

Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2024 (U 904-G))

Application No. 22-05-015

Exhibit No.: (SCG-06-CWP-R)

REVISED CAPITAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF RICK H. CHIAPA / AARON M. BELL / STEVE A. HRUBY
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

AUGUST 2022



**2024 General Rate Case - REVISED
INDEX OF WORKPAPERS**

Exhibit SCG-06-CWP-R - GAS TRANSMISSION

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Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Overall Summary For Exhibit No. SCG-06-CWP-R

Area:	GAS TRANSMISSION
Witness:	Rick H. Chiapa

	In 2021 \$ (000)		
	Adjusted-Forecast		
	2022	2023	2024
A. NEW PIPELINE	13,864	18,890	173
B. PIPELINE REPLACEMENTS	40,000	40,000	35,000
C. PIPELINE RELOCATION - FREEWAY	1,701	201	201
D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW	11,364	10,007	10,007
E. COMPRESSOR STATIONS	13,000	13,000	10,000
F. CATHODIC PROTECTION	8,000	8,000	7,000
G. MEASUREMENT & REGULATION STATIONS	47,631	52,774	35,632
H. SECURITY & AUXILIARY EQUIPMENT	4,000	3,000	3,000
I. BUILDINGS & IMPROVEMENTS	1,000	1,000	1,000
J. CAPITAL TOOLS	892	892	892
K. COMPRESSOR STATION MODERNIZATION	39,004	370	0
L. CONTROL CENTER MODERNIZATION	2,038	2,608	3,746
Total	182,494	150,742	106,651

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Category: A. NEW PIPELINE
Workpaper: 003010

Summary for Category: A. NEW PIPELINE

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	231	365	437	8
Non-Labor	427	13,499	18,453	165
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	658	13,864	18,890	173
FTE	2.3	4.1	4.8	0.1

003010 GT PIPELINES - NEW ADDITIONS

Labor	231	365	437	8
Non-Labor	427	13,499	18,453	165
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	658	13,864	18,890	173
FTE	2.3	4.1	4.8	0.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003010 - GT PIPELINES - NEW ADDITIONS

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00301.0
 Category: A. NEW PIPELINE
 Category-Sub: 1. NEW PIPELINE
 Workpaper Group: 003010 - GT PIPELINES - NEW ADDITIONS

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	Zero-Based	1,084	122	530	230	231	365	437	8
Non-Labor	Zero-Based	22,957	419	13,398	4,124	427	13,499	18,453	165
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		24,041	540	13,928	4,354	658	13,864	18,890	173
FTE	Zero-Based	7.3	0.9	3.9	1.9	2.3	4.1	4.8	0.1

Business Purpose:

New Construction Pipeline is needed to provide funding for new pipeline projects that arise each year. This work provides the transmission system with additional capacity, reliability and resiliency to serve customer needs. The only project currently identified under this workpaper is the Lakewood project.

Physical Description:

This project will construct 3.6 miles of new Transmission pipe.

Project Justification:

The new construction pipeline work forecasted is associated with one project, driven by the need to install a new pipeline at the request of an end user.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00301.0
Category: A. NEW PIPELINE
Category-Sub: 1. NEW PIPELINE
Workpaper Group: 003010 - GT PIPELINES - NEW ADDITIONS

Forecast Methodology:

Labor - Zero-Based

The zero-based forecast for this workpaper was developed using a discrete project estimate. This method is most appropriate because estimated costs are based on historic pricing for projects of similar size and scope.

Non-Labor - Zero-Based

The zero-based forecast for this workpaper was developed using a discrete project estimate. This method is most appropriate because estimated costs are based on historic pricing for projects of similar size and scope.

NSE - Zero-Based

NA

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00301.0
 Category: A. NEW PIPELINE
 Category-Sub: 1. NEW PIPELINE
 Workpaper Group: 003010 - GT PIPELINES - NEW ADDITIONS

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Zero-Based	365	437	8	0	0	0	365	437	8
Non-Labor	Zero-Based	13,499	18,453	165	0	0	0	13,499	18,453	165
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		13,864	18,890	173	0	0	0	13,864	18,890	173
FTE	Zero-Based	4.1	4.8	0.1	0.0	0.0	0.0	4.1	4.8	0.1

Forecast Adjustment Details

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2022 Total	0	0	0	0	0.0
2023 Total	0	0	0	0	0.0
2024 Total	0	0	0	0	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00301.0
Category: A. NEW PIPELINE
Category-Sub: 1. NEW PIPELINE
Workpaper Group: 003010 - GT PIPELINES - NEW ADDITIONS

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	692	82	369	170	196
Non-Labor	17,131	331	11,093	3,585	427
NSE	0	0	0	0	0
Total	17,823	413	11,462	3,755	623
FTE	6.2	0.8	3.3	1.6	1.9
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	692	82	369	170	196
Non-Labor	17,131	331	11,093	3,585	427
NSE	0	0	0	0	0
Total	17,823	413	11,462	3,755	623
FTE	6.2	0.8	3.3	1.6	1.9
Vacation & Sick (Nominal \$)					
Labor	117	14	70	30	35
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	117	14	70	30	35
FTE	1.1	0.1	0.6	0.3	0.4
Escalation to 2021\$					
Labor	275	26	91	30	0
Non-Labor	5,827	88	2,304	539	0
NSE	0	0	0	0	0
Total	6,102	113	2,396	569	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	1,084	122	530	230	231
Non-Labor	22,957	419	13,398	4,124	427
NSE	0	0	0	0	0
Total	24,041	540	13,928	4,354	658
FTE	7.3	0.9	3.9	1.9	2.3

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00301.0
 Category: A. NEW PIPELINE
 Category-Sub: 1. NEW PIPELINE
 Workpaper Group: 003010 - GT PIPELINES - NEW ADDITIONS

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
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Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003010**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00301.0
 Category: A. NEW PIPELINE
 Category-Sub: 1. NEW PIPELINE
 Workpaper Group: 003010 - GT PIPELINES - NEW ADDITIONS
 Workpaper Detail: 003010.001 - New Pipeline, Collectible
 In-Service Date: Not Applicable

Description:

New Pipeline, Collectible

Forecast In 2021 \$(000)			
Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor	365	437	8
Non-Labor	13,499	18,453	165
NSE	0	0	0
Total	<u>13,864</u>	<u>18,890</u>	<u>173</u>
FTE	4.1	4.8	0.1

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 003010

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

**Southern California Gas Company - Gas Transmission - Witness Rick Chiapa
Supplemental Workpaper for New Pipelines for Zero-Based Forecast**

Budget Code 311
% Collectible 100

Project Scope To install approximately 3.6 miles of new Transmission pipeline extension

Forecast (In 2021 Directs, \$000's)			
	<u>2022</u>	<u>2023</u>	<u>2024</u>
<u>Labor</u>	\$ 365	\$ 437	\$ 8
Total	\$ 365	\$ 437	\$ 8

<u>Non Labor</u>			
Engineering	\$ 611	\$ 699	\$ 150
Environmental	\$ 56	\$ 75	
Land	\$ 153	\$ 157	
Supply Management	\$ 2,984		
Construction	\$ 8,900	\$ 16,158	
Other	\$ 795	\$ 1,365	\$ 15
Total	\$ 13,499	\$ 18,454	\$ 165

Labor Total	Non Labor Total	Overall Total
\$ 810	\$ 32,118	\$ 32,928

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Category: B. PIPELINE REPLACEMENTS
Workpaper: 003020

Summary for Category: B. PIPELINE REPLACEMENTS

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	3,112	3,403	3,403	2,979
Non-Labor	51,815	36,597	36,597	32,021
NSE	0	0	0	0
Total	54,927	40,000	40,000	35,000
FTE	23.5	24.4	24.4	21.3

003020 GT PIPELINE REPLACEMENTS

Labor	3,112	3,403	3,403	2,979
Non-Labor	51,815	36,597	36,597	32,021
NSE	0	0	0	0
Total	54,927	40,000	40,000	35,000
FTE	23.5	24.4	24.4	21.3

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003020 - GT PIPELINE REPLACEMENTS

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	5-YR Average	5,507	4,177	3,017	3,720	3,112	3,403	3,403	2,979
Non-Labor	5-YR Average	40,323	46,591	36,421	34,938	51,815	36,597	36,597	32,021
NSE	5-YR Average	0	0	0	0	0	0	0	0
Total		45,830	50,767	39,438	38,658	54,926	40,000	40,000	35,000
FTE	5-YR Average	36.6	32.2	21.5	26.2	23.5	24.4	24.4	21.3

Business Purpose:

Natural gas transmission pipelines need to be replaced due to the condition of the pipeline or hazardous conditions affecting the existing pipeline location. Some pipeline sections need to be replaced due to erosion from agricultural activities or storm water runoff. Replacements are also required due to class location changes in the vicinity of the transmission pipeline. Pipelines with a history of leakage, poor coating, or that are difficult to cathodically protect are routinely evaluated and replaced if necessary.

Physical Description:

Projects in this workpaper 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.

Project Justification:

The activities contained in Pipeline Replacements are necessary to provide a safe and reliable gas transmission system. These costs are being incurred in response to SoCalGas's obligation to serve customer needs.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00302.0
Category: B. PIPELINE REPLACEMENTS
Category-Sub: 1. PIPELINE REPLACEMENTS
Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS

Forecast Methodology:

Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology and then adjusted to provide adequate funding for anticipated projects. The base year recorded, as well as the historical average forecast methodologies provide excess funding for the anticipated work during this GRC forecast period and are therefore not effective as choices for this cost category.

Non-Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology and then adjusted to provide adequate funding for anticipated projects. The base year recorded, as well as the historical average forecast methodologies provide excess funding for the anticipated work during this GRC forecast period and are therefore not effective as choices for this cost category.

NSE - 5-YR Average

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	5-YR Average	3,907	3,907	3,907	-504	-504	-928	3,403	3,403	2,979
Non-Labor	5-YR Average	42,017	42,017	42,017	-5,420	-5,420	-9,996	36,597	36,597	32,021
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		45,924	45,924	45,924	-5,924	-5,924	-10,924	40,000	40,000	35,000
FTE	5-YR Average	28.0	28.0	28.0	-3.6	-3.6	-6.7	24.4	24.4	21.3

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	-504	-5,420	0	-5,924	-3.6
Explanation:	This adjustment was made to reflect forecasted spend.				
2022 Total	-504	-5,420	0	-5,924	-3.6
2023	-504	-5,420	0	-5,924	-3.6
Explanation:	This adjustment was made to reflect forecasted spend.				
2023 Total	-504	-5,420	0	-5,924	-3.6
2024	-928	-9,996	0	-10,924	-6.7
Explanation:	This adjustment was made to reflect forecasted spend.				
2024 Total	-928	-9,996	0	-10,924	-6.7

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00302.0
Category: B. PIPELINE REPLACEMENTS
Category-Sub: 1. PIPELINE REPLACEMENTS
Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	3,514	3,193	2,294	2,748	2,645
Non-Labor	30,110	46,971	34,908	29,435	49,130
NSE	0	0	0	0	0
Total	33,624	50,164	37,202	32,183	51,775
FTE	31.1	29.1	19.2	21.8	19.8
Adjustments (Nominal \$)**					
Labor	0	-376	-194	1	0
Non-Labor	-21	-10,150	-4,752	936	2,684
NSE	0	0	0	0	0
Total	-21	-10,527	-4,946	938	2,684
FTE	0.0	-1.8	-1.2	0.1	0.0
Recorded-Adjusted (Nominal \$)					
Labor	3,514	2,816	2,100	2,750	2,645
Non-Labor	30,089	36,821	30,156	30,371	51,815
NSE	0	0	0	0	0
Total	33,603	39,637	32,256	33,121	54,460
FTE	31.1	27.3	18.0	21.9	19.8
Vacation & Sick (Nominal \$)					
Labor	596	485	398	484	467
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	596	485	398	484	467
FTE	5.5	4.9	3.5	4.3	3.7
Escalation to 2021\$					
Labor	1,398	876	519	486	0
Non-Labor	10,234	9,770	6,264	4,566	0
NSE	0	0	0	0	0
Total	11,632	10,646	6,783	5,053	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	5,507	4,177	3,017	3,720	3,112
Non-Labor	40,323	46,591	36,421	34,938	51,815
NSE	0	0	0	0	0
Total	45,830	50,767	39,438	38,658	54,926
FTE	36.6	32.2	21.5	26.2	23.5

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2017	2018	2019	2020	2021
Labor		0	-376	-194	1	0
Non-Labor		-21	-10,150	-4,752	936	2,684
NSE		0	0	0	0	0
	Total	-21	-10,527	-4,946	938	2,684
FTE		0.0	-1.8	-1.2	0.1	0.0

Detail of Adjustments to Recorded in Nominal \$:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2017	0	-21	0	-21	0.0
Explanation:	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2017 Total	0	-21	0	-21	0.0
2018	-376	-10,150	0	-10,527	-1.8
Explanation:	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2018 Total	-376	-10,150	0	-10,527	-1.8
2019	0	11	0	11	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2019	-194	-4,763	0	-4,957	-1.2
Explanation:	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2019 Total	-194	-4,752	0	-4,946	-1.2
2020	0	871	0	871	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020	0	29	0	29	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020	1	36	0	38	0.1
Explanation:	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020 Total	1	936	0	938	0.1
2021	0	2,792	0	2,792	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2021	0	1	0	1	0.0
Explanation:	Transfer to Pipeline Replacement 003020.				
2021	0	-109	0	-109	0.0
Explanation:	Incremental costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021 Total	0	2,684	0	2,684	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003020**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.001 - Pipeline Replacements - NON -COLLECTIBLE, RAMP C3 Leak Repair
 In-Service Date: Not Applicable
 Description:

Pipeline Replacements - NON -COLLECTIBLE, RAMP C3 Leak Repair

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		909	926	894
Non-Labor		9,802	9,074	9,606
NSE		0	0	0
	Total	10,711	10,000	10,500
FTE		6.5	6.6	6.4

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.001 - Pipeline Replacements - NON -COLLECTIBLE, RAMP C3 Leak Repair

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C03 T1 & T2

RAMP Line Item Name: Leak Repair T1 & T2 (HCA and Non-HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	242	3,534	3,300	3,465	10,299	10,949	13,253
Tranche 2 Cost Estimate	492	7,177	6,700	7,035	20,912	22,228	26,907

Cost Estimate Changes from RAMP:

The Warning Mesh mitigation (C30) from the SCG Risk 2 RAMP chapter is often included in Leak Repair projects.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	14.00	9.00	12.00	13.00	34.00	31.00	40.00
Tranche 2 # of Projects	29.00	19.00	25.00	29.00	73.00	68.00	85.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	17.000	10.000
Tranche 2	10.000	6.800

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.002 - Pipeline Replacements - NON-COLLECTIBLE, RAMP C5 Pipeline Relocations/
 Replacement
 In-Service Date: Not Applicable

Description:

Pipeline Replacements - NON-COLLECTIBLE, RAMP C5 Pipeline Relocations/ Replacement

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		1,817	1,853	1,787
Non-Labor		19,604	18,148	19,213
NSE		0	0	0
	Total	21,421	20,001	21,000
FTE		13.0	13.3	12.8

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.002 - Pipeline Replacements - NON-COLLECTIBLE, RAMP C5 Pipeline Relocations/ Replacement

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C05 T1 & T2

RAMP Line Item Name: Pipeline Relocation/ Replacement (HCA & Non- HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	9,607	7,068	6,600	6,930	20,598	20,787	25,164
Tranche 2 Cost Estimate	19,596	14,353	13,401	14,070	41,824	42,205	51,090

Cost Estimate Changes from RAMP:

None. The Warning Mesh mitigation (C30) from the SCG Risk 2 RAMP chapter is always included in Pipeline Relocation/ Replacement projects.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	15.00	15.00	15.00	14.00	44.00	41.00	53.00
Tranche 2 # of Projects	31.00	32.00	31.00	30.00	93.00	87.00	108.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	2.000	36.300
Tranche 2	1.000	23.200

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.003 - Pipeline Replacements - NON-COLLECTIBLE, RAMP C6 Shallow/ Exposed Pipe Remediations
 In-Service Date: Not Applicable

Description:

Pipeline Replacements - NON-COLLECTIBLE, RAMP C6 Shallow/ Exposed Pipe Remediations

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		303	309	298
Non-Labor		3,267	3,025	3,202
NSE		0	0	0
	Total	3,570	3,334	3,500
FTE		2.2	2.2	2.1

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.003 - Pipeline Replacements - NON-COLLECTIBLE, RAMP C6 Shallow/ Exposed Pipe Remediations

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C06 T1 & T2
 RAMP Line Item Name: Shallow/ Exposed Pipe Remediations (HCA & Non-HCA)
 Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	2,149	1,178	1,100	1,155	3,433	4,178	5,057
Tranche 2 Cost Estimate	4,363	2,392	2,234	2,345	6,971	8,483	10,269

Cost Estimate Changes from RAMP:

None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	7.00	5.00	6.00	7.00	18.00	15.00	22.00
Tranche 2 # of Projects	17.00	11.00	14.00	16.00	41.00	38.00	49.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	388.000	32.000
Tranche 2	237.000	20.100

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.004 - RAMP C5 Pipeline Replacements - Major Projects, NON-COLLECTIBLE
 In-Service Date: Not Applicable
 Description:

Pipeline Replacements - Major Projects, NON-COLLECTIBLE, RAMP C5. Line 247

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		374	315	0
Non-Labor		3,924	6,350	0
NSE		0	0	0
	Total	4,298	6,665	0
FTE		2.7	2.3	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00302.0
 Category: B. PIPELINE REPLACEMENTS
 Category-Sub: 1. PIPELINE REPLACEMENTS
 Workpaper Group: 003020 - GT PIPELINE REPLACEMENTS
 Workpaper Detail: 003020.004 - RAMP C5 Pipeline Replacements - Major Projects, NON-COLLECTIBLE

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C05 T1 & T2

RAMP Line Item Name: Pipeline Relocation/ Replacement (HCA & Non- HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	0	1,418	2,199	0	3,617	4,178	5,057
Tranche 2 Cost Estimate	0	2,880	4,466	0	7,346	8,483	10,269

Cost Estimate Changes from RAMP:

Details for RAMP C5 in sub .02. The Warning Mesh mitigation (C30) from the SCG Risk 2 RAMP chapter is always included in Pipeline Relocation/ Replacement projects.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	0.00	1.00	0.00	0.00	1.00	15.00	22.00
Tranche 2 # of Projects	0.00	1.00	0.00	0.00	1.00	38.00	49.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	2.000	36.300
Tranche 2	1.000	23.200

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Category: C. PIPELINE RELOCATION - FREEWAY
 Workpaper: 003030

Summary for Category: C. PIPELINE RELOCATION - FREEWAY

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	4	211	31	31
Non-Labor	21	1,490	170	170
NSE	0	0	0	0
Total	25	1,701	201	201
FTE	0.0	1.4	0.2	0.2

003030 GT PIPELINE RELOCATION-FREEWAY

Labor	4	211	31	31
Non-Labor	21	1,490	170	170
NSE	0	0	0	0
Total	25	1,701	201	201
FTE	0.0	1.4	0.2	0.2

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003030 - GT PIPELINE RELOCATION-FREEWAY

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00303.0
 Category: C. PIPELINE RELOCATION - FREEWAY
 Category-Sub: 1. PIPELINE RELOCATION - FREEWAY
 Workpaper Group: 003030 - GT PIPELINE RELOCATION-FREEWAY

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
	Years								
Labor	5-YR Average	21	28	386	13	4	211	31	31
Non-Labor	5-YR Average	59	76	1,968	924	21	1,490	170	170
NSE	5-YR Average	0	0	0	0	0	0	0	0
	Total	80	103	2,355	937	25	1,701	201	201
FTE	5-YR Average	0.1	0.2	2.7	0.1	0.0	1.4	0.2	0.2

Business Purpose:

This workpaper includes costs associated with pipeline and associated facility relocations necessitated by Caltrans construction projects. Work completed in budget codes 303, 313, 323, and 333 are included in this workpaper.

Physical Description:

The work required includes relocating and replacing 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.

Project Justification:

Throughout the year, SoCalGas is frequently required to relocate pipelines during the same year such projects are submitted to SoCalGas. Costs are driven by safety and regulatory compliance as well as contractual requirements. This allows SCG to meet operating, right of way, and franchise agreement requirements.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00303.0
Category: C. PIPELINE RELOCATION - FREEWAY
Category-Sub: 1. PIPELINE RELOCATION - FREEWAY
Workpaper Group: 003030 - GT PIPELINE RELOCATION-FREEWAY

Forecast Methodology:

Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology. In 2021, front-end engineering and design started for two Caltrans projects. The cost estimates for these projects were considered when adjusting the five-year average up in 2022. The forecasted amount in 2023 and 2024 is designed to be used for project requests from Caltrans during the forecast period.

Non-Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology. In 2021, front-end engineering and design started for two Caltrans projects. The cost estimates for these projects were considered when adjusting the five-year average up in 2022. The forecasted amount in 2023 and 2024 is designed to be used for project requests from Caltrans during the forecast period.

NSE - 5-YR Average

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00303.0
 Category: C. PIPELINE RELOCATION - FREEWAY
 Category-Sub: 1. PIPELINE RELOCATION - FREEWAY
 Workpaper Group: 003030 - GT PIPELINE RELOCATION-FREEWAY

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	5-YR Average	91	91	91	120	-60	-60	211	31	31
Non-Labor	5-YR Average	610	610	610	880	-440	-440	1,490	170	170
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		701	701	701	1,000	-500	-500	1,701	201	201
FTE	5-YR Average	0.6	0.6	0.6	0.8	-0.4	-0.4	1.4	0.2	0.2

Forecast Adjustment Details

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2022	120	880	0	1,000	0.8
Explanation:	Adjustment for Caltrans driven, non-collectible project.				
2022 Total	120	880	0	1,000	0.8
2023	-60	-440	0	-500	-0.4
Explanation:	This adjustment was made to reflect forecasted spend.				
2023 Total	-60	-440	0	-500	-0.4
2024	-60	-440	0	-500	-0.4
Explanation:	This adjustment was made to reflect forecasted spend.				
2024 Total	-60	-440	0	-500	-0.4

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00303.0
Category: C. PIPELINE RELOCATION - FREEWAY
Category-Sub: 1. PIPELINE RELOCATION - FREEWAY
Workpaper Group: 003030 - GT PIPELINE RELOCATION-FREEWAY

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	14	19	269	10	4
Non-Labor	44	60	1,630	803	21
NSE	0	0	0	0	0
Total	57	78	1,899	813	25
FTE	0.1	0.2	2.3	0.1	0.0
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	14	19	269	10	4
Non-Labor	44	60	1,630	803	21
NSE	0	0	0	0	0
Total	57	78	1,899	813	25
FTE	0.1	0.2	2.3	0.1	0.0
Vacation & Sick (Nominal \$)					
Labor	2	3	51	2	1
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	2	3	51	2	1
FTE	0.0	0.0	0.4	0.0	0.0
Escalation to 2021\$					
Labor	5	6	66	2	0
Non-Labor	15	16	339	121	0
NSE	0	0	0	0	0
Total	20	22	405	123	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	21	28	386	13	4
Non-Labor	59	76	1,968	924	21
NSE	0	0	0	0	0
Total	80	103	2,355	937	25
FTE	0.1	0.2	2.7	0.1	0.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00303.0
 Category: C. PIPELINE RELOCATION - FREEWAY
 Category-Sub: 1. PIPELINE RELOCATION - FREEWAY
 Workpaper Group: 003030 - GT PIPELINE RELOCATION-FREEWAY

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
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Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003030**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00303.0
 Category: C. PIPELINE RELOCATION - FREEWAY
 Category-Sub: 1. PIPELINE RELOCATION - FREEWAY
 Workpaper Group: 003030 - GT PIPELINE RELOCATION-FREEWAY
 Workpaper Detail: 003030.001 - 00303 - Pipeline Relocation - Freeway
 In-Service Date: Not Applicable

Description:

00303- Pipeline Relocation Freeway, 313 Non-collectible. Caltrans driven project in 2022.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		211	31	31
Non-Labor		1,490	170	170
NSE		0	0	0
	Total	1,701	201	201
FTE		1.4	0.2	0.2

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper: 003040

Summary for Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	720	771	655	655
Non-Labor	10,287	10,593	9,352	9,352
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	11,007	11,364	10,007	10,007
FTE	6.3	6.7	5.7	5.7

003040 GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Labor	720	771	655	655
Non-Labor	10,287	10,593	9,352	9,352
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	11,007	11,364	10,007	10,007
FTE	6.3	6.7	5.7	5.7

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	Base YR Rec	712	1,541	1,804	1,744	720	771	655	655
Non-Labor	Base YR Rec	6,338	16,817	17,137	27,293	10,287	10,593	9,352	9,352
NSE	Base YR Rec	0	0	0	0	0	0	0	0
Total		7,051	18,358	18,941	29,037	11,006	11,364	10,007	10,007
FTE	Base YR Rec	5.1	10.9	12.2	15.6	6.3	6.7	5.7	5.7

Business Purpose:

Pipeline Relocation - Franchise/ Private/ ROW includes costs associated related to the modification and relocation of transmission pipelines to accommodate planned private property development, municipal public works, street improvements projects, and other work required due to right-of-way, contract and franchise agreements.

Physical Description:

Relocating pipe and the associated work driven by franchise, private and right of way.

Project Justification:

Pipelines are relocated according to the requirements of municipal franchises and property developers. Some are collectible and others are not, usually depending on right of way language.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00304.0
Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Forecast Methodology:

Labor - Base YR Rec

The TY 2024 forecast was established using the base year recorded methodology. This was then adjusted down by \$1,000,000 in both 2023 and 2024, since at the time of this filing, there are no known projects in those years. Long term forecasting of franchisee work is challenging, given the changes in governmental project funding, the considerable number of governmental jurisdictions involved and limited long-term information on upcoming specific projects. It is anticipated that there will be projects throughout the forecast period. Base year recorded, with adjustments, provides the most effective way of determining the funding needed for this category during the forecast period.

Non-Labor - Base YR Rec

The TY 2024 forecast was established using the base year recorded methodology. This was then adjusted down by \$1,000,000 in both 2023 and 2024, since at the time of this filing, there are no known projects in those years. Long term forecasting of franchisee work is challenging, given the changes in governmental project funding, the considerable number of governmental jurisdictions involved and limited long-term information on upcoming specific projects. It is anticipated that there will be projects throughout the forecast period. Base year recorded, with adjustments, provides the most effective way of determining the funding needed for this category during the forecast period.

NSE - Base YR Rec

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	720	720	720	51	-65	-65	771	655	655
Non-Labor	Base YR Rec	10,287	10,287	10,287	306	-935	-935	10,593	9,352	9,352
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		11,007	11,007	11,007	357	-1,000	-1,000	11,364	10,007	10,007
FTE	Base YR Rec	6.3	6.3	6.3	0.4	-0.6	-0.6	6.7	5.7	5.7

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	51	306	0	357	0.4
Explanation:	This adjustment was made to reflect forecasted spend for a collectible project.				
2022 Total	51	306	0	357	0.4
2023	-65	-935	0	-1,000	-0.6
Explanation:	This adjustment was made to reflect forecasted spend.				
2023 Total	-65	-935	0	-1,000	-0.6
2024	-65	-935	0	-1,000	-0.6
Explanation:	This adjustment was made to reflect forecasted spend.				
2024 Total	-65	-935	0	-1,000	-0.6

Note: Totals may include rounding differences.

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Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	490	1,065	1,283	1,675	612
Non-Labor	4,780	13,375	14,322	35,858	10,151
NSE	0	0	0	0	0
Total	5,270	14,439	15,605	37,533	10,763
FTE	4.4	9.3	10.3	13.1	5.3
Adjustments (Nominal \$)**					
Labor	-35	-25	-27	-386	0
Non-Labor	-51	-84	-133	-12,132	136
NSE	0	0	0	0	0
Total	-86	-109	-160	-12,518	136
FTE	-0.1	-0.1	-0.1	-0.1	0.0
Recorded-Adjusted (Nominal \$)					
Labor	455	1,039	1,255	1,289	612
Non-Labor	4,729	13,291	14,190	23,725	10,287
NSE	0	0	0	0	0
Total	5,184	14,330	15,445	25,015	10,898
FTE	4.3	9.2	10.2	13.0	5.3
Vacation & Sick (Nominal \$)					
Labor	77	179	238	227	108
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	77	179	238	227	108
FTE	0.8	1.7	2.0	2.6	1.0
Escalation to 2021\$					
Labor	181	323	310	228	0
Non-Labor	1,609	3,527	2,948	3,567	0
NSE	0	0	0	0	0
Total	1,789	3,850	3,258	3,795	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	712	1,541	1,804	1,744	720
Non-Labor	6,338	16,817	17,137	27,293	10,287
NSE	0	0	0	0	0
Total	7,051	18,358	18,941	29,037	11,006
FTE	5.1	10.9	12.2	15.6	6.3

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

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 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	-35	-25	-27	-386	0
Non-Labor	-51	-84	-133	-12,132	136
NSE	0	0	0	0	0
Total	-86	-109	-160	-12,518	136
FTE	-0.1	-0.1	-0.1	-0.1	0.0

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE
2017	-35	-51	0	-86	-0.1
Explanation:	Transferred historical recorded cost of SL-42-46 Relocation Project (Work Order 91648) out of SoCalGas Gas Transmission witness area under Workpaper 003040 and into SoCalGas Gas Distribution witness area under Workpaper 002620 where costs are forecasted.				
2017 Total	-35	-51	0	-86	-0.1
2018	-25	-84	0	-109	-0.1
Explanation:	Transferred historical recorded cost of SL-42-46 Relocation Project (Work Order 91648) out of SoCalGas Gas Transmission witness area under Workpaper 003040 and into SoCalGas Gas Distribution witness area under Workpaper 002620 where costs are forecasted.				
2018 Total	-25	-84	0	-109	-0.1
2019	-27	-140	0	-168	-0.1
Explanation:	Transferred historical recorded cost of SL-42-46 Relocation Project (Work Order 91648) out of SoCalGas Gas Transmission witness area under Workpaper 003040 and into SoCalGas Gas Distribution witness area under Workpaper 002620 where costs are forecasted.				
2019	0	8	0	8	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2019 Total	-27	-133	0	-160	-0.1
2020	-386	-12,425	0	-12,811	-0.1
Explanation:	Transferred historical recorded cost of SL-42-46 Relocation Project (Work Order 91648) out of SoCalGas Gas Transmission witness area under Workpaper 003040 and into SoCalGas Gas Distribution witness area under Workpaper 002620 where costs are forecasted.				
2020	0	293	0	293	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020 Total	-386	-12,132	0	-12,518	-0.1
2021	0	136	0	136	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2021 Total	0	136	0	136	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003040**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Detail: 003040.001 - 003040- Pipeline Relocation - Franchise/ Private/ Row, Non-collectible RAMP C5
 In-Service Date: Not Applicable
 Description:

003040- Pipeline Relocation - Franchise/ Private/ Row, NON-COLLECTIBLE, RAMP C5

Forecast In 2021 \$(000)			
Years	2022	2023	2024
Labor	613	588	655
Non-Labor	9,210	6,292	9,102
NSE	0	0	0
Total	9,823	6,880	9,757
FTE	5.4	5.1	5.7

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Detail: 003040.001 - 003040- Pipeline Relocation - Franchise/ Private/ Row, Non-collectible RAMP C5

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C05 T1 & T2

RAMP Line Item Name: Pipeline Relocation/ Replacement (HCA and Non-HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	1,956	3,241	2,270	3,219	8,730	20,787	25,164
Tranche 2 Cost Estimate	3,970	6,582	4,610	6,538	17,730	42,205	51,090

Cost Estimate Changes from RAMP:

None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of projects	15.00	15.00	15.00	14.00	44.00	41.00	53.00
Tranche 2 # of projects	31.00	31.00	32.00	30.00	93.00	87.00	108.00

Work Unit Changes from RAMP:

These activities are spread accross various workpapers.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	2.000	36.300
Tranche 2	1.000	23.200

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Detail: 003040.002 - 003040 - Pipeline Relocation - Franchise/ Private/ Row, Collectible, non-RAMP, Major Projects
 In-Service Date: Not Applicable

Description:

003040 - Pipeline Relocation - Franchise/ Private/ Row, Collectible, non-RAMP, Major Projects

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		51	0	0
Non-Labor		306	0	0
NSE		0	0	0
	Total	357	0	0
FTE		0.4	0.0	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00304.0
 Category: D. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Category-Sub: 1. PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Group: 003040 - GT PIPELINE RELOCATION-FRANCHISE/PRIVATE/ROW
 Workpaper Detail: 003040.003 - 003040 - Pipeline Relocation - Franchise/ Private/ Row, Non-collectible, Non-RAMP, Major Projects
 In-Service Date: Not Applicable

Description:

003040 - Pipeline Relocation - Franchise/ Private/ Row, Non-collectible, Non-RAMP, Major Projects

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		107	67	0
Non-Labor		1,077	3,060	250
NSE		0	0	0
	Total	1,184	3,127	250
FTE		0.9	0.6	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Category: E. COMPRESSOR STATIONS
 Workpaper: 003050

Summary for Category: E. COMPRESSOR STATIONS

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	1,638	1,129	1,129	869
Non-Labor	24,104	11,871	11,871	9,131
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	25,742	13,000	13,000	10,000
FTE	13.7	8.7	8.7	6.7

003050 GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Labor	1,638	1,129	1,129	869
Non-Labor	24,104	11,871	11,871	9,131
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	25,742	13,000	13,000	10,000
FTE	13.7	8.7	8.7	6.7

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00305.0
 Category: E. COMPRESSOR STATIONS
 Category-Sub: 1. COMPRESSOR STATIONS
 Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	5-YR Average	1,349	1,252	1,004	1,521	1,638	1,129	1,129	869
Non-Labor	5-YR Average	9,086	14,891	10,491	12,599	24,104	11,871	11,871	9,131
NSE	5-YR Average	0	0	0	0	0	0	0	0
Total		10,435	16,143	11,495	14,121	25,742	13,000	13,000	10,000
FTE	5-YR Average	9.4	9.5	7.3	12.3	13.7	8.7	8.7	6.7

Business Purpose:

This workpaper includes costs associated with the installation and replacement of compressor station equipment used in operating the transmission system. The nature of compressor station operation requires consistent maintenance and replacement of key engine components and control equipment to sustain the reliability and safety of the facility. To keep operating costs down, reliance is made on automating data gathering systems to monitor performance such as flows, pressures, and temperatures. Upgrading and replacing controls is critical to enable the station to operate at its highest efficiency.

Physical Description:

Individual project scopes may consist 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, local control networks, operator interfaces, continuous emissions monitoring systems (CEMS), precombustion chambers, and new catalysts.

Project Justification:

Capital project work will be continuously needed for compressor stations in the coming years as these critical facilities continue to age and to accumulate operating hours. This is routine work that will help sustain continued operations.

Note: Totals may include rounding differences.

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Area: GAS TRANSMISSION
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Category: E. COMPRESSOR STATIONS
Category-Sub: 1. COMPRESSOR STATIONS
Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Forecast Methodology:

Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology, which was then adjusted in the forecast period to reflect anticipated needs. It is anticipated that the modernization of two Gas Transmission compressor stations will require fewer capital improvements, which supports the reduced forecast methodology. SoCalGas determined that the base year recorded methodology and the other historical averages would provide excess funding during the forecast period.

Non-Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology, which was then adjusted in the forecast period to reflect anticipated needs. It is anticipated that the modernization of two Gas Transmission compressor stations will require fewer capital improvements, which supports the reduced forecast methodology. SoCalGas determined that the base year recorded methodology and the other historical averages would provide excess funding during the forecast period.

NSE - 5-YR Average

None.

Southern California Gas Company
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 Category: E. COMPRESSOR STATIONS
 Category-Sub: 1. COMPRESSOR STATIONS
 Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	5-YR Average	1,353	1,353	1,353	-224	-224	-484	1,129	1,129	869
Non-Labor	5-YR Average	14,234	14,234	14,234	-2,363	-2,363	-5,103	11,871	11,871	9,131
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		15,587	15,587	15,587	-2,587	-2,587	-5,587	13,000	13,000	10,000
FTE	5-YR Average	10.4	10.4	10.4	-1.7	-1.7	-3.7	8.7	8.7	6.7

Forecast Adjustment Details

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2022	-224	-2,363	0	-2,587	-1.7
Explanation:	This adjustment was made to reflect forecasted spend.				
2022 Total	-224	-2,363	0	-2,587	-1.7
2023	-224	-2,363	0	-2,587	-1.7
Explanation:	This adjustment was made to reflect forecasted spend.				
2023 Total	-224	-2,363	0	-2,587	-1.7
2024	-484	-5,103	0	-5,587	-3.7
Explanation:	This adjustment was made to reflect forecasted spend.				
2024 Total	-484	-5,103	0	-5,587	-3.7

Note: Totals may include rounding differences.

Southern California Gas Company
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 Budget Code: 00305.0
 Category: E. COMPRESSOR STATIONS
 Category-Sub: 1. COMPRESSOR STATIONS
 Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	861	844	699	1,124	1,392
Non-Labor	6,780	11,768	8,687	10,922	23,827
NSE	0	0	0	0	0
Total	7,641	12,613	9,385	12,047	25,219
FTE	8.0	8.1	6.1	10.3	11.5
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	30	277
NSE	0	0	0	0	0
Total	0	0	0	30	277
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	861	844	699	1,124	1,392
Non-Labor	6,780	11,768	8,687	10,952	24,104
NSE	0	0	0	0	0
Total	7,641	12,613	9,385	12,077	25,496
FTE	8.0	8.1	6.1	10.3	11.5
Vacation & Sick (Nominal \$)					
Labor	146	145	132	198	246
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	146	145	132	198	246
FTE	1.4	1.4	1.2	2.0	2.2
Escalation to 2021\$					
Labor	342	263	173	199	0
Non-Labor	2,306	3,123	1,804	1,647	0
NSE	0	0	0	0	0
Total	2,648	3,385	1,977	1,846	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	1,349	1,252	1,004	1,521	1,638
Non-Labor	9,086	14,891	10,491	12,599	24,104
NSE	0	0	0	0	0
Total	10,435	16,143	11,495	14,121	25,742
FTE	9.4	9.5	7.3	12.3	13.7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

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Capital Workpapers

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 Budget Code: 00305.0
 Category: E. COMPRESSOR STATIONS
 Category-Sub: 1. COMPRESSOR STATIONS
 Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	30	277
NSE	0	0	0	0	0
Total	0	0	0	30	277
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded in Nominal \$:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2017 Total	0	0	0	0	0.0
2018 Total	0	0	0	0	0.0
2019 Total	0	0	0	0	0.0
2020	0	30	0	30	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020 Total	0	30	0	30	0.0
2021	0	277	0	277	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2021 Total	0	277	0	277	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003050**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00305.0
 Category: E. COMPRESSOR STATIONS
 Category-Sub: 1. COMPRESSOR STATIONS
 Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003050.002 - 003050- GT COMPRESSOR STATIONS- NON-COLLECTIBLE, RAMP C10
 In-Service Date: Not Applicable
 Description:

003050- GT COMPRESSOR STATIONS- NON-COLLECTIBLE, RAMP C10

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		1,129	1,129	869
Non-Labor		11,871	11,871	9,131
NSE		0	0	0
	Total	13,000	13,000	10,000
FTE		8.7	8.7	6.7

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00305.0
 Category: E. COMPRESSOR STATIONS
 Category-Sub: 1. COMPRESSOR STATIONS
 Workpaper Group: 003050 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003050.002 - 003050- GT COMPRESSOR STATIONS- NON-COLLECTIBLE, RAMP C10

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C10

RAMP Line Item Name: Compressor Stations - Capital

Tranche(s): Tranche1: Transmission - Facilities

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	25,464	13,000	13,000	10,000	36,000	58,018	70,233

Cost Estimate Changes from RAMP:

None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	66.00	86.00	80.00	73.00	239.00	226.00	275.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	2.000	67.000

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Category: F. CATHODIC PROTECTION
Workpaper: 003060

Summary for Category: F. CATHODIC PROTECTION

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	754	594	594	520
Non-Labor	11,743	7,406	7,406	6,480
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	12,497	8,000	8,000	7,000
FTE	7.0	4.9	4.9	4.3

003060 GT CATHODIC PROTECTION

Labor	754	594	594	520
Non-Labor	11,743	7,406	7,406	6,480
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	12,497	8,000	8,000	7,000
FTE	7.0	4.9	4.9	4.3

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003060 - GT CATHODIC PROTECTION

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00306.0
 Category: F. CATHODIC PROTECTION
 Category-Sub: 1. CATHODIC PROTECTION
 Workpaper Group: 003060 - GT CATHODIC PROTECTION

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
	Years								
Labor	5-YR Average	662	529	715	730	754	594	594	520
Non-Labor	5-YR Average	7,155	4,683	8,045	10,641	11,743	7,406	7,406	6,480
NSE	5-YR Average	0	0	0	0	0	0	0	0
	Total	7,816	5,212	8,760	11,371	12,497	8,000	8,000	7,000
FTE	5-YR Average	5.0	4.3	5.7	6.0	7.0	4.9	4.9	4.3

Business Purpose:

This workpaper includes costs associated with the installation of cathodic protection equipment used to preserve the integrity of transmission pipelines by protecting them from external corrosion. These projects are mandated by federal and state pipeline safety regulations, and enable the maintenance of adequate protection to company equipment.

Physical Description:

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.

Project Justification:

Application of cathodic protection provides greater system protection against corrosion. This allows SoCalGas to meet safety compliance requirements that help to sustain reliability of gas transmission system.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00306.0
Category: F. CATHODIC PROTECTION
Category-Sub: 1. CATHODIC PROTECTION
Workpaper Group: 003060 - GT CATHODIC PROTECTION

Forecast Methodology:

Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology. Using this forecast method and then adjusting it down each year provided adequate funding to meet the needs of cathodic protection. SoCalGas determined that the base year recorded methodology and the other historical averages would provide excess funding during the forecast period.

Non-Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average methodology. Using this forecast method and then adjusting it down each year provided adequate funding to meet the needs of cathodic protection. SoCalGas determined that the base year recorded methodology and the other historical averages would provide excess funding during the forecast period.

NSE - 5-YR Average

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00306.0
 Category: F. CATHODIC PROTECTION
 Category-Sub: 1. CATHODIC PROTECTION
 Workpaper Group: 003060 - GT CATHODIC PROTECTION

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	5-YR Average	678	678	678	-84	-84	-158	594	594	520
Non-Labor	5-YR Average	8,453	8,453	8,453	-1,047	-1,047	-1,973	7,406	7,406	6,480
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		9,131	9,131	9,131	-1,131	-1,131	-2,131	8,000	8,000	7,000
FTE	5-YR Average	5.6	5.6	5.6	-0.7	-0.7	-1.3	4.9	4.9	4.3

Forecast Adjustment Details

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2022	-84	-1,047	0	-1,131	-0.7
Explanation:	This adjustment was made to reflect forecasted spend.				
2022 Total	-84	-1,047	0	-1,131	-0.7
2023	-84	-1,047	0	-1,131	-0.7
Explanation:	This adjustment was made to reflect forecasted spend.				
2023 Total	-84	-1,047	0	-1,131	-0.7
2024	-158	-1,973	0	-2,131	-1.3
Explanation:	This adjustment was made to reflect forecasted spend.				
2024 Total	-158	-1,973	0	-2,131	-1.3

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00306.0
Category: F. CATHODIC PROTECTION
Category-Sub: 1. CATHODIC PROTECTION
Workpaper Group: 003060 - GT CATHODIC PROTECTION

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	422	357	498	540	641
Non-Labor	5,339	3,701	6,661	9,244	11,720
NSE	0	0	0	0	0
Total	5,761	4,057	7,159	9,784	12,360
FTE	4.2	3.6	4.8	5.0	5.9
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	6	23
NSE	0	0	0	0	0
Total	0	0	0	6	23
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	422	357	498	540	641
Non-Labor	5,339	3,701	6,661	9,250	11,743
NSE	0	0	0	0	0
Total	5,761	4,057	7,159	9,790	12,384
FTE	4.2	3.6	4.8	5.0	5.9
Vacation & Sick (Nominal \$)					
Labor	72	61	94	95	113
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	72	61	94	95	113
FTE	0.8	0.7	0.9	1.0	1.1
Escalation to 2021\$					
Labor	168	111	123	95	0
Non-Labor	1,816	982	1,384	1,391	0
NSE	0	0	0	0	0
Total	1,984	1,093	1,507	1,486	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	662	529	715	730	754
Non-Labor	7,155	4,683	8,045	10,641	11,743
NSE	0	0	0	0	0
Total	7,816	5,212	8,760	11,371	12,497
FTE	5.0	4.3	5.7	6.0	7.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00306.0
 Category: F. CATHODIC PROTECTION
 Category-Sub: 1. CATHODIC PROTECTION
 Workpaper Group: 003060 - GT CATHODIC PROTECTION

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	6	23
NSE	0	0	0	0	0
Total	0	0	0	6	23
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded in Nominal \$:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2017 Total	0	0	0	0	0.0
2018 Total	0	0	0	0	0.0
2019 Total	0	0	0	0	0.0
2020	0	6	0	6	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020 Total	0	6	0	6	0.0
2021	0	23	0	23	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2021 Total	0	23	0	23	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003060**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00306.0
 Category: F. CATHODIC PROTECTION
 Category-Sub: 1. CATHODIC PROTECTION
 Workpaper Group: 003060 - GT CATHODIC PROTECTION
 Workpaper Detail: 003060.001 - 00306- GT CATHODIC PROTECTION, NON-COLLECTIBLE, RAMP C01
 In-Service Date: Not Applicable
 Description:

00306- GT CATHODIC PROTECTION, NON-COLLECTIBLE, RAMP. C01 - T1&T2

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		594	594	520
Non-Labor		7,406	7,406	6,480
NSE		0	0	0
	Total	8,000	8,000	7,000
FTE		4.9	4.9	4.3

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00306.0
 Category: F. CATHODIC PROTECTION
 Category-Sub: 1. CATHODIC PROTECTION
 Workpaper Group: 003060 - GT CATHODIC PROTECTION
 Workpaper Detail: 003060.001 - 00306- GT CATHODIC PROTECTION, NON-COLLECTIBLE, RAMP C01

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C01 - T1&T2

RAMP Line Item Name: Cathodic Protection - Capital (HCA & Non-HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	4,116	2,640	2,640	2,310	7,590	14,451	17,493
Tranche 2 Cost Estimate	8,357	5,360	5,360	4,690	15,410	29,339	35,516

Cost Estimate Changes from RAMP:

None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	18.00	23.00	22.00	20.00	65.00	60.00	76.00
Tranche 2 # of Projects	37.00	48.00	46.00	42.00	136.00	127.00	158.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	657.000	77.000
Tranche 2	363.000	51.000

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Category: G. MEASUREMENT & REGULATION STATIONS
 Workpaper: 003080

Summary for Category: G. MEASUREMENT & REGULATION STATIONS

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	4,963	4,324	4,555	3,054
Non-Labor	68,542	43,307	48,219	32,578
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	73,505	47,631	52,774	35,632
FTE	42.0	33.3	35.1	23.5

003080 GT M&R STATIONS ADDITIONS/REPLACEMENTS

Labor	4,963	4,324	4,555	3,054
Non-Labor	68,542	43,307	48,219	32,578
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	73,505	47,631	52,774	35,632
FTE	42.0	33.3	35.1	23.5

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2017	2018	2019	2020	2021	2022	2023	2024
Labor	5-YR Average	3,523	4,845	3,364	3,959	4,963	4,324	4,555	3,054
Non-Labor	5-YR Average	27,751	51,441	42,200	28,473	68,542	43,307	48,219	32,578
NSE	5-YR Average	0	0	0	0	0	0	0	0
Total		31,274	56,286	45,565	32,432	73,505	47,631	52,774	35,632
FTE	5-YR Average	25.8	35.1	25.4	30.5	42.0	33.3	35.1	23.5

Business Purpose:

This Budget Code includes costs of installing and rebuilding large meter set assemblies (MSAs) for transmission-served customers and pressure limiting stations on the gas transmission system. These assets require replacement three principal reasons: aging, change in use patterns and/or population encroachment, and enhancement of the transmission system to address gas quality and capacity issues. This capital work sustains reliable operation of critical transmission assets. This includes periodic replacement of local field measurement and control equipment directly linking with the Gas Operations SCADA system.

Physical Description:

Typical expenditures include 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, shelters, enclosures, controls and communication equipment. Projects include 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.

Project Justification:

Requested funding includes installation of new meter and regulation equipment associated with operation of the transmission pipeline system. It includes gas meters installed to help manage gas flows and quality on the transmission system, and to provide operating information to gas operations control personnel remotely managing the gas delivery system. Also included in this category are regulating stations used to control and limit gas pressure and the flow of gas within the gas transmission system, such as city gate stations. The installation of this equipment is associated with the safe and reliable local operation of SoCalGas pipelines in conformance with DOT and CPUC requirements for the limiting of pipeline and vessel operating pressures. All pipelines must be operated within their maximum allowable operating pressure parameters, and this equipment, whether for newly-installed pipelines or, where replacement is warranted, maintains this compliance and operating integrity.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00308.0
Category: G. MEASUREMENT & REGULATION STATIONS
Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS

Forecast Methodology:

Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average forecast methodology and then adjusted to provide adequate funding for anticipated projects. The anticipated projects in the forecast period are smaller in scale than what was completed in the most recent years. In addition, there have been many improvements from PSEP projects at some of the Transmission M&R sites over the last few years, which has improved conditions and reduced the need to upgrade these sites. The base year recorded, and the other historical average forecast methodologies would provide excess funding for the anticipated work during the forecast period.

Non-Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average forecast methodology and then adjusted to provide adequate funding for anticipated projects. The anticipated projects in the forecast period are smaller in scale than what was completed in the most recent years. In addition, there have been many improvements from PSEP projects at some of the Transmission M&R sites over the last few years, which has improved conditions and reduced the need to upgrade these sites. The base year recorded, and the other historical average forecast methodologies would provide excess funding for the anticipated work during the forecast period.

NSE - 5-YR Average

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	5-YR Average	4,131	4,131	4,131	193	424	-1,077	4,324	4,555	3,054
Non-Labor	5-YR Average	43,681	43,681	43,681	-374	4,538	-11,103	43,307	48,219	32,578
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		47,812	47,812	47,812	-181	4,962	-12,180	47,631	52,774	35,632
FTE	5-YR Average	31.8	31.8	31.8	1.5	3.3	-8.3	33.3	35.1	23.5

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	868	6,763	0	7,631	6.7
Explanation:	Adjustment to add Collectible, Non-RAMP projects to forecast				
2022	-675	-7,137	0	-7,812	-5.2
Explanation:	This adjustment was made to reflect forecasted spend.				
2022 Total	193	-374	0	-181	1.5
2023	1,098	11,675	0	12,773	8.5
Explanation:	Adjustment to add Collectible, Non-RAMP projects to forecast				
2023	-674	-7,137	0	-7,811	-5.2
Explanation:	This adjustment was made to reflect forecasted spend.				
2023 Total	424	4,538	0	4,962	3.3
2024	30	602	0	632	0.2
Explanation:	Adjustment to add Collectible, Non-RAMP projects to forecast				
2024	-1,107	-11,705	0	-12,812	-8.5
Explanation:	This adjustment was made to reflect forecasted spend.				
2024 Total	-1,077	-11,103	0	-12,180	-8.3

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	2,248	3,267	2,342	2,926	527
Non-Labor	20,708	40,654	34,942	23,738	11,804
NSE	0	0	0	0	0
Total	22,956	43,921	37,283	26,664	12,331
FTE	21.9	29.8	21.3	25.5	4.6
Adjustments (Nominal \$)**					
Labor	0	0	0	0	3,691
Non-Labor	0	0	0	1,013	56,737
NSE	0	0	0	0	0
Total	0	0	0	1,013	60,429
FTE	0.0	0.0	0.0	0.0	30.7
Recorded-Adjusted (Nominal \$)					
Labor	2,248	3,267	2,342	2,926	4,218
Non-Labor	20,708	40,654	34,942	24,752	68,542
NSE	0	0	0	0	0
Total	22,956	43,921	37,283	27,678	72,760
FTE	21.9	29.8	21.3	25.5	35.3
Vacation & Sick (Nominal \$)					
Labor	381	562	444	516	745
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	381	562	444	516	745
FTE	3.9	5.3	4.1	5.0	6.7
Escalation to 2021\$					
Labor	894	1,016	579	517	0
Non-Labor	7,043	10,787	7,258	3,721	0
NSE	0	0	0	0	0
Total	7,937	11,803	7,837	4,239	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	3,523	4,845	3,364	3,959	4,963
Non-Labor	27,751	51,441	42,200	28,473	68,542
NSE	0	0	0	0	0
Total	31,274	56,286	45,565	32,432	73,505
FTE	25.8	35.1	25.4	30.5	42.0

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2017	2018	2019	2020	2021
Labor		0	0	0	0	3,691
Non-Labor		0	0	0	1,013	56,737
NSE		0	0	0	0	0
	Total	0	0	0	1,013	60,429
FTE		0.0	0.0	0.0	0.0	30.7

Detail of Adjustments to Recorded in Nominal \$:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2017 Total	0	0	0	0	0.0
2018 Total	0	0	0	0	0.0
2019 Total	0	0	0	0	0.0
2020	0	1,013	0	1,013	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020 Total	0	1,013	0	1,013	0.0
2021	3,691	53,697	0	57,388	30.7
Explanation:	Moving to 308.				
2021	0	3,041	0	3,041	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2021 Total	3,691	56,737	0	60,429	30.7

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003080**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003080.001 - 003080- GT M&R STATIONS- 318 NON-COLLECTIBLE, RAMP C12
 In-Service Date: Not Applicable
 Description:

003080- GT M&R STATIONS- 318 NON-COLLECTIBLE, RAMP.C12
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Forecast In 2021 \$(000)			
Years	2022	2023	2024
Labor	2,592	2,592	2,268
Non-Labor	27,408	27,408	23,982
NSE	0	0	0
Total	30,000	30,000	26,250
FTE	20.0	20.0	17.5

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003080.001 - 003080- GT M&R STATIONS- 318 NON-COLLECTIBLE, RAMP C12

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C12 T1 & T2

RAMP Line Item Name: Measurement & Regulation - Capital (HCA & Non-HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	17,255	9,900	9,900	8,662	28,462	26,421	31,984
Tranche 2 Cost Estimate	35,034	20,100	20,100	17,588	57,788	53,644	64,937

Cost Estimate Changes from RAMP:

None. Subs .001 and .002 are both C12.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	17.00	18.00	18.00	18.00	54.00	68.00	86.00
Tranche 2 # of Projects	35.00	39.00	39.00	38.00	116.00	148.00	181.00

Work Unit Changes from RAMP:

None. Subs. 001 and .002 are both C12.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	2.000	4.700
Tranche 2	1.000	3.200

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003080.002 - 00380- GT M&R STATIONS - 338 Non-COLLECTIBLE, RAMP C12
 In-Service Date: Not Applicable
 Description:

00380- GT M&R STATIONS - 338 Non-COLLECTIBLE, RAMP C12.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		864	864	756
Non-Labor		9,136	9,136	7,994
NSE		0	0	0
	Total	10,000	10,000	8,750
FTE		6.6	6.6	5.8

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003080.002 - 00380- GT M&R STATIONS - 338 Non-COLLECTIBLE, RAMP C12

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C12 T1 & T2

RAMP Line Item Name: Measurement & Regulation - Capital (HCA & Non-HCA)

Tranche(s): Tranche1: Transmission - HCA; Tranche2: Transmission - Non-HCA

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	5,752	3,300	3,300	2,887	9,487	26,421	31,984
Tranche 2 Cost Estimate	11,678	6,700	6,700	5,863	19,263	53,644	64,937

Cost Estimate Changes from RAMP:

None. Subs .001 and .002 are both C12.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	5.00	7.00	7.00	6.00	20.00	68.00	86.00
Tranche 2 # of Projects	12.00	14.00	14.00	13.00	41.00	148.00	181.00

Work Unit Changes from RAMP:

None. Subs .001 and .002 are both C12.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	2.000	4.700
Tranche 2	1.000	3.200

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00308.0
 Category: G. MEASUREMENT & REGULATION STATIONS
 Category-Sub: 1. MEASUREMENT & REGULATION STATIONS
 Workpaper Group: 003080 - GT M&R STATIONS ADDITIONS/REPLACEMENTS
 Workpaper Detail: 003080.003 - 003080 - M&R STATIONS BC 318, COLLECTIBLE, Non-RAMP, Major Projects
 In-Service Date: Not Applicable
 Description:

003080 - M&R STATIONS COLLECTIBLE, Non-RAMP, Major Projects

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		868	1,099	30
Non-Labor		6,763	11,675	602
NSE		0	0	0
	Total	7,631	12,774	632
FTE		6.7	8.5	0.2

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Category: H. SECURITY & AUXILIARY EQUIPMENT
Workpaper: 003090

Summary for Category: H. SECURITY & AUXILIARY EQUIPMENT

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	666	392	295	295
Non-Labor	9,756	3,608	2,705	2,705
NSE	0	0	0	0
Total	10,422	4,000	3,000	3,000
FTE	5.6	3.4	2.5	2.5

003090 GT AUX EQUIPMENT& INFRASTRUCTURE

Labor	666	392	295	295
Non-Labor	9,756	3,608	2,705	2,705
NSE	0	0	0	0
Total	10,422	4,000	3,000	3,000
FTE	5.6	3.4	2.5	2.5

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003090 - GT AUX EQUIPMENT& INFRASTRUCTURE

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
	Years								
Labor	5-YR Average	591	803	320	588	666	392	295	295
Non-Labor	5-YR Average	3,000	6,279	2,681	6,652	9,756	3,608	2,705	2,705
NSE	5-YR Average	0	0	0	0	0	0	0	0
	Total	3,591	7,082	3,001	7,240	10,422	4,000	3,000	3,000
FTE	5-YR Average	4.7	6.5	6.3	4.5	5.6	3.4	2.5	2.5

Business Purpose:

The Security and Auxiliary Equipment capital request captures the cost of equipment installation to address security for critical gas facilities owned and operated by SoCalGas. This category will further harden the security at critical sites to better protect them from security breaches.

Physical Description:

Requested funding in this category includes new installations or upgrades of aging M&R station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of SoCalGas centralized SCADA computer system. Also included are telemetry-related upgrades to remote site security systems and remote control systems for critical in-line valves. This work paper represents seven such projects whose individual funding is less than that typically appearing on separate work papers and is thus presented for consideration here as a "blanket" submission. This work paper includes recorded and estimated costs in budget codes 309, 319 and 339.

Project Justification:

This capital work contributes to reliable operation of critical transmission assets and ensures they are not compromised by equipment deployed past its useful life or by physical sabotage that can occur in remote settings. Some assets require replacement due to aging, change in use patterns, or enhancement of the transmission system to contend with gas quality and capacity issues, and security needs in an increasingly complex environment where exposure to risk is being constantly evaluated.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00309.0
Category: H. SECURITY & AUXILIARY EQUIPMENT
Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE

Forecast Methodology:

Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average forecast methodology and then adjusted to provide adequate funding for anticipated projects. The base year recorded, and the other historical average forecast methodologies provide funding in excess of the anticipated work during the forecast period. The anticipated forecasted stand-alone physical security projects are small in nature. In addition, costs have been reduced due to inter-departmental coordination of physical security hardening on projects. Details related to this can be found in the Direct Testimony of Derick R. Cooper (SCG – 23).

Non-Labor - 5-YR Average

The TY 2024 forecast was determined using the five-year average forecast methodology and then adjusted to provide adequate funding for anticipated projects. The base year recorded, and the other historical average forecast methodologies provide funding in excess of the anticipated work during the forecast period. The anticipated forecasted stand-alone physical security projects are small in nature. In addition, costs have been reduced due to inter-departmental coordination of physical security hardening on projects. Details related to this can be found in the Direct Testimony of Derick R. Cooper (SCG – 23).

NSE - 5-YR Average

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	5-YR Average	594	594	594	-202	-299	-299	392	295	295
Non-Labor	5-YR Average	5,674	5,674	5,674	-2,066	-2,969	-2,969	3,608	2,705	2,705
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		6,268	6,268	6,268	-2,268	-3,268	-3,268	4,000	3,000	3,000
FTE	5-YR Average	5.5	5.5	5.5	-2.1	-3.0	-3.0	3.4	2.5	2.5

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	-202	-2,066	0	-2,268	-2.1
Explanation: This adjustment was made to reflect forecasted spend.					
2022 Total	-202	-2,066	0	-2,268	-2.1
2023	-299	-2,969	0	-3,268	-3.0
Explanation: This adjustment was made to reflect forecasted spend.					
2023 Total	-299	-2,969	0	-3,268	-3.0
2024	-299	-2,969	0	-3,268	-3.0
Explanation: This adjustment was made to reflect forecasted spend.					
2024 Total	-299	-2,969	0	-3,268	-3.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00309.0
Category: H. SECURITY & AUXILIARY EQUIPMENT
Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	377	541	223	435	661
Non-Labor	2,239	4,963	2,220	5,764	9,932
NSE	0	0	0	0	0
Total	2,615	5,504	2,443	6,199	10,593
FTE	4.0	5.5	5.3	3.8	5.8
Adjustments (Nominal \$)**					
Labor	0	0	0	0	-95
Non-Labor	0	0	0	18	-176
NSE	0	0	0	0	0
Total	0	0	0	18	-271
FTE	0.0	0.0	0.0	0.0	-1.1
Recorded-Adjusted (Nominal \$)					
Labor	377	541	223	435	566
Non-Labor	2,239	4,963	2,220	5,783	9,756
NSE	0	0	0	0	0
Total	2,615	5,504	2,443	6,217	10,322
FTE	4.0	5.5	5.3	3.8	4.7
Vacation & Sick (Nominal \$)					
Labor	64	93	42	77	100
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	64	93	42	77	100
FTE	0.7	1.0	1.0	0.7	0.9
Escalation to 2021\$					
Labor	150	168	55	77	0
Non-Labor	761	1,317	461	869	0
NSE	0	0	0	0	0
Total	911	1,485	516	946	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	591	803	320	588	666
Non-Labor	3,000	6,279	2,681	6,652	9,756
NSE	0	0	0	0	0
Total	3,591	7,082	3,001	7,240	10,422
FTE	4.7	6.5	6.3	4.5	5.6

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	-95
Non-Labor	0	0	0	18	-176
NSE	0	0	0	0	0
Total	0	0	0	18	-271
FTE	0.0	0.0	0.0	0.0	-1.1

Detail of Adjustments to Recorded in Nominal \$:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2017 Total	0	0	0	0	0.0
2018 Total	0	0	0	0	0.0
2019 Total	0	0	0	0	0.0
2020	0	18	0	18	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020 Total	0	18	0	18	0.0
2021	0	93	0	93	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2021	-95	-269	0	-364	-1.1
Explanation:	Adjustment being made due to an internal order being mapped to 309 when it should be mapped to 405. The costs have been adjusted correctly to show on workpaper 405.				
2021 Total	-95	-176	0	-271	-1.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003090**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE
 Workpaper Detail: 003090.001 - 003090- Security and Auxiliary Equipment, NON-COLLECTIBLE, RAMP Security and Auxiliary Equipment C15
 In-Service Date: Not Applicable

Description:

003090- Security and Auxiliary Equipment, NON-COLLECTIBLE, RAMP C15

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		209	112	112
Non-Labor		1,492	589	589
NSE		0	0	0
	Total	1,701	701	701
FTE		1.6	0.7	0.7

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE
 Workpaper Detail: 003090.001 - 003090- Security and Auxiliary Equipment, NON-COLLECTIBLE, RAMP Security and Auxiliary Equi

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C15

RAMP Line Item Name: Security and Auxiliary Equipment

Tranche(s): Tranche1: Overall

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	10,709	1,701	701	701	3,103	12,887	15,600

Cost Estimate Changes from RAMP:

None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 # of Projects	46.00	35.00	35.00	39.00	109.00	103.00	127.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	7.000	1.000

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE
 Workpaper Detail: 003090.002 - RAMP SCG - CFF - 5 Physical Security
 In-Service Date: Not Applicable

Description:

RAMP SCG - CFF - 5 Physical Security

Forecast In 2021 \$(000)			
Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor	177	177	177
Non-Labor	2,041	2,041	2,041
NSE	0	0	0
Total	<u>2,218</u>	<u>2,218</u>	<u>2,218</u>
FTE	1.7	1.7	1.7

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE
 Workpaper Detail: 003090.002 - RAMP SCG - CFF - 5 Physical Security

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-CFF-5 Physical Security
 RAMP Line Item ID: 1
 RAMP Line Item Name: RAMP SCG - CFF - 5 Physical Security
 Tranche(s): Tranche1: RAMP SCG - CFF - 5 Physical Security

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	190	2,218	2,218	2,218	6,654	2,218	2,711

Cost Estimate Changes from RAMP:
None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 No units of measure, so the default will be 1. These costs include multiple physical security proje	1.00	1.00	1.00	1.00	3.00	1.00	1.00

Work Unit Changes from RAMP:
None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:
NA

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE
 Workpaper Detail: 003090.003 - RAMP M7, Workplace Violence Prevention Program Enhancements
 In-Service Date: Not Applicable

Description:

RAMP M7, Workplace Violence Prevention Program Enhancements

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		6	6	6
Non-Labor		75	75	75
NSE		0	0	0
	Total	<u>81</u>	<u>81</u>	<u>81</u>
FTE		0.1	0.1	0.1

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00309.0
 Category: H. SECURITY & AUXILIARY EQUIPMENT
 Category-Sub: 1. SECURITY & AUXILIARY EQUIPMENT
 Workpaper Group: 003090 - GT AUX EQUIPMENT& INFRASTRUCTURE
 Workpaper Detail: 003090.003 - RAMP M7, Workplace Violence Prevention Program Enhancements

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-5 Incident Involving an Employee
 RAMP Line Item ID: M07
 RAMP Line Item Name: Workplace Violence Prevention Program Enhancements
 Tranche(s): Tranche1: Non-vehicle Incident

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	0	81	81	81	243	658	950

Cost Estimate Changes from RAMP:

This forecast is for Medeco Key Rollout expenses only.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 FTEs	0.00	1.00	1.00	1.00	3.00	3.00	3.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	162.000	19.000

RSE Changes from RAMP:

General changes to risks scores or RSE values are primarily due to changes in the MAVF and RSE methodology , as discussed in the RAMP to GRC Integration testimony of R. Scott Pearson and Gregory S. Flores (SCG-03).

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Category: I. BUILDINGS & IMPROVEMENTS
Workpaper: 006030

Summary for Category: I. BUILDINGS & IMPROVEMENTS

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	39	39	39	39
Non-Labor	2,448	961	961	961
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	2,487	1,000	1,000	1,000
FTE	0.4	0.4	0.4	0.4

006030 GT BUILDINGS & IMPROVEMENTS

Labor	39	39	39	39
Non-Labor	2,448	961	961	961
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	2,487	1,000	1,000	1,000
FTE	0.4	0.4	0.4	0.4

Note: Totals may include rounding differences.

Beginning of Workpaper Group
006030 - GT BUILDINGS & IMPROVEMENTS

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00603.0
 Category: I. BUILDINGS & IMPROVEMENTS
 Category-Sub: 1. BUILDINGS & IMPROVEMENTS
 Workpaper Group: 006030 - GT BUILDINGS & IMPROVEMENTS

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	3-YR Average	84	140	133	123	39	39	39	
Non-Labor	3-YR Average	5,143	2,943	2,996	1,793	2,448	961	961	
NSE	3-YR Average	0	0	0	0	0	0	0	
Total		5,227	3,083	3,129	1,916	2,487	1,000	1,000	
FTE	3-YR Average	0.7	1.0	1.4	1.1	0.4	0.4	0.4	

Business Purpose:

Buildings and Improvements provides funding for construction, replacement or upgrades to structures used by Gas Transmission to contain, shelter and/or protect Transmission equipment such as meter stations, pressure regulating equipment, critical valves, or controls equipment. Such protection is required by Federal or local laws, but most often it is required to protect vulnerable and expensive equipment, often in remote locations.

Physical Description:

Buildings and Improvements provides funding for construction, replacement or upgrades to structures used by Gas Transmission to contain, shelter and/or protect Transmission equipment such as meter stations, pressure regulating equipment, critical valves, or controls equipment. Such protection is required by Federal or local laws, but most often it is required to protect vulnerable and expensive equipment, often in remote locations.

Project Justification:

The justification for this activity relates to the ongoing requirement for protective structures that shelter critical controls or SCADA-related equipment, for perimeter barriers and reinforced fencing, and for enhanced video monitoring and lock systems.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00603.0
Category: I. BUILDINGS & IMPROVEMENTS
Category-Sub: 1. BUILDINGS & IMPROVEMENTS
Workpaper Group: 006030 - GT BUILDINGS & IMPROVEMENTS

Forecast Methodology:

Labor - 3-YR Average

The TY 2024 forecast was developed using the three-year historical average methodology and then adjusted each year to account for anticipated spending on Buildings and Improvements. The activity anticipated in this category is projected to be lower than both the base year recorded costs and the historical averages. The three-year historical average is the closest starting point to the anticipated forecast spending.

Non-Labor - 3-YR Average

The TY 2024 forecast was developed using the three-year historical average methodology and then adjusted each year to account for anticipated spending on Buildings and Improvements. The activity anticipated in this category is projected to be lower than both the base year recorded costs and the historical averages. The three-year historical average is the closest starting point to the anticipated forecast spending.

NSE - 3-YR Average

There are no NSE expenses in this work group.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00603.0
 Category: I. BUILDINGS & IMPROVEMENTS
 Category-Sub: 1. BUILDINGS & IMPROVEMENTS
 Workpaper Group: 006030 - GT BUILDINGS & IMPROVEMENTS

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	3-YR Average	98	98	98	-59	-59	-59	39	39	39
Non-Labor	3-YR Average	2,413	2,413	2,413	-1,452	-1,452	-1,452	961	961	961
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		2,511	2,511	2,511	-1,511	-1,511	-1,511	1,000	1,000	1,000
FTE	3-YR Average	1.0	1.0	1.0	-0.6	-0.6	-0.6	0.4	0.4	0.4

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	-59	-1,452	0	-1,511	-0.6
Explanation: Adjustment to reflect expected forecast.					
2022 Total	-59	-1,452	0	-1,511	-0.6
2023	-59	-1,452	0	-1,511	-0.6
Explanation: Adjustment make to reflect forecast.					
2023 Total	-59	-1,452	0	-1,511	-0.6
2024	-59	-1,452	0	-1,511	-0.6
Explanation: Adjustment make to reflect forecast.					
2024 Total	-59	-1,452	0	-1,511	-0.6

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00603.0
Category: I. BUILDINGS & IMPROVEMENTS
Category-Sub: 1. BUILDINGS & IMPROVEMENTS
Workpaper Group: 006030 - GT BUILDINGS & IMPROVEMENTS

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	54	94	93	91	33
Non-Labor	3,838	2,326	2,481	1,559	2,448
NSE	0	0	0	0	0
Total	3,891	2,421	2,573	1,650	2,481
FTE	0.6	0.8	1.2	0.9	0.3
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	54	94	93	91	33
Non-Labor	3,838	2,326	2,481	1,559	2,448
NSE	0	0	0	0	0
Total	3,891	2,421	2,573	1,650	2,481
FTE	0.6	0.8	1.2	0.9	0.3
Vacation & Sick (Nominal \$)					
Labor	9	16	18	16	6
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	9	16	18	16	6
FTE	0.1	0.2	0.2	0.2	0.1
Escalation to 2021\$					
Labor	21	29	23	16	0
Non-Labor	1,305	617	515	234	0
NSE	0	0	0	0	0
Total	1,327	647	538	250	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	84	140	133	123	39
Non-Labor	5,143	2,943	2,996	1,793	2,448
NSE	0	0	0	0	0
Total	5,227	3,083	3,129	1,916	2,487
FTE	0.7	1.0	1.4	1.1	0.4

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00603.0
 Category: I. BUILDINGS & IMPROVEMENTS
 Category-Sub: 1. BUILDINGS & IMPROVEMENTS
 Workpaper Group: 006030 - GT BUILDINGS & IMPROVEMENTS

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
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Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 006030**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00603.0
 Category: I. BUILDINGS & IMPROVEMENTS
 Category-Sub: 1. BUILDINGS & IMPROVEMENTS
 Workpaper Group: 006030 - GT BUILDINGS & IMPROVEMENTS
 Workpaper Detail: 006030.001 - 006030-GT BUILDING IMPROVEMENTS
 In-Service Date: Not Applicable
 Description:

006030-GT BUILDING IMPROVEMENTS

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		39	39	39
Non-Labor		961	961	961
NSE		0	0	0
	Total	1,000	1,000	1,000
FTE		0.4	0.4	0.4

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Category: J. CAPITAL TOOLS
Workpaper: 007360

Summary for Category: J. CAPITAL TOOLS

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	9	8	8	8
Non-Labor	1,197	884	884	884
NSE	0	0	0	0
Total	1,206	892	892	892
FTE	0.1	0.1	0.1	0.1

007360 GAS TRANSMISSION CAPITAL TOOLS

Labor	9	8	8	8
Non-Labor	1,197	884	884	884
NSE	0	0	0	0
Total	1,206	892	892	892
FTE	0.1	0.1	0.1	0.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
007360 - GAS TRANSMISSION CAPITAL TOOLS

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00736.0
 Category: J. CAPITAL TOOLS
 Category-Sub: 1. CAPITAL TOOLS
 Workpaper Group: 007360 - GAS TRANSMISSION CAPITAL TOOLS

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
	Years								
Labor	3-YR Average	20	18	11	1	9	8	8	8
Non-Labor	3-YR Average	1,987	1,115	1,035	419	1,197	884	884	884
NSE	3-YR Average	0	0	0	0	0	0	0	0
	Total	2,006	1,133	1,046	420	1,206	892	892	892
FTE	3-YR Average	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1

Business Purpose:

Requested funding in this category includes new tools for transmission capital. Often times these tools are needed to replace broken tools or items that have passed their useful life.

Physical Description:

Examples of such tools include volt/amp meters, Global Positioning System (GPS) receivers, leak detection equipment, gauges, wrenches, and tapping and stopping equipment. Purchases are typically to replace old, worn or damaged tools used in the field.

Project Justification:

These capital tools contribute to reliable operation of critical transmission assets. Some assets require replacement due to aging, change in use patterns, or enhancement of the transmission system to contend with gas quality and capacity issues, and security needs in an increasingly complex environment where exposure to risk is being constantly evaluated.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00736.0
Category: J. CAPITAL TOOLS
Category-Sub: 1. CAPITAL TOOLS
Workpaper Group: 007360 - GAS TRANSMISSION CAPITAL TOOLS

Forecast Methodology:

Labor - 3-YR Average

The TY 2024 forecast was established using the three-year average methodology. Routine tool purchase requirements are identified during each year as part of the regular course of maintenance and construction activities and are expected to continue during the forecast period. The three-year average provides funding for these anticipated purchases during the forecast period.

Non-Labor - 3-YR Average

The TY 2024 forecast was established using the three-year average methodology. Routine tool purchase requirements are identified during each year as part of the regular course of maintenance and construction activities and are expected to continue during the forecast period. The three-year average provides funding for these anticipated purchases during the forecast period.

NSE - 3-YR Average

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00736.0
 Category: J. CAPITAL TOOLS
 Category-Sub: 1. CAPITAL TOOLS
 Workpaper Group: 007360 - GAS TRANSMISSION CAPITAL TOOLS

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	3-YR Average	7	7	7	1	1	1	8	8	8
Non-Labor	3-YR Average	884	884	884	0	0	0	884	884	884
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		891	891	891	1	1	1	892	892	892
FTE	3-YR Average	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

Forecast Adjustment Details

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2022	1	0	0	1	0.1
Explanation: adjustment due to 5 year average calculation had zero FTE					
2022 Total	1	0	0	1	0.1
2023	1	0	0	1	0.1
Explanation: adjustment due to 5 year average calculation had zero FTE					
2023 Total	1	0	0	1	0.1
2024	1	0	0	1	0.1
Explanation: adjustment due to 5 year average calculation had zero FTE					
2024 Total	1	0	0	1	0.1

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00736.0
Category: J. CAPITAL TOOLS
Category-Sub: 1. CAPITAL TOOLS
Workpaper Group: 007360 - GAS TRANSMISSION CAPITAL TOOLS

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	13	12	8	0	7
Non-Labor	1,483	881	857	364	1,197
NSE	0	0	0	0	0
Total	1,495	894	865	365	1,204
FTE	0.1	0.1	0.0	0.0	0.1
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	13	12	8	0	7
Non-Labor	1,483	881	857	364	1,197
NSE	0	0	0	0	0
Total	1,495	894	865	365	1,204
FTE	0.1	0.1	0.0	0.0	0.1
Vacation & Sick (Nominal \$)					
Labor	2	2	1	0	1
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	2	2	1	0	1
FTE	0.0	0.0	0.0	0.0	0.0
Escalation to 2021\$					
Labor	5	4	2	0	0
Non-Labor	504	234	178	55	0
NSE	0	0	0	0	0
Total	509	238	180	55	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	20	18	11	1	9
Non-Labor	1,987	1,115	1,035	419	1,197
NSE	0	0	0	0	0
Total	2,006	1,133	1,046	420	1,206
FTE	0.1	0.1	0.0	0.0	0.1

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00736.0
 Category: J. CAPITAL TOOLS
 Category-Sub: 1. CAPITAL TOOLS
 Workpaper Group: 007360 - GAS TRANSMISSION CAPITAL TOOLS

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
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Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 007360**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00736.0
 Category: J. CAPITAL TOOLS
 Category-Sub: 1. CAPITAL TOOLS
 Workpaper Group: 007360 - GAS TRANSMISSION CAPITAL TOOLS
 Workpaper Detail: 007360.001 - 00736 - GT CAP TOOLS
 In-Service Date: Not Applicable

Description:

Capital Tools

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		8	8	8
Non-Labor		884	884	884
NSE		0	0	0
	Total	892	892	892
FTE		0.1	0.1	0.1

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Category: K. COMPRESSOR STATION MODERNIZATION
 Workpaper: 003350

Summary for Category: K. COMPRESSOR STATION MODERNIZATION

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	2,391	2,239	141	0
Non-Labor	55,420	36,765	229	0
NSE	0	0	0	0
Total	57,811	39,004	370	0
FTE	17.7	14.0	0.7	0.0

003350 GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN

Labor	2,391	2,239	141	0
Non-Labor	55,420	36,765	229	0
NSE	0	0	0	0
Total	57,811	39,004	370	0
FTE	17.7	14.0	0.7	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS
QUALITY/ECONOMIC DRIVEN

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	Zero-Based	2,111	3,494	3,091	2,259	2,391	2,239	141	0
Non-Labor	Zero-Based	26,525	74,505	120,944	120,933	55,420	36,765	229	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		28,636	77,999	124,034	123,192	57,810	39,004	370	0
FTE	Zero-Based	15.1	25.4	23.0	17.1	17.7	14.0	0.7	0.0

Business Purpose:

The main purpose of the Blythe Compressor Modernization (BCM) project is to replace and modernize aging compressors and associated auxiliary equipment and infrastructure to maintain reliability of Southern System (Southern System reliability is one of the top enterprise risks for SoCalGas), reduce exhaust emissions, and improve operational efficiency and resiliency.

Physical Description:

Intall a new compressor building with two (2) new Siemens/Dresser SGT-300 Turbo-Compressor/Driver units (7226 HP each) and associated inlet filters and Selective Catalytic Reduction (SCR) Emissions Packages. Install new auxiliary systems including Instrument Air, Fuel Gas Supply and Cooling Water to support the new units . Install a new gen-set building with five (5) new 715 kW Generators to replace existing generators and power new and existing infrastructure.

Project Justification:

The installation of these new compressors will allow SoCalGas to continue to meet the current design specification and capacity of 1.2 BCF per day. Upon completion, the Blythe Compressor Replacement project will provide the necessary operational reliability and resiliency to support SoCalGas' transmission system's operational needs while resulting in the reduction of criteria air pollutants such as oxides of nitrogen, greenhouse gases, particulate matter, and fugitive methane emissions through the installation of select catalytic reduction and other applied technologies.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00335.0
Category: K. COMPRESSOR STATION MODERNIZATION
Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN

Forecast Methodology:

Labor - Zero-Based

For BCM, the forecast method developed for this cost category is a zero-based methodology using estimates based on knowledge of experienced personnel of previously completed, similar sized project work.

Non-Labor - Zero-Based

For BCM, the forecast method developed for this cost category is a zero-based methodology using estimates based on knowledge of experienced personnel, major equipment and material vendor quotes of previously completed, similar sized project work. The underlying major cost drivers for this capital project relate to schedule, equipment and material pricing, craft availability, wage rates and productivity.

NSE - Zero-Based

Not applicable.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Zero-Based	2,239	141	0	0	0	0	2,239	141	0
Non-Labor	Zero-Based	36,765	229	0	0	0	0	36,765	229	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		39,004	370	0	0	0	0	39,004	370	0
FTE	Zero-Based	14.0	0.7	0.0	0.0	0.0	0.0	14.0	0.7	0.0

Forecast Adjustment Details

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2022 Total	0	0	0	0	0.0
2023 Total	0	0	0	0	0.0
2024 Total	0	0	0	0	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	1,347	2,563	2,838	2,435	3,215
Non-Labor	19,793	59,353	103,012	107,419	65,948
NSE	0	0	0	0	0
Total	21,140	61,917	105,850	109,854	69,162
FTE	12.8	23.4	25.3	20.5	24.1
Adjustments (Nominal \$)**					
Labor	0	-208	-687	-766	-1,183
Non-Labor	0	-472	-2,870	-2,291	-10,528
NSE	0	0	0	0	0
Total	0	-680	-3,557	-3,057	-11,711
FTE	0.0	-1.9	-6.0	-6.2	-9.2
Recorded-Adjusted (Nominal \$)					
Labor	1,347	2,356	2,151	1,669	2,032
Non-Labor	19,793	58,881	100,141	105,127	55,420
NSE	0	0	0	0	0
Total	21,140	61,237	102,293	106,797	57,451
FTE	12.8	21.5	19.3	14.3	14.9
Vacation & Sick (Nominal \$)					
Labor	228	405	408	294	359
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	228	405	408	294	359
FTE	2.3	3.9	3.7	2.8	2.8
Escalation to 2021\$					
Labor	536	733	532	295	0
Non-Labor	6,732	15,624	20,802	15,806	0
NSE	0	0	0	0	0
Total	7,268	16,356	21,334	16,101	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	2,111	3,494	3,091	2,259	2,391
Non-Labor	26,525	74,505	120,944	120,933	55,420
NSE	0	0	0	0	0
Total	28,636	77,999	124,034	123,192	57,810
FTE	15.1	25.4	23.0	17.1	17.7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	-208	-687	-766	-1,183
Non-Labor	0	-472	-2,870	-2,291	-10,528
NSE	0	0	0	0	0
Total	0	-680	-3,557	-3,057	-11,711
FTE	0.0	-1.9	-6.0	-6.2	-9.2

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE
2017 Total	0	0	0	0	0.0
2018	-208	-472	0	-680	-1.9
Explanation:	One-sided adjustment to exclude Ventura Compressor Station Modernization costs				
2018 Total	-208	-472	0	-680	-1.9
2019	-687	-2,870	0	-3,557	-6.0
Explanation:	One-sided adjustment to exclude Ventura Compressor Station Modernization costs				
2019 Total	-687	-2,870	0	-3,557	-6.0
2020	0	79	0	79	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2020	-766	-2,370	0	-3,136	-6.2
Explanation:	One-sided adjustment to exclude Ventura Compressor Station Modernization costs				
2020 Total	-766	-2,291	0	-3,057	-6.2
2021	0	-8	0	-8	0.0
Explanation:	To add material costs (6215567 and 6215568) that were misclassified as indirect.				
2021	-1,183	-10,520	0	-11,703	-9.2
Explanation:	One-sided adjustment to exclude Ventura Compressor Station Modernization costs				
2021 Total	-1,183	-10,528	0	-11,711	-9.2

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 003350**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN
 Workpaper Detail: 003350.001 - RAMP Blythe Compressor Station Modernization - Plant 2
 In-Service Date: 10/31/2022

Description:

Blythe Compressor Station Modernization - Plant 2: Remaining closeout work on Units 11, 12, 14, and 15; Construction activities at Unit 13; All construction and procurement activities associated with station integration.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		1,598	0	0
Non-Labor		27,752	0	0
NSE		0	0	0
	Total	29,350	0	0
FTE		9.7	0.0	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN
 Workpaper Detail: 003350.001 - RAMP Blythe Compressor Station Modernization - Plant 2

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C23-T1

RAMP Line Item Name: Blythe Compressor Station Modernization

Tranche(s): Tranche1: Transmission - Facilities

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	14,871	29,350	0	0	29,350	0	0

Cost Estimate Changes from RAMP:

This project did not have a forecast in the RAMP filing since the project was planned to be completed in 2021. The project in-service date shifted from 2021 to 2022 and the forecasts have been updated accordingly.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 Percentage of Project Completed	13.50	27.00	0.00	0.00	27.00	0.00	0.00

Work Unit Changes from RAMP:

This project did not have a forecast in the RAMP filing since the project was planned to be completed in 2021. The project in-service date shifted from 2021 to 2022 and the forecasts have been updated accordingly.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:

An RSE is not calculated for this activity.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN
 Workpaper Detail: 003350.002 - RAMP Blythe Compressor Station Modernization - Plant 4 Close Out
 In-Service Date: 06/30/2023
 Description:

Blythe Compressor Station Modernization - Plant 4 close out activities include the completion of: 1) performance testing of commissioned compressors and generators; 2) operator training for newly installed equipment and control systems; 3) incorporating construction as-built comments into SoCalGas documents; 4) collecting manufacturer and vendor data books and incorporating it into SoCalGas documents; 5) execution of warranty contracts; 6) remaining close out documentation activities to archive the project

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		641	141	0
Non-Labor		9,013	229	0
NSE		0	0	0
	Total	9,654	370	0
FTE		4.3	0.7	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00335.0
 Category: K. COMPRESSOR STATION MODERNIZATION
 Category-Sub: 1. COMPRESSOR STATION MODERNIZATION
 Workpaper Group: 003350 - GT COMPRESSOR STATIONS ADDITIONS/REPLACEMENTS QUALITY/ECONOMIC DRIVEN
 Workpaper Detail: 003350.002 - RAMP Blythe Compressor Station Modernization - Plant 4 Close Out

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-1 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C23-T1

RAMP Line Item Name: Blythe Compressor Station Modernization

Tranche(s): Tranche1: Transmission - Facilities

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	38,154	9,654	370	0	10,024	0	0

Cost Estimate Changes from RAMP:

This project did not have a forecast in the RAMP filing since the project close out activities were originally planned to be completed in 2021. Due to a shift in close out activities from 2021 to 2022, the forecasts have been updated accordingly.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 Percentage of Project Completed	14.00	4.00	0.00	0.00	4.00	0.00	0.00

Work Unit Changes from RAMP:

This project did not have a forecast in the RAMP filing since the project close out activities were originally planned to be completed in 2021. Due to a shift in close out activities from 2021 to 2022, the forecasts have been updated accordingly.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:

An RSE is not calculated for this activity.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Category: L. CONTROL CENTER MODERNIZATION
 Workpaper: 004050

Summary for Category: L. CONTROL CENTER MODERNIZATION

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	143	683	944	1,464
Non-Labor	491	1,355	1,664	2,282
NSE	0	0	0	0
Total	634	2,038	2,608	3,746
FTE	1.7	7.0	9.0	15.0

004050 GOCC (Gas Ops Control Center) Transmission Project

Labor	143	683	944	1,464
Non-Labor	491	1,355	1,664	2,282
NSE	0	0	0	0
Total	634	2,038	2,608	3,746
FTE	1.7	7.0	9.0	15.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
004050 - GOCC (Gas Ops Control Center) Transmission Project

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00405.0
 Category: L. CONTROL CENTER MODERNIZATION
 Category-Sub: 1. CONTROL CENTER MODERNIZATION
 Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project

Summary of Results (Constant 2021 \$ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Labor	Zero-Based	0	79	1	35	143	683	944	1,464
Non-Labor	Zero-Based	0	618	20	20	491	1,355	1,664	2,282
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	697	21	55	634	2,038	2,608	3,746
FTE	Zero-Based	0.0	0.6	0.0	0.4	1.7	7.0	9.0	15.0

Business Purpose:

The purpose of the Control Center Modernization (CCM) project is to construct a new modernized Gas Control facility which will include advanced technology and be sized to accommodate the expanding workforce needed to monitor, maintain, and respond to data transmitted by the newly deployed field assets and incidents on a continuous 24/7 basis. The costs detailed in this section are related to the field assets that will be deployed on the SoCalGas transmission system, specifically the optical pipeline monitoring (OPM) stations and high consequence area (HCA) methane sensors. These assets will provide additional insight to Gas Control on the overall health of the gas transmission system. Once a pipeline right-of-way has been outfitted with a fiber line, OPM stations will help Gas Control identify a potential leak or when ground intrusion or movement has occurred. The HCA Methane Sensors will enhance the safety of the SoCalGas system by detecting methane leaks on gas transmission pipelines that are near high-occupancy areas and pose evacuation challenges.

Physical Description:

The CCM project will be responsible for installing three OPM stations and 140 HCA methane sensors on transmission pipelines through the TY 2024.

Project Justification:

SoCalGas has developed, tested, and will deploy HCA methane sensors and OPM stations that will help identify leaks, ground intrusion, and ground subsidence on transmission pipelines. These activities are a continuation of activities presented in the 2019 GRC Decision.

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
Witness: Rick H. Chiapa
Budget Code: 00405.0
Category: L. CONTROL CENTER MODERNIZATION
Category-Sub: 1. CONTROL CENTER MODERNIZATION
Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project

Forecast Methodology:

Labor - Zero-Based

The forecast method developed for this cost category is zero-based methodology. CCM project staffing commenced in 2020 and to date the CCM project continues to mobilize as project activities are being scoped, designed, built, tested, and deployed. The zero-based methodology is most appropriate because the CCM project does not have adequate historical costs to accurately reflect full deployment labor costs that will be seen in 2022, 2023, and 2024. For OPM stations, the forecast uses a per unit cost multiplied by the annual number of targeted OPM stations and includes annual project management labor. Labor numbers were analyzed from completed OPM pilot installations which gave insight into costs for deploying the stations. The labor forecast consists of costs for internal resources for project management, planning, configuration, and commissioning. For HCA Methane sensors, the forecast uses a per unit cost multiplied by the annual number of targeted HCA methane sensors and includes per site project management costs. Labor numbers were analyzed from recent pilot site installations which gave insight into deployment costs. The labor forecast consists of costs for internal resources for project management, planning, permitting, site acquisition, and configuration.

Non-Labor - Zero-Based

The forecast method developed for this cost category is zero-based methodology. CCM project staffing commenced in 2020 and to date the CCM project continues to mobilize as project activities are being scoped, designed, built, tested, and deployed. The zero-based methodology is most appropriate because the CCM project does not have adequate historical costs to accurately reflect full deployment non-labor costs that will be seen in 2022, 2023, and 2024. For OPM stations, the forecast uses a per unit cost multiplied by the annual number of targeted OPM stations. Non-labor numbers were analyzed from completed OPM pilot installations which gave insight into costs for deploying the stations. The non-labor forecast consists of costs for external resources and contractor services for commissioning support, engineering, mechanical and electrical construction, environmental, survey, monitoring equipment, and mounting racks. For HCA Methane Sensors, the forecast uses a per unit cost multiplied by the annual number of targeted HCA methane sensors and includes per site project management costs. Labor and non-labor numbers were analyzed from recent pilot site installations which gave insight into deployment costs. The non-labor forecast consists of costs for external resources and contractor services for installation, unit purchases, communication devices, and vendor development.

NSE - Zero-Based

None.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00405.0
 Category: L. CONTROL CENTER MODERNIZATION
 Category-Sub: 1. CONTROL CENTER MODERNIZATION
 Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project

Summary of Adjustments to Forecast

In 2021 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Zero-Based	683	944	1,464	0	0	0	683	944	1,464
Non-Labor	Zero-Based	1,355	1,664	2,282	0	0	0	1,355	1,664	2,282
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		2,038	2,608	3,746	0	0	0	2,038	2,608	3,746
FTE	Zero-Based	7.0	9.0	15.0	0.0	0.0	0.0	7.0	9.0	15.0

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	0	0	0	0	0.0
Explanation: CCM Forecast					
2022 Total	0	0	0	0	0.0
2023	0	0	0	0	0.0
Explanation: CCM Forecast					
2023 Total	0	0	0	0	0.0
2024	0	0	0	0	0.0
Explanation: CCM Forecast					
2024 Total	0	0	0	0	0.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00405.0
 Category: L. CONTROL CENTER MODERNIZATION
 Category-Sub: 1. CONTROL CENTER MODERNIZATION
 Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	53	1	26	27
Non-Labor	0	488	16	18	222
NSE	0	0	0	0	0
Total	0	542	17	43	249
FTE	0.0	0.5	0.0	0.3	0.3
Adjustments (Nominal \$)**					
Labor	0	0	0	0	95
Non-Labor	0	0	0	0	269
NSE	0	0	0	0	0
Total	0	0	0	0	364
FTE	0.0	0.0	0.0	0.0	1.1
Recorded-Adjusted (Nominal \$)					
Labor	0	53	1	26	122
Non-Labor	0	488	16	18	491
NSE	0	0	0	0	0
Total	0	542	17	43	613
FTE	0.0	0.5	0.0	0.3	1.4
Vacation & Sick (Nominal \$)					
Labor	0	9	0	4	21
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	9	0	4	21
FTE	0.0	0.1	0.0	0.1	0.3
Escalation to 2021\$					
Labor	0	17	0	5	0
Non-Labor	0	130	3	3	0
NSE	0	0	0	0	0
Total	0	146	4	7	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	79	1	35	143
Non-Labor	0	618	20	20	491
NSE	0	0	0	0	0
Total	0	697	21	55	634
FTE	0.0	0.6	0.0	0.4	1.7

* After company-wide exclusions of Non-GRC costs

** Refer to "Detail of Adjustments to Recorded" page for line item adjustments

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00405.0
 Category: L. CONTROL CENTER MODERNIZATION
 Category-Sub: 1. CONTROL CENTER MODERNIZATION
 Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	95
Non-Labor	0	0	0	0	269
NSE	0	0	0	0	0
Total	0	0	0	0	364
FTE	0.0	0.0	0.0	0.0	1.1

Detail of Adjustments to Recorded in Nominal \$:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2017 Total	0	0	0	0	0.0
2018	0	0	0	0	0.0
Explanation:	Adjusting from \$0 to the actual historical amount.				
2018 Total	0	0	0	0	0.0
2019	0	0	0	0	0.0
Explanation:	Adjusting from \$0 to the actual historical amount.				
2019 Total	0	0	0	0	0.0
2020	0	0	0	0	0.0
Explanation:	Adjusting from \$0 to the actual historical amount.				
2020 Total	0	0	0	0	0.0
2021	95	269	0	364	1.1
Explanation:	Adjustment being made due to an internal order being mapped to the incorrect budget code.				
2021 Total	95	269	0	364	1.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 004050**

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00405.0
 Category: L. CONTROL CENTER MODERNIZATION
 Category-Sub: 1. CONTROL CENTER MODERNIZATION
 Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project
 Workpaper Detail: 004050.001 - 00405.000 - CCM Transmission RAMP C37
 In-Service Date: Not Applicable

Description:

These costs are associated with the Control Center Modernization (CCM) project's new field pipeline monitoring technologies which will be installed along existing high consequence area (HCA) and evacuation challenged areas as well as along new and replaced transmission pipelines. These field monitoring assets are more specifically the Optical Pipeline Monitoring (OPM) stations and the HCA methane sensors.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		683	944	1,464
Non-Labor		1,355	1,664	2,282
NSE		0	0	0
	Total	2,038	2,608	3,746
FTE		7.0	9.0	15.0

Note: Totals may include rounding differences.

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS TRANSMISSION
 Witness: Rick H. Chiapa
 Budget Code: 00405.0
 Category: L. CONTROL CENTER MODERNIZATION
 Category-Sub: 1. CONTROL CENTER MODERNIZATION
 Workpaper Group: 004050 - GOCC (Gas Ops Control Center) Transmission Project
 Workpaper Detail: 004050.001 - 00405.000 - CCM Transmission RAMP C37

RAMP Item # 1

RAMP Activity

RAMP Chapter: SCG-Risk-2 Excavation Damage (Dig-In) on the Gas System

RAMP Line Item ID: C37

RAMP Line Item Name: Pipeline Monitoring Technologies

Tranche(s): Tranche1: N/A

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Costs (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2022 to 2024 Forecast (2021 \$)	2022 to 2024 RAMP Range (2020 Incurred \$)	
						Low	High
Tranche 1 Cost Estimate	0	2,038	2,608	3,746	8,392	7,133	9,651

Cost Estimate Changes from RAMP:

None.

GRC Work Unit/Activity Level Estimates

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2022 to 2024 Forecast Activities	2022 to 2024 RAMP Range Activities	
						Low	High
Tranche 1 OPM Monitoring Stations/Methane Sensors	0.00	21.00	41.00	81.00	143.00	122.00	164.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:

No RSE assigned due to no historical work or benchmark being performed before this GRC cycle.

Supplemental Workpapers for Workpaper Group 004050

Southern California Gas Company
 2024 GRC - REVISED
 Capital Workpapers

CCM Summary - Transmission Witness Area

Capital Forecast

	2022	2023	2024	Total
Labor	\$ 683,237.40	\$ 943,474.80	\$ 1,463,949.60	\$ 3,090,661.80
Non-Labor	\$ 1,354,914.90	\$ 1,664,079.81	\$ 2,282,409.62	\$ 5,301,404.33
Total	\$ 2,038,152.30	\$ 2,607,554.61	\$ 3,746,359.22	\$ 8,392,066.13
FTE	7	9	15	

**\$100k used for Transmission FTE calculation*

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

CCM - Optical Pipeline Monitoring (OPM) Stations					
Unit Count - OPM Stations					
	2022	2023	2024	2022-2024 Total	2025-2028 Total
OPM (Fiber) Sites	1	1	1	3	8
Cost Per Station Breakdown & Assumptions					
Cost Per Site: Project Management & Field Engineering					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Project Mgmt, procedure development, engineering oversight	\$	323,000.00
				Total Unit Cost	\$ 323,000.00
Cost Per Station					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resource	Project Planning/Admin/PE/CM	\$	85,000.00
Capital	Labor	Internal Resource	Commissioning/Configuration	\$	15,000.00
Capital	Non-Labor	External Resources	Contractor Commissioning	\$	56,000.00
Capital	Non-Labor	External Resources	Warranty/Maintenance	\$	192,450.00
Capital	Non-Labor	External Resources	Engineering Design	\$	55,000.00
Capital	Non-Labor	External Resources	Documentation & Close-out	\$	20,000.00
Capital	Non-Labor	External Resources	Mechanical construction	\$	100,000.00
Capital	Non-Labor	External Resources	Electrical construction	\$	90,000.00
Capital	Non-Labor	External Resources	Inspections	\$	24,000.00
Capital	Non-Labor	External Resources	Survey	\$	7,000.00
Capital	Non-Labor	External Resources	Environmental	\$	10,000.00
Capital	Non-Labor	Materials	Monitoring Equipment	\$	411,800.00
Capital	Non-Labor	Materials	Enclosure/Mounting/Other Materials	\$	60,000.00
Capital	Non-Labor	Materials	Communication Device	\$	4,500.00
Capital	Non-Labor	Permits	Permitting/Site Acquisition	\$	15,000.00
				Total Unit Cost	\$ 1,145,750.00
Capital Forecast					
		2022	2023	2024	Total
Labor	Internal Labor	\$ 423,000.00	\$ 423,000.00	\$ 423,000.00	\$ 1,269,000.00
	External Resources	\$ 554,450.00	\$ 554,450.00	\$ 554,450.00	\$ 1,663,350.00
Non-Labor	Materials & Misc Expenses	\$ 476,300.00	\$ 476,300.00	\$ 476,300.00	\$ 1,428,900.00
	Permit	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 45,000.00
Total	Labor - SCG	\$ 423,000.00	\$ 423,000.00	\$ 423,000.00	\$ 1,269,000.00
	Non-Labor - SCG	\$ 1,045,750.00	\$ 1,045,750.00	\$ 1,045,750.00	\$ 3,137,250.00
	TOTAL Capital	\$ 1,468,750.00	\$ 1,468,750.00	\$ 1,468,750.00	\$ 4,406,250.00
Assumptions					
<p>External Resources estimates are based off other sample quotes from other projects</p> <p>Some costs are benchmarked off other work being done at SoCalGas</p> <p>Assuming inspections are \$8k/week for a 3 week period</p> <p>Environmental cost was benchmarked off averages from other similarly scoped projects</p> <p>Some costs will vary based on site location</p> <p>Some costs will vary based on site location</p> <p>Cost of the communication device is based off actuals</p>					

Southern California Gas Company
2024 GRC - REVISED
Capital Workpapers

CCM - High Consequence Area (HCA) Methane Sensors					
Unit Count - HCA Methane Sensors					
	2022	2023	2024	2022-2024 Total	2025-2028 Total
HCA Methane Sensors	20	40	80	140	1540
Cost Per Sensor Breakdown & Assumptions					
Cost Per Sensor: Project Management & Field Engineering					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Project Mgmt, sensor evaluation, product QA	\$	11,870.00
Capital	Non-Labor	External Resources	Emission strategy development, contract installation, sensor evaluation	\$	7,702.00
Capital	Non-Labor	Materials & Expenses	Materials and Misc.	\$	535.00
Total Unit Cost				\$	20,107.00
Cost Per Sensor					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
CAPITAL	LABOR	INTERNAL RESOURCES	PROJECT PLANNING/ADMIN	\$	330.50
CAPITAL	LABOR	INTERNAL RESOURCES	PERMIT & SITE ACQUISITION	\$	625.00
CAPITAL	LABOR	INTERNAL RESOURCES	HOST SYSTEM CONFIRMATION	\$	131.18
CAPITAL	LABOR	INTERNAL RESOURCES	QA/TEST/CONFIGURE	\$	55.19
CAPITAL	NON-LABOR	EXTERNAL RESOURCES	LABOR CONTRACT OTHER	\$	1,000.00
CAPITAL	NON-LABOR	EXTERNAL RESOURCES	CONTRACT INSTALL/CONFIGURE	\$	220.65
CAPITAL	NON-LABOR	MATERIALS & EXPENSES	PERMIT & SITE ACQUISITION	\$	625.00
CAPITAL	NON-LABOR	MATERIALS & EXPENSES	UNIT PURCHASE	\$	3,012.50
CAPITAL	NON-LABOR	MATERIALS & EXPENSES	OTHER MATERIALS/ENCLOSURING/MOUNTING	\$	1,625.00
CAPITAL	NON-LABOR	MATERIALS & EXPENSES	COMMUNICATION DEVICE	\$	500.00
CAPITAL	NON-LABOR	MATERIALS & EXPENSES	VENDOR DEVELOPMENT - ACLARA PRODUCT	\$	238.10
Total Unit Cost				\$	8,363.12
Capital Forecast					
		2022	2023	2024	Total
Labor	Internal Labor	\$ 260,237	\$ 520,475	\$ 1,040,950	\$ 1,821,662
	External Resources	\$ 178,453	\$ 356,906	\$ 713,812	\$ 1,249,171
Non-Labor	Materials & Expenses	\$ 130,712	\$ 261,424	\$ 522,848	\$ 914,983
	External Labor - SCG	\$ 160,608	\$ 321,215	\$ 642,431	\$ 1,124,254
	Construction Services - SCG	\$ 117,641	\$ 235,281	\$ 470,563	\$ 823,485
Total	Labor - SCG	\$ 260,237	\$ 520,475	\$ 1,040,950	\$ 1,821,662
	Non-Labor - SCG	\$ 309,165	\$ 618,330	\$ 1,236,660	\$ 2,164,154
	Total Capital	\$ 569,402	\$ 1,138,805	\$ 2,277,609	\$ 3,985,816
Assumptions					
<p>The CCM HCA Methane Sensor project was proposed as part of enhanced pipeline safety to enhance the monitoring and response along its high-pressure pipeline routes in high consequence areas. The program is intended to leverage emerging technologies to monitor and manage information gathered from sensors placed along these routes. The project costs include the continual evaluation and testing of the latest point sensor technologies to support wide scale deployment throughout the system.</p> <p>This information will allow Gas Control to complement existing pipeline safety efforts to identify abnormal operating conditions or emergency conditions more quickly for increased system integrity and remediation response in support of enhanced public and employee safety.</p> <p>The CCM HCA Methane Sensor project will not replace any existing activities intended for pipeline safety. This includes but is not limited to leak surveys, aerial monitoring, and vehicle monitoring. Permits will be needed for all installation sites as they will be installed in public right of way (PROW).</p> <p>Does not include any electrical or lease agreement costs for co-locations.</p> <p>Additional efforts will be needed for the hardware, software, and system customization and enhancement of the Advanced Meter (SCG) network to accommodate the additional field assets. Interim private LTE communication solutions will be leveraged for the initial deployment until the Advanced Meter (SCG) network is available.</p> <p>Assumes methane sensors will be wood pole or steel post mounted. Does not include costs related to Jurisdiction requests for customization (Ex. Concrete poles/posts, color matching, etc.). Installation assumes direct bury poles/posts (instead of concrete foundations).</p> <p>Does not include concrete excavation and repair.</p>					