.03	RAMP - Base - Line 36-9-09N (sec 12) Replacement	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m	6,500	0	0	9,122	High Pressure Pipeline Replacement	Replacement of HCA pipelines	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569A.06	RAMP - Base - Allowance for Pipeline Test Failure	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m	0	0	0	2,057	High Pressure Pipeline Replacement	Replacement of HCA pipelines	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569B	PSEP VALVE PROJECTS					4,920	8,200	6,880		Execution of 284 Valve Enhancement Plan projects encompassing the following different types of enhancements: 1) Installation of new Automatic Shut-off Valves (ASV)/Remote Control Valves (RCV) on transmission pipelines, 2) Installation of new backflow prevention devices, either with check valve installations or through modifications to existing regulator stations, 3) Installation of new communications technology to enhance existing valve sites already equipped with ASC/RCV technology, and 4) Installation of new flow meters on major transmission pipelines and at major interconnection points.	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569B.01	RAMP - Base - PSEP VALVE PROJECT BUNDLE 2019	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m	51,512	4,920	8,200	68,880	Transmission Valve Automation and Replacement	High pressure pipeline valve automation to help improve response of valve shut-ins	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569C	PSEP PMO Project					667	667	9,868		Labor and non-labor associated with the PSEP Senior Director, Budget and Administration Group, and PMO Group. In addition, PSEP Construction and PSEP Project Execution personnel's time that is not charged directly to PSEP projects.	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569C.01	RAMP - Base - VMS Project	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not m	574	667	667	666	High Pressure Pipeline Replacement	Replacement of HCA Pipelines.	PLANNED
SoCalGas	Capital	SCG-15	Richard D. Phillips	PSEP	00569C.02	RAMP - Base - PSEP PMO Costs	SCG-04	Catastrophic Damage Involving High-Pressure Gas Pipeline Failure	Approved PSEP program to test or replace High Consequence Area High Pressure pipelines that do not meet current records criteria. Program has continuous monitoring and prioritizing of lines with timely	10,352	0	0	9,202	High Pressure Pipeline Replacement	Replacement of HCA Pipelines	PLANNED
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00654A	Safety/Environmental					1,470	1,245	1,200		The following are examples of necessary ADA improvements: adding or modifying access ramps, automatic doors, accessible restrooms, parking lot access and signage. Earthquake retrofit or Seismic retrofitting to modify existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. This may include wood framed, concrete masonry block, and poured in place concrete structures erected prior to 1989.	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00654B	Safety/Environmental - General Plant					980	830	800		The following are examples of necessary ADA improvements: adding or modifying access ramps, automatic doors, accessible restrooms, parking lot access and signage. Earthquake retrofit or Seismic retrofitting to modify existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. This may include wood framed, concrete masonry block, and poured in place concrete structures erected prior to 1989.	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00712A	Facility Energy Management Systems					1,000	500			Energy management systems consist of software and hardware systems that are integrated with the building's HVAC and lighting systems. Depending whether the EMS is wireless or analog, wiring will also be required to connect the EMS with a site's building systems.	PLANNED
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00716A	Fleet Capital Tools Replacement					248	248	248		New/Replacement garage equipment such as tire changing and balancing machines, diagnostic tools, parts cleaners, brake lathe, alignment machines, Air Conditioning/Freon machines, emissions related equipment for gasoline, diesel, and NGV/LNG vehicles	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00716B	Fleet Training Center					300	900			New fleet training facility will house and store equipment and training tools needed to appropriately train technicians in new vehicle technologies such as NGV/CNG compliance & safety; SMOGs; and other automotive practices.	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00716C	Fleet UST Replacement Program							1,046	1,402	This work will include the following: 1) UST removal and replacement 2) Piping removal and replacement 3) Under Dispenser Containment (UDC) removal and replacement 4) Removal and replacement of obsolete dispenser Items 1 -3 noted above will trigger the upgrades to meet the Assembly Bill ("AB") 2481 standards	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00734A	CURRENT NGV PROJECTS					6,093	660			The NGV fueling station enhancements will embody: • Added fueling capacity at existing public accessible and heavy use stations; • Secondary compression at select SoCalGas NGV Fleet/Public fueling stations to improve the reliability of capacity; • Upgrade of existing public fueling station driveways and fueling islands to allow access for larger fleet vehicles; • Replacement of outdated NGV fuel dispensers which will provide for added reliability and data security for public fueling customers who use a credit card.	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00734B	NGV REFUELING STATION 2017					1,082				The NGV fueling station enhancements will embody: • Added fueling capacity at existing public accessible and heavy use stations; • Secondary compression at select SoCalGas NGV Fleet/Public fueling stations to improve the reliability of capacity; • Upgrade of existing public fueling station driveways and fueling islands to allow access for larger fleet vehicles; • Replacement of outdated NGV fuel dispensers which will provide for added reliability and data security for public fueling customers who use a credit card.	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00734C	NGV REFUELING STATION 2018						15,277			The NGV fueling station enhancements will embody: • Added fueling capacity at existing public accessible and heavy use stations; • Secondary compression at select SoCalGas NGV Fleet/Public fueling stations to improve the reliability of capacity; • Upgrade of existing public fueling station driveways and fueling islands to allow access for larger fleet vehicles; • Replacement of outdated NGV fuel dispensers which will provide for added reliability and data security for public fueling customers who use a credit card.	IN PROCESS
SoCalGas	Capital	SCG-23	Carmen L. Herrera	Facilities & Fleet	00734D	NGV REFUELING STATION 2019							18,799		The NGV fueling station enhancements will embody: • Added fueling capacity at existing public accessible and heavy use stations; • Secondary compression at select SoCalGas NGV Fleet/Public fueling stations to improve the reliability of capacity; • Upgrade of existing public fueling station driveways and fueling islands to allow access for larger fleet vehicles; • Replacement of outdated NGV fuel dispensers which will provide for added reliability and data security for public fueling customers who use a credit card.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00754C	84291 PACER OCS ORDER REPRIOR PHI					440				Centralize the increase in compliance (MSA) and other company generated maintenance work threads (AM, PMC) to provide visibility and workload balance in PACER for CSF Dispatch Operations. Creation of company generated maintenance and compliance orders for Customer Services Field for unscheduled/pending orders.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756A.01	RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 20	SCG-08	Records Management	IT	0	0	1,525	0	IT Capital	Capital gas costs for projects that will modernize and enhance the searchability, traceability and digitalization of operational asset records	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756A.02	RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 20	SCG-08	Records Management	IT	0	0	189	0	IT Capital	IT Capital	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756A.03	RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 20	SCG-08	Records Management	IT	0	0	0	1,525	IT Capital	IT Capital	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756A.04	RAMP - INCREMENTAL 19060 3DPM-Work Order Sketching 2018 & 20	SCG-08	Records Management	IT	0	0	0	189	IT Capital	IT Capital	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756C.02	RAMP - INCREMENTAL 19061 Gas GIS 2018-2019	SCG-08	Records Management	IT	0	0	4,456	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756C.03	RAMP - INCREMENTAL 19061 Gas GIS 2018-2019	SCG-08	Records Management	IT	0	0	0	4,459	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756C.05	RAMP - INCREMENTAL 19061 Gas GIS 2018-2019	SCG-08	Records Management	IT	0	0	178	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756C.06	RAMP - INCREMENTAL 19061 Gas GIS 2018-2019	SCG-08	Records Management	IT	0	0	0	178	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756F.01	RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Manageme	SCG-08	Records Management	IT	0	0	690	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756F.02	RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Manageme	SCG-08	Records Management	IT	0	0	248	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756F.03	RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Manageme	SCG-08	Records Management	IT	0	0	0	482	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756F.04	RAMP - INCREMENTAL 19063 M&R (CLICK) Image Document Manageme	SCG-08	Records Management	IT	0	0	0	173	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756G.01	RAMP - INCREMENTAL 19064 Operator Qualification & Training P	SCG-08	Records Management	IT	0	666	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756G.02	RAMP - INCREMENTAL 19064 Operator Qualification & Training P	SCG-08	Records Management	IT	0	625	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756G.03	RAMP - INCREMENTAL 19064 Operator Qualification & Training P	SCG-08	Records Management	IT	0	0	412	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756H.01	RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4	SCG-08	Records Management	IT	0	1,043	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756H.02	RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4	SCG-08	Records Management	IT	0	98	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756H.03	RAMP - INCREMENTAL 19065 SCG CPD Enhancements Phase 4	SCG-08	Records Management	IT	0	0	1,673	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756I.01	RAMP - INCREMENTAL 19072 GT Leak Survey	SCG-08	Records Management	IT	0	0	779	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756I.02	RAMP - INCREMENTAL 19072 GT Leak Survey	SCG-08	Records Management	IT	0	0	75	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756I.03	RAMP - INCREMENTAL 19072 GT Leak Survey	SCG-08	Records Management	IT	0	0	0	3,682	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756J.01	RAMP - INCREMENTAL 19094 Click Enhancements Project	SCG-08	Records Management	IT	0	5,137	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756J.02	RAMP - INCREMENTAL 19094 Click Enhancements Project	SCG-08	Records Management	IT	0	0	3,898	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756J.03	RAMP - INCREMENTAL 19094 Click Enhancements Project	SCG-08	Records Management	IT	0	0	0	2,000	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756K	19095 GEARS Upgrade - Ent. GIS 10.x					901	844	314			IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756M.01	RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Pro	SCG-02	Employee, Contractor, Customer, and Public Safety	IT	0	0	533	0	Employee, Contractor, Cust & Public Safety	Employee, Contractor, Cust & Public Safety	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756M.02	RAMP - INCREMENTAL 19097 WebEOC Applications Replacement Pro	SCG-02	Employee, Contractor, Customer, and Public Safety	IT	0	0	0	92	Employee, Contractor, Cust & Public Safety	Employee, Contractor, Cust & Public Safety	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756P.01	RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 20	SCG-08	Records Management	IT	0	1,145	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756P.02	RAMP - INCREMENTAL 84255 3DPM WORK ORDER SKETCHING 2016 & 20	SCG-08	Records Management	IT	0	0	623	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756Q.01	RAMP - INCREMENTAL 84206 GAS GIS 2015 & 2016	SCG-08	Records Management	IT	0	4,721	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756R.01	RAMP - INCREMENTAL 84220 MATERIAL TRACEABILITY - SAP BATCH M	SCG-08	Records Management	IT	0	4,360	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756S.01	RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REP	SCG-08	Records Management	IT	0	468	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756S.02	RAMP - INCREMENTAL 84281 OSI PI GAS OPS DATA HISTORIAN & REP	SCG-08	Records Management	IT	0	0	342	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756U.01	RAMP - INCREMENTAL 84298 RECORD & INFO MGMT SYSTEMS	SCG-08	Records Management	IT	0	275	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756V.01	RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SO	SCG-08	Records Management	IT	0	1,464	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756V.02	RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SO	SCG-08	Records Management	IT	0	0	841	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756V.03	RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SO	SCG-08	Records Management	IT	0	700	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756V.04	RAMP - INCREMENTAL 84312 RECORDS & INFO MGMT CONSOLIDATED SO	SCG-08	Records Management	IT	0	40	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756X.01	RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGM	SCG-08	Records Management	IT	0	0	4,187	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00756X.02	RAMP - INCREMENTAL 19131 HP GAS CONSTRUCT RECORDS & INFO MGM	SCG-08	Records Management	IT	0	0	0	2,271	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00766B.01	RAMP - INCREMENTAL 84232 VIRTUAL LEARNING INTEGRATION TO SAP	SCG-08	Records Management	IT	0	953	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00772D.01	RAMP - INCREMENTAL 19078 Emergency Field Communication Servi	SCG-08	Records Management	IT	0	0	1,549	0	IT	IT	IN PROCESS

This project focuses on system application upgrades, scripting upgrades and provides access to current data to enhance accuracy and usability.
 * Data Management: The project will continue to maintain/develop necessary data interfaces. Project will develop and implement GIS technical tools to streamline data maintenance while also improving accuracy.
 * Model Enhancement: Environmental model upgrade will ensure access to data/information necessary to meet compliance requirements and business planning, engineering, construction along with emergency response needs/objectives. The project will re-write the models to the new programming format and standard. The existing Models will be replaced with standard scripting to provide enhanced flexibility, increased stability and improves system robustness.
 * Web Upgrade: The current Silverlight based web viewer is at end of life. Project will afford opportunity to determine the best web platform for deployment.

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
															IA: Tier 1 system supported by IT and Vendor. Improved system performance. IB: MSA Inspection Route Assignment, Route planning efficiencies. 2A: A new system to plan, optimize and manage MSA Inspection Routes and forecast workload that integrates with CIS, PACER, and DART 2B: Tools and processes to support business requirements for customer and billing factor initiation and maintenance in CIS after Advanced Meter is deployed. Implement a new fleet navigation application to include enhancements including real-time traffic. Street map updates and enhanced address and coordinate compatibility. Improved consistency in mapping, mileage reporting. Ongoing maintenance programs and processes to maintain consistent and accurate facility location and street network data. Enhance capability for route analysis and continuous improvement.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00774U	84227 SCG CUSTOMER SERVICE ROUTING					1,556					IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00774V.01	RAMP - INCREMENTAL 84309 CPD PHASE 3	SCG-08	Records Management	IT	0	2,685	0	0	IT	IT	IN PROCESS
															The Project will consist of two separate HE Software & DCU Firmware upgrades to provide initial enhancement of network protocol authentication and cryptographic capabilities in two stages, both leveraging the existing DCU hardware.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776AB	19121 DCU Software IS Upgrade						248	316			IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776AD.01	RAMP - INCREMENTAL 81452 CLICK UPGRADE (CU)	SCG-08	Records Management	IT	0	926	0	0	IT	IT	IN PROCESS
															Utilize the same key accounting objects (cost centers, orders, accounts, etc.) as our core SAP system. Most integrated Planning & Budgeting solution – with SAP data: Actual S's, cost centers, work orders, security settings, etc. Most efficient leverage of existing IT infrastructure and support. Best position for future integration with SAP HANA. End users are familiar with SAP/BW applications for reporting and analysis.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776AE	81495 FINANCIAL PLNG & BUDGETING					228					IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776AH.01	RAMP - INCREMENTAL 19125 GAS OPERATIONS DEPARTMENTAL WEBSITE	SCG-08	Records Management	IT	0	575	0	0	IT	IT	IN PROCESS
															ECC HANA implementation and activation of single sign-on SAP P1 upgrade SAP Solution Manager upgrade SAP Portal and SAP Adobe Document Services upgrades New servers for ECC Replacement of the disaster recovery environment Development and implementation of a comprehensive regression testing strategy and patch/service pack/upgrade capability (people, process, technology)	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776C	84293 SAP ECC ON HANA					8,159	3,645				IN PROCESS
															To adequately resolve GIS mobile problems will need to upgrade to modern application that leverages new technology: •Cached Tiling •Targeted content services •Configurability	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776D	84229 GIS MOBILE REPLACEMENT					974					IN PROCESS
															Developed new database queries and linkages, add reports, and enhance Visual Basic (VB) code to create PSEP revenue requirement Developed new database queries and linkages, add reports, and enhance VB code to categorize safety spending New tax module will align with Power Tax Developed VB code and macros to create variance reports for different areas in the RO model Redesign calculations to eliminate wasted calculations and reduce to 10 mins or less Dedicated server to improve access and run time for GRID	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776E	84248 2019 RO MODEL & GRID ENHANCEMENT					317					IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776F.01	RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Repor	SCG-08	Records Management	IT	0	0	843	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776F.02	RAMP - INCREMENTAL 19066 Enhanced M&R KPI and Analytic Repor	SCG-08	Records Management	IT	0	0	35	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776G.01	RAMP - INCREMENTAL 19067 Field Data Collection with eForm	SCG-08	Records Management	IT	0	0	1,463	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776G.02	RAMP - INCREMENTAL 19067 Field Data Collection with eForm	SCG-08	Records Management	IT	0	0	440	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776G.03	RAMP - INCREMENTAL 19067 Field Data Collection with eForm	SCG-08	Records Management	IT	0	0	0	1,903	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776H.01	RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvemen	SCG-08	Records Management	IT	0	817	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776H.02	RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvemen	SCG-08	Records Management	IT	0	0	0	904	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776H.03	RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvemen	SCG-08	Records Management	IT	0	0	1,886	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776H.04	RAMP - INCREMENTAL 19068 Gas Distribution and M&R Improvemen	SCG-08	Records Management	IT	0	309	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.01	RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspe	SCG-08	Records Management	IT	0	0	2,471	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.02	RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspe	SCG-08	Records Management	IT	0	0	946	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.03	RAMP - INCREMENTAL 19069 Gas Operations: Maintenance & Inspe	SCG-08	Records Management	IT	0	0	0	1,256	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.01	RAMP - INCREMENTAL 19070 High Pressure Construction (Move fr	SCG-08	Records Management	IT	0	0	3,575	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.02	RAMP - INCREMENTAL 19070 High Pressure Construction (Move fr	SCG-08	Records Management	IT	0	0	0	14,107	IT Capital	IT Capital	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776K.01	RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance	SCG-08	Records Management	IT	0	595	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776K.02	RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance	SCG-08	Records Management	IT	0	25	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776K.03	RAMP - INCREMENTAL 19071 Measurement & Reliability Compliance	SCG-08	Records Management	IT	0	0	334	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.01	RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance De	SCG-08	Records Management	IT	0	787	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776L.02	RAMP - INCREMENTAL 19073 Enhanced Operations & Compliance De	SCG-08	Records Management	IT	0	550	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776M.01	RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 &	SCG-08	Records Management	IT	0	181	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776M.02	RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 &	SCG-08	Records Management	IT	0	0	2,669	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776M.03	RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 &	SCG-08	Records Management	IT	0	0	0	263	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776M.04	RAMP - INCREMENTAL 19075 Gas Materials Traceability Wave 3 &	SCG-08	Records Management	IT	0	0	437	0	IT	IT	IN PROCESS

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776O	19085 Web Portal and Application Modernization						905			All applications hosted on the existing EWE infrastructure are in scope. Major web sites/applications include SempraNet, Gas Lines, and PowerUp plus approximately 200 other web sites. Estimate assumes PaaS (Platform as a Service) and IaaS (Infrastructure as a Service). Concept does not include costs associated to a public cloud solution or disaster recovery. Scope represents a portion of the 200+ web sites. Non-labor includes vendor services but not infrastructure.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00776Z	19119 DCU Compliance Inspection Work Mgmt						469	234		DCU Installation - consists of the following phases: Site Selection & Survey, GIS Approvals, Permitting, Construction Specifications, Commissioning, As-Built Drawings and Acceptance Pole Installation - consists of the following phases: Site Selection & Survey, GIS Approvals, Permitting, Construction Specifications, Commissioning, As-Built Drawings and Acceptance DCU Inspection - Inspection, Follow up Repairs Pole Inspection - Inspection, Follow up Repairs DCU asset management - Supply Management, RMA (return to manufacturer), Claims Support Pole asset management - Supply Management, RMA (return to manufacturer), Claims Support DCU Incident management - track incidents specific to asset Pole Incident management - track incidents specific to asset DCU Replacement - Track a new installation for replacements Pole Replacement - Track a new installation for replacements DCU Relocations - Track a new installation for relocations Pole Relocations - Track a new installation for relocations DCU Reporting - data must be available to automate reports Pole Reporting - data must be available to automate reports DCU component management - track specific components within the DCU, Replacements, Incidents, Maintenance Site Alerts - safety concerns, corporate security incidents Data Conversion Data exchanges from vendor(s) & ACLARA	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00777C	19076 Business Continuity Enhancement					6,828	23,795	33,609		The project will design and implement new infrastructure (compute, storage, network, cabinets, racks, and cabling) for highly available data center infrastructure services, extend network adjacency to the HA environment, extend basic data service chaining capabilities (through vRealize Automation and vRealize Orchestration), implement VMWare Site Recovery Manager (SRM), vRealize Operations (vROPS) The project will also create standard framework for implementing business continuity for the most critical business applications (target DR tier 1 applications). The project will develop operational procedures for the appropriate operations teams, design documentation for engineering teams to add capacity as appropriate in the future and provide tier 4 operational support.	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00777L.01	RAMP - INCREMENTAL 84225 GIS UPGRADE	SCG-08	Records Management	IT	0	4,743	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00777N.01	RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020	SCG-08	Records Management	IT	0	0	2,574	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00777N.02	RAMP - INCREMENTAL 19122 MDT Refresh 2018-2020	SCG-08	Records Management	IT	0	0	0	2,574	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00785A	19108 FoF - CSF PACER Mobile Platform					3,426	4,262	1,591		The following software need to be migrated or adapted to achieve this goal: Replace the windows PACER MDT with a PACER Mobile application (650) Replace iGuidance with a new platform to provide: visual situational awareness (641) automate route re- optimization (auto re-route) for field technicians (129) Develop a mobile version of the Aclara's STAR Programmer software and change the Programming coil interface from USB to Bluetooth or other untethered means (Advanced Meter) Migration to Smartphones / mobile platform will allow the development of the following capabilities: Use of video for remote assistance (645) Work Order management on smart phone (650) Customer call ahead to reduce CGI ("Can't Get In" - Repeat Orders) rates (61) Near Real Time QA Inspections (111) Credit Card Payments via Bill Matrix (254)	PLANNED
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00786A.01	RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4	SCG-08	Records Management	IT	0	1,029	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00786A.02	RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4	SCG-08	Records Management	IT	0	0	211	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00786A.03	RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4	SCG-08	Records Management	IT	0	53	0	0	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00786A.04	RAMP - INCREMENTAL 19114 FoF - GOPA Phase 4	SCG-08	Records Management	IT	0	0	0	257	IT	IT	IN PROCESS
SoCalGas	Capital	SCG-26	Christopher R. Olmsted	Information Technology	00786C	19116 FoF - Claims Analytics						1,192	1,123		Project will deliver an IT solution that will make data from RiskMaster, GIS, SAP and CASCADE accessible for analytics and reporting. The focus will be on predictive analytics in order to identify trends and help decision makers take correction action to avoid future litigation.	IN PROCESS
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758A.01	RAMP - Incremental PKI Rebuild	SCG-03	Cyber Security	Protect	0	58	0	0	Public Key Infrastructure	PKI digital key encryption system to protect in transit and to authenticate devices, services, and applicationsDeploy SHA2 compliance public key infrastructure for digital certificates	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758AA.01	RAMP - Incremental Automated recovery systems cyber threats	SCG-03	Cyber Security	Respond	0	0	0	831	Incident Response	Vendor solution for forensics infrastructure	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758AA.02	RAMP - Incremental Automated response systems cyber threats	SCG-03	Cyber Security	Respond	0	0	0	3,400	Incident Response	Vendor solution for forensics infrastructure	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758AB.01	RAMP - Incremental Automated recovery systems cyber threats	SCG-03	Cyber Security	Recover	0	0	0	831	Security capability recovery infrastructure	Recovery infrastructure specific to security capability infrastructure	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758AB.02	RAMP - Incremental Automated recovery systems cyber threats	SCG-03	Cyber Security	Recover	0	0	0	3,399	Security capability recovery infrastructure	Recovery infrastructure specific to security capability infrastructure	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758B.01	RAMP - Incremental Firewall Security	SCG-03	Cyber Security	Protect	0	308	0	0	Web Applications and Database Firewalls	Firewall Security	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758C.01	RAMP - Incremental Forensics System Rebuild	SCG-03	Cyber Security	Respond	0	202	0	0	Enterprise Forensics	Rebuild of the forensics and ediscovery systems	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758D.01	RAMP - Incremental SCG Network Anomaly Detection Phase 1	SCG-03	Cyber Security	Detect	0	368	0	0	Cyber Security	SCG Network Anomaly Detection Phase 1	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758D.02	RAMP - Incremental Deploy Silent Defense SCADA ICS protectio	SCG-03	Cyber Security	Detect	0	1,376	0	0	Cyber Security	SCG Network Anomaly Detection Phase 1	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758E.01	RAMP - Incremental Enterprise Threat Intel system	SCG-03	Cyber Security	Identify	0	369	0	0	Vulnerability Management	Implementation of an active scanning vulnerability management solution and a passive scanning capability	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758E.02	RAMP - Incremental Enterprise Threat Intel system	SCG-03	Cyber Security	Identify	0	1,105	0	0	Vulnerability Management	Implementation of an active scanning vulnerability management solution and a passive scanning	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758F.01	RAMP - Incremental User behavior analytics / MS Advanced Thr	SCG-03	Cyber Security	Detect	0	395	0	0	Threat Detection	Insider Threat Detection / Prevention	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758F.02	RAMP - Incremental Outlook Enterprise Threat Intel system	SCG-03	Cyber Security	Detect	0	1,448	0	0	Threat Detection	Insider Threat Detection / Prevention	PLANNED

Company	Cost Type	GRC Exhibit Number	GRC Witness Name	GRC Witness Area	GRC Workpaper	GRC Workpaper Description	RAMP Chapter	RAMP Risk Description	Mitigation Activity	Embedded 2016 Costs	2017 Forecast	2018 Forecast	2019 Forecast	Program Name	Program Desc	Status
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758G.01	RAMP - Incremental Fueling Our Future 760	SCG-03	Cyber Security	Protect	0	2,516	1,270	0	Converged Perimeter Systems	Converged Perimeter Systems - FOF 760	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758H.01	RAMP - Incremental Fueling Our Future 790	SCG-03	Cyber Security	Protect	0	440	23	0	Host Based Protection	Host Based Protection - FOF 790	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758H.02	RAMP - Incremental Fueling Our Future 790	SCG-03	Cyber Security	Protect	0	1,827	0	0	Hosted Based Protection	Hosted Based Protection - FOF 790	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758L.01	RAMP - Incremental Decrypt SSL at the perimeter to enable in	SCG-03	Cyber Security	Detect	0	296	0	0	SSL Egress Decryption	Decrypt SSL at the perimeter to enable inspection	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758J.01	RAMP - Incremental RFP to evaluate and upgrade spam malware	SCG-03	Cyber Security	Protect	0	252	0	0	Email and Web Browser Protections	Solution deployment for internet email spam, phishing and malware filtering	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758J.02	RAMP - Incremental RFP to evaluate and upgrade spam malware	SCG-03	Cyber Security	Protect	0	834	0	0	Email and Web Browser Protections	Solution deployment for internet email spam, phishing and malware filtering	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758K.01	RAMP - Incremental replace switches and IPS IS zone	SCG-03	Cyber Security	Protect	0	901	0	0	IS Zone Rebuild	Replace switches and IPS in IS zone	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758L.01	RAMP - Incremental i.e. Packet Sled Splunk Threat Analytics	SCG-03	Cyber Security	Detect	0	325	146	0	Network Security Monitoring	Packet Sled, Splunk & Threat Analytics	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758L.02	RAMP - Incremental Packet Sled Splunk Threat Analytics - non	SCG-03	Cyber Security	Detect	0	1,445	0	0	Network Security Monitoring	Packet Sled, Splunk & Threat Analytics	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758M.01	RAMP - Incremental Automate key security triage tasks	SCG-03	Cyber Security	Respond	0	345	185	0	Security Orchestration	Automate key security triage tasks	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758M.02	RAMP - Incremental Automate key security triage tasks	SCG-03	Cyber Security	Respond	0	1,360	0	0	Security Orchestration	Automate key security triage tasks	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758N.01	RAMP - Incremental Gas infrastructure protection systems - 2	SCG-03	Cyber Security	Protect	0	399	0	0	Critical Gas Infrastructure Protection	Critical Gas Infrastructure Protection	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758N.02	RAMP - Incremental Gas infrastructure protection - 2017	SCG-03	Cyber Security	Protect	0	1,275	0	0	Critical Gas Infrastructure Protection	Critical Gas Infrastructure Protection	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758O.01	RAMP - Incremental Gas infrastructure protection	SCG-03	Cyber Security	Protect	0	0	591	0	Critical Gas Infrastructure Protection - 2018	Critical Gas Infrastructure Protection - 2018	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758O.02	RAMP - Incremental Gas infrastructure protection	SCG-03	Cyber Security	Protect	0	0	1,700	0	Critical Gas Infrastructure Protection - 2018	Critical Gas Infrastructure Protection - 2018	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758P.01	RAMP - Incremental Gas infrastructure protection	SCG-03	Cyber Security	Protect	0	0	0	832	Critical Gas Infrastructure Protection	Critical Gas Infrastructure Protection - 2019	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758P.02	RAMP - Incremental Gas infrastructure protection	SCG-03	Cyber Security	Protect	0	0	0	3,400	Critical Gas Infrastructure Protection	Critical Gas Infrastructure Protection - 2019	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Q.01	RAMP - Incremental Cloud Access Security Broker i.e. Netskop	SCG-03	Cyber Security	Protect	0	0	513	0	CASB (cloud data use)	CASB (cloud data use)	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Q.02	RAMP - Incremental Cloud Access Security Broker i.e. Netskop	SCG-03	Cyber Security	Protect	0	0	2,380	0	CASB (cloud data use)	CASB (cloud data use)	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758R.01	RAMP - Incremental Security controls on servers. Deploy web	SCG-03	Cyber Security	Protect	0	0	2,228	0	Web Applications and Database Firewalls	Security controls on servers. Deploy web application firewalls	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758S.01	RAMP - Incremental Improved passive and by-pass tap technology	SCG-03	Cyber Security	Detect	0	0	1,331	0	Perimeter Tap Infrastructure Redesign	Improved passive and by-pass tap technology	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758T.01	RAMP - Incremental Deploy a comm and coordination platform	SCG-03	Cyber Security	Respond	0	0	426	0	Incident Response Secure Collaboration	Deploy a communication and coordination platform that can be securely leveraged on the corporate network	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758T.02	RAMP - Incremental Deploy a comm and coordination platform s	SCG-03	Cyber Security	Respond	0	0	1,488	0	Incident Response Secure Collaboration	Deploy a communication and coordination platform that can be securely leveraged on the Corporate Network	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758U.01	RAMP - Incremental Proactive preventative application scanni	SCG-03	Cyber Security	Protect	0	0	245	36	Enterprise Source Code Security	Proactive preventative application scanning, static analysis of source code before in house and/or third party software is released into production	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758U.02	RAMP - Incremental Proactive preventative application scanni	SCG-03	Cyber Security	Protect	0	0	935	0	Enterprise Source Code Security	Proactive preventative application scanning, static analysis of source code before in house and/or third party software is released into production	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758V.01	RAMP - Incremental Impl tech ctrls to authenticate substatio	SCG-03	Cyber Security	Protect	0	0	3,375	60	Wired Network Preventative Controls	Implement technical controls to authenticate substation devices before granting network access	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758W.01	RAMP - Incremental RSA or another	SCG-03	Cyber Security	Protect	0	0	515	0	Multi Factor Authentication Refresh	RSA or like authentication refresh	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758W.02	RAMP - Incremental RSA or another	SCG-03	Cyber Security	Protect	0	0	2,125	0	Multi Factor Authentication Refresh	RSA or like authentication refresh	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758X.01	RAMP - Incremental My Account two factor authentication	SCG-03	Cyber Security	Protect	0	0	0	479	My Account Multi Factor Authentication	My Account two factor authentication	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Y.01	RAMP - Incremental Identify cyber threats	SCG-03	Cyber Security	Identify	0	0	0	906	Threat Identification systems	Threat Identification systems	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Y.02	RAMP - Incremental Identify cyber threats	SCG-03	Cyber Security	Identify	0	0	0	3,825	Threat Identification systems	Threat Identification systems	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Z.01	RAMP - Incremental Automated detection systems cyber threats	SCG-03	Cyber Security	Detect	0	0	0	907	Cybersecurity Event Monitoring - IT	Threat Detection systems	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Z.02	RAMP - Incremental Automated detection systems cyber threats	SCG-03	Cyber Security	Detect	0	0	0	3,825	Cybersecurity Event Monitoring - IT	Threat Detection systems	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Z.03	RAMP - Incremental automated detection systems cyber threats	SCG-03	Cyber Security	Detect	0	0	0	0	Cybersecurity Event Monitoring - IT	Threat Detection systems	PLANNED
SoCalGas	Capital	SCG-27	Gavin H. Worden	Cyber Security	00758Z.04	RAMP - Incremental automated detection systems cyber threats	SCG-03	Cyber Security	Detect	0	0	0	0	Cybersecurity Event Monitoring - IT	Threat Detection systems	PLANNED