

Application of SAN DIEGO GAS & ELECTRIC)
COMPANY for authority to update its gas and)
electric revenue requirement and base rates)
effective January 1, 2024 (U 902-M))

Application No. 22-05-016

Exhibit No.: (SDG&E-04-CWP-R)

REVISED CAPITAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF L. PATRICK KINSELLA
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

AUGUST 2022



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

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San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Overall Summary For Exhibit No. SDG&E-04-CWP-R

Area:	GAS DISTRIBUTION
Witness:	L. Patrick Kinsella

	In 2021 \$ (000)		
	Adjusted-Forecast		
	2022	2023	2024
A. New Business	19,658	13,042	9,928
B. System Minor Additions, Relocations, and Retirement	5,221	5,221	5,221
C. Gas Meters & Regulators	8,598	9,348	9,348
D. Gas System Reinforcement	529	529	529
E. Street & Highway Relocation	14,596	15,008	5,776
F. Tools & Equipment	5,006	4,006	3,936
G. Code Compliance	2,712	3,087	3,087
H. Leak Repair	11,935	12,973	14,010
I. Cathodic Protection Program	4,493	4,493	4,493
J. Cathodic Protection System Enhancements	1,996	1,996	1,996
K. System Reliability & Improvements	1,956	3,456	1,956
L. Underperforming Steel Replacement Program – Thread	7,000	7,000	7,000
M. Underperforming Steel Replacement Program – 1934-1	3,000	3,000	3,000
N. Underperforming Steel Replacement Program – Other	3,001	3,001	3,001
O. Early Vintage Program – Dresser Mechanical Couplin	2,000	2,000	2,000
P. Early Vintage Program – Oil Drip Piping Removal	1,500	1,500	1,500
Q. Early Vintage Program – Removal of Closed Valves b	1,500	1,500	1,500
R. Piping in Vaults Replacement Program	1,500	1,500	1,500
T. Control Center Modernization (CCM) Project	449	3,235	4,080
U. Curb Valve Replacement	1,000	1,750	1,750
V. CNG Station Upgrades	137	137	137
W. Local Engineering Pool	22,990	25,112	24,574
X. Gas Distribution OverHead Pool	5,342	5,695	5,893
Y. Gas Distribution Contract Administration Pool	6,466	6,803	6,584

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Overall Summary For Exhibit No. SDG&E-04-CWP-R

Total	132,585	135,392	122,799
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Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: A. New Business
Workpaper: 005000

Summary for Category: A. New Business

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	2,202	2,170	2,568	2,539
Non-Labor	6,411	17,488	10,474	7,389
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8,613	19,658	13,042	9,928
FTE	18.3	22.8	27.0	26.7

005000 New Business

Labor	2,202	2,170	2,568	2,539
Non-Labor	6,411	17,488	10,474	7,389
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8,613	19,658	13,042	9,928
FTE	18.3	22.8	27.0	26.7

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
005000 - New Business**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business

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	3,120	2,936	2,496	2,184	2,202	2,170	2,568	2,539
Non-Labor	Zero-Based	7,956	17,391	6,173	5,062	6,411	17,488	10,474	7,389
NSE	Zero-Based	0	0	0	0	0	0	0	0
	Total	11,075	20,326	8,669	7,246	8,613	19,658	13,042	9,928
FTE	Zero-Based	28.2	23.0	19.6	17.4	18.3	22.8	27.0	26.7

Business Purpose:

Expenditures within budget code 500 provide for changes and additions to the existing gas distribution system for the purpose of serving new gas customers.

Physical Description:

Budget code 500 covers the installation of gas mains and services, meter set assemblies (MSAs), regulator stations, and all associated equipment except the purchase of gas meters and service regulators, which are reflected in budget code 502. Cost includes main and service extensions into new residential, commercial, and industrial developments.

Project Justification:

This budget code provides the necessary capital to extend mains and services consistent with Gas Rules 2, 15 and 16. These additions support service for residential, commercial, and industrial customers, including identified single customers such as co-generation, Compressed Natural Gas (CNG), or concrete and asphalt plants where the gas distribution main must be extended.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00500.0
Category: A. New Business
Category-Sub: 1. New Business
Workpaper Group: 005000 - New Business

Forecast Methodology:

Labor - Zero-Based

A zero based forecast for BC 500-New business was developed based on the projected growth rate of new meter sets added to the gas distribution system. In general, the number of new meter set installations mirrors the level of housing and commercial growth. The projected number of new meter sets were obtained and forecasted funding was estimated by applying the three year historical average cost per meter set to the projected meter growth for each of the forecast years.

The collectable portion of this budget, or Contributions in Aid of Construction (CIAC) credit is an amount of money collected from the customer (usually for a large project) that is applied toward the cost of construction for services rendered and/or facilities installed. The collectable costs for a project vary from project to project. In order to forecast this collectable portion, a three year historical average ratio of direct CIAC credits to total direct capital construction was used to provide a forecast.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business

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	2,170	2,568	2,539	0	0	0	2,170	2,568	2,539
Non-Labor	Zero-Based	17,488	10,474	7,389	0	0	0	17,488	10,474	7,389
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		19,658	13,042	9,928	0	0	0	19,658	13,042	9,928
FTE	Zero-Based	22.8	27.0	26.7	0.0	0.0	0.0	22.8	27.0	26.7

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00500.0
Category: A. New Business
Category-Sub: 1. New Business
Workpaper Group: 005000 - New Business

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	2,027	2,015	1,808	1,663	1,913
Non-Labor	5,937	13,744	5,111	4,401	5,999
NSE	0	0	0	0	0
Total	7,964	15,759	6,919	6,063	7,912
FTE	16.9	11.0	9.3	7.9	7.4
Adjustments (Nominal \$)**					
Labor	0	0	0	0	1
Non-Labor	0	0	0	0	413
NSE	0	0	0	0	0
Total	0	0	0	0	414
FTE	7.3	8.7	7.6	7.0	8.3
Recorded-Adjusted (Nominal \$)					
Labor	2,027	2,015	1,808	1,663	1,914
Non-Labor	5,937	13,744	5,111	4,401	6,411
NSE	0	0	0	0	0
Total	7,964	15,759	6,919	6,063	8,325
FTE	24.2	19.7	16.9	14.9	15.7
Vacation & Sick (Nominal \$)					
Labor	301	305	259	236	288
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	301	305	259	236	288
FTE	4.0	3.3	2.7	2.5	2.6
Escalation to 2021\$					
Labor	792	616	429	285	0
Non-Labor	2,019	3,647	1,062	662	0
NSE	0	0	0	0	0
Total	2,811	4,262	1,491	947	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	3,120	2,936	2,496	2,184	2,202
Non-Labor	7,956	17,391	6,173	5,062	6,411
NSE	0	0	0	0	0
Total	11,075	20,326	8,669	7,246	8,613
FTE	28.2	23.0	19.6	17.4	18.3

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	1
Non-Labor	0	0	0	0	413
NSE	0	0	0	0	0
Total	0	0	0	0	414
FTE	7.3	8.7	7.6	7.0	8.3

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	0.001	0	0	0.001	4.3
Explanation:	One-sided adjustment to add the FTE related to Construction, Planning, & Design (CPD) orders that were inadvertently missing from the initial data load of historical costs				
2017	0.001	0	0	0.001	3.0
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.002	0	0	0.002	7.3
2018	0.001	0	0	0.001	4.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018	0.001	0	0	0.001	3.9
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.002	0	0	0.002	8.7
2019	0.001	0	0	0.001	4.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019	0.001	0	0	0.001	3.4
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.003	0	0	0.003	7.6
2020	0.001	0	0	0.001	4.1

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020	0.001	0	0	0.001	2.9
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.002	0	0	0.002	7.0
2021	0.001	0	0	0.001	4.3
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021	0.001	0	0	0.001	3.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021	1	413	0	414	0.1
Explanation:	Moving costs from 503 budget code to 500 budget code where these cost are being forecasted.				
2021 Total	1	413	0	414	8.3

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005000**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business
 Workpaper Detail: 005000.001 - New Business - Non Collectable Expenses
 In-Service Date: Not Applicable
 Description:

Non-collectable portion of BC 500 - New Business (Non-Collectable RAMP in WP5000.003)

Forecast In 2021 \$(000)			
Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor	1,738	2,136	2,107
Non-Labor	5,443	6,467	6,392
NSE	0	0	0
Total	<u>7,181</u>	<u>8,603</u>	<u>8,499</u>
FTE	18.0	22.2	21.9

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business
 Workpaper Detail: 005000.002 - New Business - Collectable Portion - CIAC Credits
 In-Service Date: Not Applicable

Description:

CIAC Credits - The Collectable portion of BC 500 - New Business

Forecast In 2021 \$(000)			
Years	2022	2023	2024
Labor	0	0	0
Non-Labor	735	870	860
NSE	0	0	0
Total	735	870	860
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business
 Workpaper Detail: 005000.003 - RAMP: SDG&E-Risk-9, C19, Field and Public Safety
 In-Service Date: Not Applicable

Description:

RAMP Non-Collectable: Field and Public Safety includes the purging of customer houelines. Purge orders are issued to promote customer safety by confirming customer owned gas houelines are safe and leak-free and odorant is readily detectable. Purge orders usually involve large gas meter installations and customer owned gas systems for multifamily residential, commercial, and industrial customers. These jobs usually relate to new construction projects where Gas Distribution Pipeline Operations sets a large gas meter and the Company schedules a date for Customer Service Field to test and purge the houeline.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		432	432	432
Non-Labor		137	137	137
NSE		0	0	0
	Total	569	569	569
FTE		4.8	4.8	4.8

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business
 Workpaper Detail: 005000.003 - RAMP: SDG&E-Risk-9, C19, Field and Public Safety

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C19
 RAMP Line Item Name: Field and Public Safety
 Tranche(s): Tranche1: Meter & Beyond the Meter

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	569	569	569	569	1,707	1,623	1,962

Cost Estimate Changes from RAMP:
N/A

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 Orders	6,784.00	6,784.00	6,784.00	6,784.00	20,352.00	19,334.00	23,405.00

Work Unit Changes from RAMP:
N/A

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.030	0.200

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00500.0
 Category: A. New Business
 Category-Sub: 1. New Business
 Workpaper Group: 005000 - New Business
 Workpaper Detail: 005000.004 - Collectable - Stuart Mesa & Cristianitos
 In-Service Date: 12/31/2023

Description:

Collectable for Stuart Mesa & Cristianitos (Camp Pendleton).

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		0	0	0
Non-Labor		11,173	3,000	0
NSE		0	0	0
	Total	11,173	3,000	0
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 005000

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-001

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella
Supplemental Workpaper Calculations for New Business Construction Forecast

New Business Construction Workpaper (500)

Dollars shown are in \$000 of 2021 dollars and include vacation and sick.

	[H]	[A]	[B]	[F]	[D]	[E] [B/D]	[I] [A/H]
	Historical New Meter Growth	Adjusted Recorded Historical Total	Adjusted Recorded Historical Labor	Adjusted Recorded Historical Non- Labor	Historical FTEs	Historical Three Year Average Labor / FTE	Historical Three Year Average Cost Per Meter Set
2019	6,398	\$ 8,669	\$ 2,496	\$ 6,173	20	\$ 127.36	
2020	6,740	\$ 7,246	\$ 2,184	\$ 5,062	17	\$ 125.52	
2021	4,789	\$ 8,613	\$ 2,202	\$ 6,411	18	\$ 120.31	
Total	17,927	\$ 24,528	\$ 6,882	\$ 17,646	55	\$ 124.45	\$1.37

	[C] [B/A]	[G] [F/A]
	Labor	Non-Labor
Three Year Historical Average Ratio:	28%	72%

	[J]	[K] [IxJ]	[L] [CxK]	[M] [GxK]	[N]
	Gas Customer New Meter Growth ¹	Forecast (Includes CIAC)	Labor Forecast	Non-Labor Forecast	Forecasted FTEs
2022	6,201	\$ 8,484	\$ 2,381	\$ 6,104	22.8
2023	7,340	\$ 10,043	\$ 2,818	\$ 7,225	27.0
2024	7,256	\$ 9,928	\$ 2,786	\$ 7,142	26.7

Notes:

¹ Please refer to the work papers of Mr. Scott Wilder, Exhibit SDG&E-17-WP, for the details on the calculation of gas customer new meter growth.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-002
San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella
Supplemental Workpaper Calculations for CIAC and New Business Forecast

New Business CIAC History Calculation ¹

(\$000 in 2021\$)

	Ln	2019	2020	2021	Three Year Avg
CIAC Direct Credits Applied	1	(\$618)	(\$685)	(\$809)	
CIAC Indirects Credits Applied	2	(\$240)	(\$267)	(\$315)	
Total CIAC Credits Applied to Non-Labor ¹	3	(\$859)	(\$952)	(\$1,124)	
<u>Historical New Business:</u>					
Recorded Historical Labor (w/ V&S and escalation)	4	\$2,496	\$2,184	\$2,202	
Recorded Historical Non-Labor (w/escalation)	5	\$6,173	\$5,062	\$6,411	
Total Recorded Historical (w/ V&S and escalation) (4+5)	6	\$8,669	\$7,246	\$8,613	
Historical Direct Credit Ratio (1/6)	7	-7.13%	-9.46%	-9.40%	-8.66%

Total New Business Forecast

(\$000 in 2021\$)

	Ln	2022	2023	2024
Forecasted Labor ² w/ V&S	8	\$2,381	\$2,818	\$2,786
Forecasted Non-Labor ²	9	\$6,104	\$7,225	\$7,142
Forecast w/V&S ²	10	\$8,484	\$10,043	\$9,928
Collectible: Large Development Projects	11	\$11,173	\$3,000	\$0
Total Forecast w/ V&S including Large Developments	12	\$19,658	\$13,043	\$9,928
Forecasted Collectible (CIAC) (10 x avg 7)	13	(\$735)	(\$870)	(\$860)
Total Collectible (CIAC) including Large Development Projects (=11-13)	14	\$11,908	\$3,870	\$860
Forecasted Non-Collectible (=12-14)	15	\$7,749	\$9,173	\$9,068

Notes:

¹ For purpose of the CIAC calculation, Stuart Mesa and Cristianitos (large developments) have been excluded in order to not distort CIAC New Business forecast

² See SDG&E-LPK-CAP-SUP-001

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: B. System Minor Additions, Relocations, and Retirement
 Workpaper: 005010

Summary for Category: B. System Minor Additions, Relocations, and Retirement

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	728	992	992	992
Non-Labor	4,684	4,229	4,229	4,229
NSE	0	0	0	0
Total	5,412	5,221	5,221	5,221
FTE	7.4	9.4	9.4	9.4

005010 Systems Minor Additions, Relocations and Retirements

Labor	728	992	992	992
Non-Labor	4,684	4,229	4,229	4,229
NSE	0	0	0	0
Total	5,412	5,221	5,221	5,221
FTE	7.4	9.4	9.4	9.4

Note: Totals may include rounding differences.

Beginning of Workpaper Group
005010 - Systems Minor Additions, Relocations and Retirements

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retiremen
 Category-Sub: 1. System Minor Additions, Relocations, and Retiremen
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirements

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	1,347	1,008	1,264	985	728	992	992	992
Non-Labor	3-YR Average	10,279	3,664	2,988	5,016	4,684	4,229	4,229	4,229
NSE	3-YR Average	0	0	0	0	0	0	0	0
	Total	11,626	4,672	4,252	6,001	5,412	5,221	5,221	5,221
FTE	3-YR Average	11.4	8.7	11.2	9.7	7.4	9.4	9.4	9.4

Business Purpose:

Expenses in budget code 501 provide for minor gas distribution main and service additions, retirements and relocations. These expenditures are required to maintain the continued integrity of SDG&E's gas distribution system.

Physical Description:

Projects in this budget allow for minor gas distribution main and service additions, retirements, and relocations due to customer requests or as required by SDG&E to support system operation and integrity, retirement of gas mains and services, and expenses for associated street repairs.

Project Justification:

These projects are necessary for new or continued gas service; to address the needs of property owners requesting SDG&E to move its facilities from their property; or to meet the Company's need for minor additions, facility relocations or abandonments to address conflicts, integrity or reliability concerns. In addition, this budget provides funds to assist in managing encroachment infractions for Gas Distribution pipelines within the Company's pipeline Rights of Way in compliance with GO 112-F §143.5. or otherwise affecting the operation and maintenance of Company's pipeline facilities . The work must be performed to ensure the integrity of the gas system that serves SDG&E customers.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00501.0
Category: B. System Minor Additions, Relocations, and Retirement
Category-Sub: 1. System Minor Additions, Relocations, and Retirement
Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement

Forecast Methodology:

Labor - 3-YR Average

In developing the forecast, historical expenditures from 2019 through 2021 were evaluated. Due to the wide range of activities recorded in this workgroup, as well as the cost fluctuations from year to year, a three year (2019 through 2021) average was selected as the best method to forecast future costs. In developing the base forecast for this budget code, labor and non-labor components were evaluated separately. The labor component contains the historical Company labor charges associated with construction projects within this budget category. A three year average (2019 through 2021) was utilized as the forecasting methodology for this component. Within non-labor, there are two distinct cost components: (1) construction materials and services and (2) Contribution in Aid of Construction (CIAC) credits. The first non-labor component, construction materials and services, was forecasted using a three year average (2019 through 2021). The second component, CIAC credits, was also calculated based on a three year average (2019 through 2021). As previously discussed in the New Business budget code, the collectable cost portion of a project (or CIAC credits), is an amount of money collected from the customer that is applied toward the cost of construction for services rendered and/or facilities installed.

Non-Labor - 3-YR Average

See description above which applies to both Labor and Non-Labor.

NSE - 3-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retiremen
 Category-Sub: 1. System Minor Additions, Relocations, and Retiremen
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirements

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	992	992	992	0	0	0	992	992	992
Non-Labor	3-YR Average	4,229	4,229	4,229	0	0	0	4,229	4,229	4,229
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		5,221	5,221	5,221	0	0	0	5,221	5,221	5,221
FTE	3-YR Average	9.4	9.4	9.4	0.0	0.0	0.0	9.4	9.4	9.4

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00501.0
Category: B. System Minor Additions, Relocations, and Retirement
Category-Sub: 1. System Minor Additions, Relocations, and Retirement
Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	875	692	916	750	633
Non-Labor	7,670	2,896	2,474	4,360	4,684
NSE	0	0	0	0	0
Total	8,545	3,588	3,390	5,110	5,317
FTE	3.1	0.7	0.0	0.0	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	6.7	6.8	9.6	8.3	6.3
Recorded-Adjusted (Nominal \$)					
Labor	875	692	916	750	633
Non-Labor	7,670	2,896	2,474	4,360	4,684
NSE	0	0	0	0	0
Total	8,545	3,588	3,390	5,110	5,317
FTE	9.8	7.5	9.6	8.3	6.3
Vacation & Sick (Nominal \$)					
Labor	130	105	131	106	95
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	130	105	131	106	95
FTE	1.6	1.2	1.6	1.4	1.1
Escalation to 2021\$					
Labor	342	211	217	129	0
Non-Labor	2,609	768	514	656	0
NSE	0	0	0	0	0
Total	2,951	980	731	784	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	1,347	1,008	1,264	985	728
Non-Labor	10,279	3,664	2,988	5,016	4,684
NSE	0	0	0	0	0
Total	11,626	4,672	4,252	6,001	5,412
FTE	11.4	8.7	11.2	9.7	7.4

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retirement
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement

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	6.7	6.8	9.6	8.3	6.3

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	0.001	0	0	0.001	2.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017	0.001	0	0	0.001	3.9
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.002	0	0	0.002	6.7
2018	0.001	0	0	0.001	3.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018	0.001	0	0	0.001	3.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.002	0	0	0.002	6.8
2019	0.001	0	0	0.001	6.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019	0.001	0	0	0.001	2.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.002	0	0	0.002	9.6
2020	0.001	0	0	0.001	4.3
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020	0.001	0	0	0.001	3.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retirement
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020	0.001	0	0	0.001	1.0
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.003	0	0	0.003	8.3
2021	0.001	0	0	0.001	1.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021	0.001	0	0	0.001	3.0
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021	0.001	0	0	0.001	1.7
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.003	0	0	0.003	6.3

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005010**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retirement
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement
 Workpaper Detail: 005010.001 - Non-Collectable
 In-Service Date: Not Applicable
 Description:

This is the non-collectable portion of BC 501 - System Minor Additions, Relocations, and Retirement.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		220	250	992
Non-Labor		112	383	2,932
NSE		0	0	0
	Total	332	633	3,924
FTE		2.3	2.6	9.4

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retirement
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement
 Workpaper Detail: 005010.002 - CIAC Credits-collectable
 In-Service Date: Not Applicable

Description:

CIAC Credits - The Collectable portion of BC 501 - System Minor Additions, Relocations, and Retirement.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		0	0	0
Non-Labor		1,297	1,297	1,297
NSE		0	0	0
	Total	1,297	1,297	1,297
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retirement
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement
 Workpaper Detail: 005010.003 - RAMP: SDG&E-Risk-3, M04 Adobe Falls Relocation Project
 In-Service Date: 12/31/2023

Description:

RAMP Non-Collectable Adobe Falls Relocation Project

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		192	162	0
Non-Labor		2,000	1,729	0
NSE		0	0	0
	Total	2,192	1,891	0
FTE		1.9	1.6	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retire
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirements
 Workpaper Detail: 005010.003 - RAMP: SDG&E-Risk-3, M04 Adobe Falls Relocation Project

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-3 Incident Related to the High Pressure System (Excluding Dig-in)
 RAMP Line Item ID: M04
 RAMP Line Item Name: Adobe Falls Relocation Project
 Tranche(s): Tranche1: HP Supply Line

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	2,192	1,891	0	4,083	1,900	2,300

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	1.00	1.00

Work Unit Changes from RAMP:

N/A

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	167.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retirement
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirement
 Workpaper Detail: 005010.004 - RAMP: SDG&E-Risk-9 Incremental (New), M04 Mitigate MSAs Inside Buildings & Alcoves
 In-Service Date: 12/31/2023

Description:

RAMP Non-Collectable: Mitigate Meter Set Assemblies (MSAs) Inside Buildings & Alcoves

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		580	580	0
Non-Labor		820	820	0
NSE		0	0	0
	Total	1,400	1,400	0
FTE		5.2	5.2	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00501.0
 Category: B. System Minor Additions, Relocations, and Retire
 Category-Sub: 1. System Minor Additions, Relocations, and Retirement
 Workpaper Group: 005010 - Systems Minor Additions, Relocations and Retirements
 Workpaper Detail: 005010.004 - RAMP: SDG&E-Risk-9 Incremental (New), M04 Mitigate MSAs Inside Buildings & Alcoves

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: M04 (New)
 RAMP Line Item Name: RAMP Incremental: MSAs inside Buildings & Alcoves
 Tranche(s): Tranche1: Meter & Beyond the Meter

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	1,400	1,400	0	2,800	0	0

Cost Estimate Changes from RAMP:
 New RAMP mitigation. No RAMP range for dollars.

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 Meters	0.00	136.00	136.00	0.00	272.00	0.00	0.00

Work Unit Changes from RAMP:
 New RAMP mitigation. No RAMP range for units.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 005010

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-003

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella
Supplemental Workpaper Calculations for System Minor Adds, Relocations and Retirements Forecast

System Minor Adds, Relocations and Retirements (Budget Code 501, 512, & 20572) History

(\$000 in 2021\$)

	Ln	2019	2020	2021	Three Year Avg
CIAC Direct Credits Applied	1	(1,109)	(537)	(2,246)	
CIAC Indirect Credits Applied	2	(295)	(143)	(597)	
Total CIAC Credits Applied to Non-Labor (1+2)	3	(1404)	(679)	(2842)	
<u>Historical New Business:</u>					
Recorded Historical Labor (w/ V&S and escalation)	4	\$1,264	\$985	\$728	
Recorded Historical Non-Labor (w/escalation)	5	\$2,988	\$5,016	\$4,684	
Total Recorded Historical (w/ V&S and escalation) (4+5)	6	\$4,252	\$6,001	\$5,412	
Historical Direct Credit Ratio (1/6)	7	-26.08%	-8.95%	-41.49%	-24.84%

Forecasted Capital

(\$000 in 2021\$)

	Ln	2022	2023	2024
Forecasted Labor w/ V&S	8	\$992	\$992	\$992
Forecasted Non-labor	9	\$4,229	\$4,229	\$4,229
Total Forecast w/V&S	10	\$5,221	\$5,221	\$5,221
Forecasted Collectible (CIAC) (10x avg 7)	11	(\$1,297)	(\$1,297)	(\$1,297)
Forecasted Non-Collectible (=10+11)	12	\$3,924	\$3,924	\$3,924

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: C. Gas Meters & Regulators
 Workpaper: 005020

Summary for Category: C. Gas Meters & Regulators

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	0	0	0	0
Non-Labor	8,375	8,598	9,348	9,348
NSE	0	0	0	0
Total	8,375	8,598	9,348	9,348
FTE	0.0	0.0	0.0	0.0

005020 Meter and Regulator Materials

Labor	0	0	0	0
Non-Labor	8,375	8,598	9,348	9,348
NSE	0	0	0	0
Total	8,375	8,598	9,348	9,348
FTE	0.0	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
005020 - Meter and Regulator Materials

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00502.0
 Category: C. Gas Meters & Regulators
 Category-Sub: 1. Gas Meters & Regulators
 Workpaper Group: 005020 - Meter and Regulator Materials

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	0	0	0	0	0	0	
Non-Labor	Zero-Based	3,700	5,129	6,866	14,319	8,375	8,598	9,348	
NSE	Zero-Based	0	0	0	0	0	0	0	
Total		3,700	5,129	6,866	14,319	8,375	8,598	9,348	
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Business Purpose:

Budget code 502 provides funding for the purchase of new domestic, commercial and industrial gas meters and regulators used in establishing service to new customers, and also for replacement of meters and regulators that have reached the end of their useful life or are removed as part of the Gas Meter Performance Control Program.

Physical Description:

This effort involves the purchasing of new domestic, commercial and industrial gas meters and regulators. These meters are required to provide gas service to new customers as well as replace aging meters for some existing customers. Existing residential gas meter measurement accuracy is monitored by sampling meters in the service territory under the Gas Meter Performance Control Program. Meters are grouped into "families" for monitoring purposes. As these family groups age, they may fall outside prescribed accuracy limits and must be replaced. Budget code 502 provides funds to replace family groups of meters that do not meet strict accuracy guidelines. In addition to the replacements of meters, this budget code includes the costs of additional regulators to replace obsolete regulators.

Project Justification:

Meters are purchased under this budget code to provide accurate gas measurement for new customers and to replace aging meters whose measurement performance is falling outside prescribed accuracy limits. Regulators purchased in this budget code support new business customers or regulators replaced for age or programmatic replacements.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00502.0
Category: C. Gas Meters & Regulators
Category-Sub: 1. Gas Meters & Regulators
Workpaper Group: 005020 - Meter and Regulator Materials

Forecast Methodology:

Labor - Zero-Based

N/A

Non-Labor - Zero-Based

Forecasted expenditures for meters and regulators are based on forecasted quantities for new business, the trending of usage for routine replacements, as well as planned meter replacements and therefore is a zero based forecast. The forecasted usage is multiplied by the current meter and regulator contract prices to estimate future expenditures. The details on the calculation of new meter set installations are provided in the workpapers for Exhibit SDG&E-17-CWP. Small meter routine replacements and planned meter replacements are based on the information covered in Exhibit SDG&E-17-CWP

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00502.0
 Category: C. Gas Meters & Regulators
 Category-Sub: 1. Gas Meters & Regulators
 Workpaper Group: 005020 - Meter and Regulator Materials

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	0	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	8,598	9,348	9,348	0	0	0	8,598	9,348	9,348
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		8,598	9,348	9,348	0	0	0	8,598	9,348	9,348
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00502.0
Category: C. Gas Meters & Regulators
Category-Sub: 1. Gas Meters & Regulators
Workpaper Group: 005020 - Meter and Regulator Materials

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	2,761	4,054	5,685	12,448	8,375
NSE	0	0	0	0	0
Total	2,761	4,054	5,685	12,448	8,375
FTE	0.0	0.0	0.0	0.0	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	0	0	0	0	0
Non-Labor	2,761	4,054	5,685	12,448	8,375
NSE	0	0	0	0	0
Total	2,761	4,054	5,685	12,448	8,375
FTE	0.0	0.0	0.0	0.0	0.0
Vacation & Sick (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
Escalation to 2021\$					
Labor	0	0	0	0	0
Non-Labor	939	1,076	1,181	1,872	0
NSE	0	0	0	0	0
Total	939	1,076	1,181	1,872	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	0	0	0
Non-Labor	3,700	5,129	6,866	14,319	8,375
NSE	0	0	0	0	0
Total	3,700	5,129	6,866	14,319	8,375
FTE	0.0	0.0	0.0	0.0	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.

San Diego Gas & Electric Company
 2024 GRC - REVISED
 Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00502.0
 Category: C. Gas Meters & Regulators
 Category-Sub: 1. Gas Meters & Regulators
 Workpaper Group: 005020 - Meter and Regulator Materials

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 005020**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00502.0
 Category: C. Gas Meters & Regulators
 Category-Sub: 1. Gas Meters & Regulators
 Workpaper Group: 005020 - Meter and Regulator Materials
 Workpaper Detail: 005020.001 - Base Forecast Meter and Regulators
 In-Service Date: Not Applicable

Description:

Budget code 502 provides funding for the purchase of new domestic, commercial and industrial gas meters and regulators used in establishing service to new customers, and also for replacement of meters and regulators that have reached the end of their useful life or removed as part of the Gas Meter Performance Control Program.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		0	0	0
Non-Labor		8,598	9,348	9,348
NSE		0	0	0
	Total	8,598	9,348	9,348
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 005020

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-004

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for Meter and Regulator Calculations

Assumptions:

Meter and regulator costs are calculated from forecasted quantities of meters, regulators, and smart meter modules multiplied by supplier contract costs, freight charges, and applicable sales tax. Contract pricing is considered confidential information pursuant to PUC Code Section 583 & General Order 66-C. Contract pricing is available with appropriate confidentiality measures.

Capital Cost Type	Adjusted - Recorded History (Thousands in 2021\$)					Forecast (Thousands in 2021\$)		
	2017	2018	2019	2020	2021	2022	2023	2024
Labor	0	0	0	0	0	0	0	0
Non-Labor	3,233	4,482	5,999	12,566	8,375	8,598	9,348	9,348
Total	3,233	4,482	5,999	12,566	8,375	8,598	9,348	9,348

The quantities of meters, regulators and smart meter modules utilized in developing the forecast are listed below:

Forecasted Rotary Meter Quantities			
Meter Size	2022	2023	2024
8C175 LCTR	0	40	40
8C15 TQM	0	150	150
11C175 LCTR	3	420	420
15C175 LCTR	0	320	320
2M175 LCTR/TC	0	5	5
2M175 LCTR	0	200	200
3M175 LCTR	0	200	200
5M175 LCTR	0	100	100
7M175 CTR/TC	0	35	35
7M1480 CTR/CD	0	1	1
7M CTR/CD	0	3	3
11M175 CTR/TC	66	50	50
11M175 CTR/CD	60	50	50
16M175 CTR/TC	72	72	72
16M175 CTR/CD	16	16	16
23M CTR/CD	0	3	3
38M CTR/CD	0	3	3
56M CTR/CD	3	1	1
102M-B3 CD	0	0	0
Total	220	1,669	1,669

Forecasted Smart Meter Module Quantity			
Meter Component	2022	2023	2024
Module	40,550	47,998	47,449

Forecasted Regulator Quantities			
Type	2022	2023	2024
3/4" 1813C & Itron B42	18,360	18,360	18,360
CABINET REG	20	20	20
LARGE REG	1,072	1,072	1,072
Total	19,452	19,452	19,452

Forecasted Diaphragm Meter Quantities			
Meter Size	2022	2023	2024
AC-250 Curb	50	50	50
AL-425 Curb	75	75	75
AC-630 Curb	35	35	35
METRIS 250	41,360	41,360	41,360
400A	4,530	4,530	4,530
AC-630	1,992	1,992	1,992
AC-800	252	252	252
Total	48,294	48,294	48,294

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: D. Gas System Reinforcement
Workpaper: 005030

Summary for Category: D. Gas System Reinforcement

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	1	7	7	7
Non-Labor	1,609	522	522	522
NSE	0	0	0	0
Total	1,610	529	529	529
FTE	-0.1	0.5	0.5	0.5

005030 Pressure Betterment

Labor	1	7	7	7
Non-Labor	1,609	522	522	522
NSE	0	0	0	0
Total	1,610	529	529	529
FTE	-0.1	0.5	0.5	0.5

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
005030 - Pressure Betterment**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00503.0
 Category: D. Gas System Reinforcement
 Category-Sub: 1. Gas System Reinforcement
 Workpaper Group: 005030 - Pressure Betterment

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

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Years									
Labor	4-YR Average	27	19	1	2	1	7	7	7
Non-Labor	4-YR Average	1,085	164	14	302	1,609	522	522	522
NSE	4-YR Average	0	0	0	0	0	0	0	0
Total		1,112	182	16	304	1,610	529	529	529
FTE	4-YR Average	0.1	0.1	0.0	0.0	-0.1	0.5	0.5	0.5

Business Purpose:

Expenditures within budget code 503 provide for gas distribution system reinforcement projects required to maintain gas service to core customers. This work category addresses critical areas of the distribution pipeline network that are most susceptible to pressure drops to alleviate the potential risk of loss of service to customers.

Physical Description:

This budget code provides Capital expenditures for gas distribution system reinforcement or pressure betterment projects required to maintain gas service to all customers. System reinforcement projects are designed to remedy low-pressure problems and/or improve reliability to large single feed areas, to meet load growth. These projects typically involve installing new mains and/or regulator stations, extending high pressure mains or upgrading existing mains to increase delivery pressure.

Project Justification:

SDG&E determines system reinforcement needs by constantly monitoring system growth, anticipating changes to loads on the existing system, observing pressures within the existing system and modeling the system response to predicted growth and system reinforcements. As new loads are added, such as new residential, commercial and industrial developments, the existing gas system infrastructure may not have sufficient capacity to maintain pressure to adequately serve all customers. As gas demand loads are anticipated to be added, an analysis of the existing system is performed using a gas flow model to predict the system response. If there is not sufficient capacity to serve the added load, individual projects are identified to determine the most cost-effective system reinforcement options which will allow the system to meet the projected demand.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00503.0
Category: D. Gas System Reinforcement
Category-Sub: 1. Gas System Reinforcement
Workpaper Group: 005030 - Pressure Betterment

Forecast Methodology:

Labor - 4-YR Average

SDG&E's gas infrastructure is a large dynamic system of pipelines and pipeline connections, with continual changes in customer load and construction activity. As a result of these fluctuations, a trend or base year forecasting methodology is not appropriate. The four year average methodology was selected to forecast the base requirement for labor and non-labor as it captures the yearly variation in system pressure betterment requirements which align with the constantly changing new construction development schedules, economic conditions, and large customer system impacts.

Non-Labor - 4-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 4-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00503.0
 Category: D. Gas System Reinforcement
 Category-Sub: 1. Gas System Reinforcement
 Workpaper Group: 005030 - Pressure Betterment

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	4-YR Average	6	6	6	1	1	1	7	7	7
Non-Labor	4-YR Average	522	522	522	0	0	0	522	522	522
NSE	4-YR Average	0	0	0	0	0	0	0	0	0
Total		528	528	528	1	1	1	529	529	529
FTE	4-YR Average	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00503.0
Category: D. Gas System Reinforcement
Category-Sub: 1. Gas System Reinforcement
Workpaper Group: 005030 - Pressure Betterment

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	17	13	1	2	3
Non-Labor	809	130	12	262	2,021
NSE	0	0	0	0	0
Total	827	142	13	264	2,024
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$)**					
Labor	0	0	0	0	-1
Non-Labor	0	0	0	0	-413
NSE	0	0	0	0	0
Total	0	0	0	0	-414
FTE	0.1	0.1	0.0	0.0	-0.1
Recorded-Adjusted (Nominal \$)					
Labor	17	13	1	2	1
Non-Labor	809	130	12	262	1,609
NSE	0	0	0	0	0
Total	827	142	13	264	1,610
FTE	0.1	0.1	0.0	0.0	-0.1
Vacation & Sick (Nominal \$)					
Labor	3	2	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	3	2	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Escalation to 2021\$					
Labor	7	4	0	0	0
Non-Labor	275	34	2	39	0
NSE	0	0	0	0	0
Total	282	38	3	40	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	27	19	1	2	1
Non-Labor	1,085	164	14	302	1,609
NSE	0	0	0	0	0
Total	1,112	182	16	304	1,610
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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00503.0
 Category: D. Gas System Reinforcement
 Category-Sub: 1. Gas System Reinforcement
 Workpaper Group: 005030 - Pressure Betterment

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	-1
Non-Labor	0	0	0	0	-413
NSE	0	0	0	0	0
Total	0	0	0	0	-414
FTE	0.1	0.1	0.0	0.0	-0.1

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	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.001	0	0	0.001	0.1
2018	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	0	0	0.001	0.1
2019 Total	0	0	0	0	0.0
2020 Total	0	0	0	0	0.0
2021	-1	-413	0	-414	-0.1
Explanation:	Moving costs from 503 budget code to 500 budget code where these cost are being forecasted.				
2021 Total	-1	-413	0	-414	-0.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005030**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00503.0
 Category: D. Gas System Reinforcement
 Category-Sub: 1. Gas System Reinforcement
 Workpaper Group: 005030 - Pressure Betterment
 Workpaper Detail: 005030.001 - Base Forecast - Pressure Betterment
 In-Service Date: Not Applicable

Description:

Expenditures within budget code 503 provide for gas distribution system reinforcement projects required to maintain gas service to core customers. This work category addresses critical areas of the distribution pipeline network that are most susceptible to pressure drops to alleviate the potential risk of loss of service to customers.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		7	7	7
Non-Labor		522	522	522
NSE		0	0	0
	Total	529	529	529
FTE		0.5	0.5	0.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: E. Street & Highway Relocation
Workpaper: 005050

Summary for Category: E. Street & Highway Relocation

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	271	236	236	236
Non-Labor	6,463	14,360	14,772	5,540
NSE	0	0	0	0
Total	6,734	14,596	15,008	5,776
FTE	2.7	2.1	2.1	2.1

005050 Pipe Relocations - Franchise and Freeway

Labor	271	236	236	236
Non-Labor	6,463	14,360	14,772	5,540
NSE	0	0	0	0
Total	6,734	14,596	15,008	5,776
FTE	2.7	2.1	2.1	2.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
005050 - Pipe Relocations - Franchise and Freeway

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00505.0
 Category: E. Street & Highway Relocation
 Category-Sub: 1. Street & Highway Relocation
 Workpaper Group: 005050 - Pipe Relocations - Franchise and Freeway

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	510	266	216	220	271	236	236	236
Non-Labor	3-YR Average	21,077	7,723	5,417	4,740	6,463	14,360	14,772	5,540
NSE	3-YR Average	0	0	0	0	0	0	0	0
	Total	21,586	7,989	5,632	4,960	6,734	14,596	15,008	5,776
FTE	3-YR Average	3.5	2.3	1.5	2.2	2.7	2.1	2.1	2.1

Business Purpose:

Budget code 505 provides funding for the required relocation of existing gas facilities when necessitated by conflict with the installation of public improvements.

Physical Description:

This project covers the relocation of existing gas distribution facilities when necessitated by public improvements as required by the company's franchise agreements to clear municipal or other improvements. Generally, the work involves a change in alignment and/or grade of existing gas pipelines and associated facilities driven by local and state agency requirements. Work may involve main replacement in a new location in lieu of lowering, raising or changing lateral position of the existing main due to municipal improvements such as street and highway, railroad, and water and sewer line construction.

Project Justification:

This project covers the relocation of existing gas distribution facilities in compliance with State Highway and Municipal Franchise Agreements. All pipeline work must be performed in compliance with CPUC General Order 112-F.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00505.0
Category: E. Street & Highway Relocation
Category-Sub: 1. Street & Highway Relocation
Workpaper Group: 005050 - Pipe Relocations - Franchise and Freeway

Forecast Methodology:

Labor - 3-YR Average

The frequency and amount of franchise and freeway pipeline relocation projects is driven by outside agencies. A review of historical expenditures from 2019 through 2021 revealed no clear trend. The three year average forecasting methodology was selected for labor and non-labor as it best represents the fluctuation of the expense of relocating existing gas facilities when in conflict with public improvements by local or state agencies over the years.

Non-Labor - 3-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 3-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00505.0
 Category: E. Street & Highway Relocation
 Category-Sub: 1. Street & Highway Relocation
 Workpaper Group: 005050 - Pipe Relocations - Franchise and 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	3-YR Average	236	236	236	0	0	0	236	236	236
Non-Labor	3-YR Average	5,540	5,540	5,540	8,820	9,232	0	14,360	14,772	5,540
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		5,776	5,776	5,776	8,820	9,232	0	14,596	15,008	5,776
FTE	3-YR Average	2.1	2.1	2.1	0.0	0.0	0.0	2.1	2.1	2.1

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	0	8,820	0	8,820	0.0
Explanation: Collectable - City of San Diego Pure Water Project					
2022 Total	0	8,820	0	8,820	0.0
2023	0	9,232	0	9,232	0.0
Explanation: Collectable - City of San Diego Pure Water Project					
2023 Total	0	9,232	0	9,232	0.0
2024 Total	0	0	0	0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00505.0
 Category: E. Street & Highway Relocation
 Category-Sub: 1. Street & Highway Relocation
 Workpaper Group: 005050 - Pipe Relocations - Franchise and Freeway

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	331	182	156	168	236
Non-Labor	15,727	6,104	4,485	4,120	6,463
NSE	0	0	0	0	0
Total	16,059	6,286	4,641	4,288	6,699
FTE	2.4	1.0	0.1	0.0	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	0.6	0.9	1.2	1.9	2.3
Recorded-Adjusted (Nominal \$)					
Labor	331	182	156	168	236
Non-Labor	15,727	6,104	4,485	4,120	6,463
NSE	0	0	0	0	0
Total	16,059	6,286	4,641	4,288	6,699
FTE	3.0	1.9	1.3	1.9	2.3
Vacation & Sick (Nominal \$)					
Labor	49	28	22	24	35
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	49	28	22	24	35
FTE	0.5	0.4	0.2	0.3	0.4
Escalation to 2021\$					
Labor	129	56	37	29	0
Non-Labor	5,349	1,620	932	619	0
NSE	0	0	0	0	0
Total	5,479	1,675	969	648	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	510	266	216	220	271
Non-Labor	21,077	7,723	5,417	4,740	6,463
NSE	0	0	0	0	0
Total	21,586	7,989	5,632	4,960	6,734
FTE	3.5	2.3	1.5	2.2	2.7

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00505.0
 Category: E. Street & Highway Relocation
 Category-Sub: 1. Street & Highway Relocation
 Workpaper Group: 005050 - Pipe Relocations - Franchise and 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	0.6	0.9	1.2	1.9	2.3

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	0.001	0	0	0.001	0.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.001	0	0	0.001	0.6
2018	0.001	0	0	0.001	0.9
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	0	0	0.001	0.9
2019	0.001	0	0	0.001	1.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	0	0	0.001	1.2
2020	0.001	0	0	0.001	1.9
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	1.9
2021	0.001	0	0	0.001	2.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.002	0	0	0.002	2.3

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005050**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00505.0
 Category: E. Street & Highway Relocation
 Category-Sub: 1. Street & Highway Relocation
 Workpaper Group: 005050 - Pipe Relocations - Franchise and Freeway
 Workpaper Detail: 005050.001 - Base Forecast - Pipe Relocation - Franchise and Freeway
 In-Service Date: Not Applicable
 Description:

Franchise and Freeway Relocations - Non-Collectable

Forecast In 2021 \$(000)			
Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor	236	236	236
Non-Labor	5,540	5,540	5,540
NSE	0	0	0
Total	<u>5,776</u>	<u>5,776</u>	<u>5,776</u>
FTE	2.1	2.1	2.1

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2024 GRC - REVISED
 Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00505.0
 Category: E. Street & Highway Relocation
 Category-Sub: 1. Street & Highway Relocation
 Workpaper Group: 005050 - Pipe Relocations - Franchise and Freeway
 Workpaper Detail: 005050.002 - Collectable - Pure Water
 In-Service Date: 12/31/2023

Description:

City of San Diego's Pure Water project. Collectable

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		0	0	0
Non-Labor		8,820	9,232	0
NSE		0	0	0
	Total	<u>8,820</u>	<u>9,232</u>	<u>0</u>
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: F. Tools & Equipment
Workpaper: 005060

Summary for Category: F. Tools & Equipment

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	39	73	73	73
Non-Labor	3,620	4,933	3,933	3,863
NSE	0	0	0	0
Total	3,659	5,006	4,006	3,936
FTE	0.2	0.5	0.5	0.5

005060 Tools and Equipment

Labor	39	73	73	73
Non-Labor	3,620	4,933	3,933	3,863
NSE	0	0	0	0
Total	3,659	5,006	4,006	3,936
FTE	0.2	0.5	0.5	0.5

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
005060 - Tools and Equipment**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment

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	169	112	21	26	39	73	73	73
Non-Labor	5-YR Average	3,289	1,232	3,496	7,328	3,620	4,933	3,933	3,863
NSE	5-YR Average	0	0	0	0	0	0	0	0
Total		3,457	1,343	3,517	7,354	3,660	5,006	4,006	3,936
FTE	5-YR Average	1.0	0.8	0.1	0.2	0.2	0.5	0.5	0.5

Business Purpose:

Budget code 506 provides funds for new tools and equipment required by field personnel in order to safely and efficiently install, operate and maintain the gas distribution system as well as maintenance of the inventory of training equipment at the "Skills City" training facility at SDG&E where gas operations activities are simulated.

Physical Description:

Funds in this budget code are used to acquire various tools and equipment used by gas crews, personnel in the field, construction operations, shop operations, and identical start-of-the-art tools used in training. Tools and equipment are replaced due to failure, age, advances in technology, and to improve employee safety and ergonomics. These tools and equipment are necessary to economically and safely install, operate and maintain the gas distribution system.

Project Justification:

Tools age and/or become obsolete due to new technology, new construction methods are introduced requiring new tools, and new safety requirements. It is necessary to equip SDG&E's employees and trainers with safe and reliable tools and equipment. Funding in this budget code over the forecasted period from 2022 through TY2024, includes tools and equipment necessary to safely perform gas distribution work.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00506.0
Category: F. Tools & Equipment
Category-Sub: 1. Tools & Equipment
Workpaper Group: 005060 - Tools and Equipment

Forecast Methodology:

Labor - 5-YR Average

The need for new tools and equipment is influenced by the age and condition of the tools, technology, ergonomics, and changes in company gas standards or procedures. Due to the total tool expense fluctuations from 2017 to 2021, a trend was not apparent. The five year average methodology was selected for labor and non-labor as it captures the variation in yearly tool and equipment needs.

Non-Labor - 5-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 5-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment

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	73	73	73	0	0	0	73	73	73
Non-Labor	5-YR Average	3,793	3,793	3,793	1,140	140	70	4,933	3,933	3,863
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		3,866	3,866	3,866	1,140	140	70	5,006	4,006	3,936
FTE	5-YR Average	0.5	0.5	0.5	0.0	0.0	0.0	0.5	0.5	0.5

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	0	140	0	140	0.0
Explanation:	Develop Virtual Training for Operations Training - Incremental costs to develop Virtual Training – Virtual training will be established to provide enhanced training for dangerous and difficult to replicate real-life scenarios that can be safely simulated within Virtual Reality applications. This training will charge 70% to capital. There is no labor expense. Non-labor expense is estimated to be \$200K X 0.70 = \$140K each year for 2022 and 2023. The non-labor expense in TY2024 is estimated to be \$100K X 0.70=\$70K.				
2022	0	1,000	0	1,000	0.0
Explanation:	Kleiss Emergency Pipeline Plugging Equipment - Incremental expense for ten Kleiss Emergency Pipeline Plugging devices, two for each District Operating Center to provide-the ability to more quickly deploy and plug off damaged and leaking steel supply pipelines. This will be accomplished within a reduced scope rather than rely on locating and closing systemwide valves for control. This capability will enable reduced damage control and repair times, which improves safety, reduces methane emissions, and reduces the outage time for customers. The total non-labor cost is estimated to be 10 X \$100K = \$1,000K in 2022 only. There is no labor expense.				
2022 Total	0	1,140	0	1,140	0.0
2023	0	140	0	140	0.0
Explanation:	Develop Virtual Training for Operations Training - Incremental costs to develop Virtual Training – Virtual training will be established to provide enhanced training for dangerous and difficult to replicate real-life scenarios that can be safely simulated within Virtual Reality applications. This training will charge 70% to capital. There is no labor expense. Non-labor expense is estimated to be \$200K X 0.70 = \$140K each year for 2022 and 2023. The non-labor expense in TY2024 is estimated to be \$100K X 0.70=\$70K.				
2023 Total	0	140	0	140	0.0
2024	0	70	0	70	0.0
Explanation:	Develop Virtual Training for Operations Training - Incremental costs to develop Virtual Training – Virtual training will be established to provide enhanced training for dangerous and difficult to replicate real-life scenarios that can be safely simulated within Virtual Reality applications. This training will charge 70% to capital. There is no labor expense. Non-labor expense is estimated to be \$200K X 0.70 = \$140K each year for 2022 and 2023. The non-labor expense in TY2024 is estimated to be \$100K X 0.70=\$70K.				
2024 Total	0	70	0	70	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00506.0
Category: F. Tools & Equipment
Category-Sub: 1. Tools & Equipment
Workpaper Group: 005060 - Tools and Equipment

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	109	77	15	20	34
Non-Labor	2,454	973	2,895	6,370	3,620
NSE	0	0	0	0	0
Total	2,564	1,050	2,910	6,390	3,655
FTE	0.9	0.7	0.1	0.2	0.2
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	109	77	15	20	34
Non-Labor	2,454	973	2,895	6,370	3,620
NSE	0	0	0	0	0
Total	2,564	1,050	2,910	6,390	3,655
FTE	0.9	0.7	0.1	0.2	0.2
Vacation & Sick (Nominal \$)					
Labor	16	12	2	3	5
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	16	12	2	3	5
FTE	0.1	0.1	0.0	0.0	0.0
Escalation to 2021\$					
Labor	43	23	4	3	0
Non-Labor	835	258	601	958	0
NSE	0	0	0	0	0
Total	877	282	605	961	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	169	112	21	26	39
Non-Labor	3,289	1,232	3,496	7,328	3,620
NSE	0	0	0	0	0
Total	3,457	1,343	3,517	7,354	3,660
FTE	1.0	0.8	0.1	0.2	0.2

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment

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 005060**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.001 - Tools and Equipment - Base Forecast

In-Service Date: Not Applicable

Description:

Tools and Equipment Base Forecast

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		73	73	73
Non-Labor		3,128	3,128	3,128
NSE		0	0	0
	Total	<u>3,201</u>	<u>3,201</u>	<u>3,201</u>
FTE		0.5	0.5	0.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.002 - RAMP: SDG&E-Risk-7, C13 Locating Equipment
 In-Service Date: Not Applicable

Description:

Locating Equipment

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		0	0	0
Non-Labor		225	225	225
NSE		0	0	0
Total		225	225	225
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.002 - RAMP: SDG&E-Risk-7, C13 Locating Equipment

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-7 Excavation Damage (Dig-In) on the Gas System

RAMP Line Item ID: C13

RAMP Line Item Name: Locating Equipment

Tranche(s): Tranche1: MP

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	411	225	225	225	675	602	769

Cost Estimate Changes from RAMP:

N/A

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 MDTs	0.00	46.00	46.00	46.00	138.00	121.00	155.00

Work Unit Changes from RAMP:

N/A

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	181.000	179.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.003 - RAMP: SDG&E-Risk-9, C14 - Human Factors Mitigation - OpQual Training & Certification
 In-Service Date: Not Applicable

Description:

Tools and Equipment to support Operator Qualification Training and Certification

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		0	0	0
Non-Labor		440	440	440
NSE		0	0	0
	Total	440	440	440
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.003 - RAMP: SDG&E-Risk-9, C14 - Human Factors Mitigation - OpQual Training & Certification

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C14
 RAMP Line Item Name: Human Factor Mitigations - OpQual Training & Cert
 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	579	440	440	440	1,320	1,255	1,520

Cost Estimate Changes from RAMP:
N/A

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 EE/contractors trained/certified	746.00	658.00	704.00	749.00	2,111.00	2,005.00	2,428.00

Work Unit Changes from RAMP:
N/A

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.500	0.400

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.004 - Develop Virtual Training
 In-Service Date: 12/31/2024

Description:

Develop Virtual Training - Established to provide enhanced training for activities that involve higher risk and difficult to replicate real-life scenarios.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		0	0	0
Non-Labor		140	140	70
NSE		0	0	0
	Total	140	140	70
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00506.0
 Category: F. Tools & Equipment
 Category-Sub: 1. Tools & Equipment
 Workpaper Group: 005060 - Tools and Equipment
 Workpaper Detail: 005060.005 - Kleiss Emergency Pipeline Plugging Equipment (Balloon Stopper)
 In-Service Date: Not Applicable
 Description:

Kleiss Emergency Pipeline Plugging Equipment (Balloon Stopper) for pipe flow control

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		0	0	0
Non-Labor		1,000	0	0
NSE		0	0	0
	Total	1,000	0	0
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: G. Code Compliance
 Workpaper: 005070

Summary for Category: G. Code Compliance

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	978	865	890	890
Non-Labor	2,124	1,847	2,197	2,197
NSE	0	0	0	0
Total	3,102	2,712	3,087	3,087
FTE	7.9	6.5	6.8	6.8

005070 Code Compliance

Labor	978	865	890	890
Non-Labor	2,124	1,847	2,197	2,197
NSE	0	0	0	0
Total	3,102	2,712	3,087	3,087
FTE	7.9	6.5	6.8	6.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
005070 - Code Compliance**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00507.0
 Category: G. Code Compliance
 Category-Sub: 1. Code Compliance
 Workpaper Group: 005070 - Code Compliance

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

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
	Years								
Labor	4-YR Average	264	552	747	1,024	978	865	890	890
Non-Labor	4-YR Average	2,299	2,343	887	1,996	2,124	1,847	2,197	2,197
NSE	4-YR Average	0	0	0	0	0	0	0	0
	Total	2,563	2,895	1,634	3,019	3,102	2,712	3,087	3,087
FTE	4-YR Average	1.5	3.7	5.1	7.7	7.9	6.5	6.8	6.8

Business Purpose:

Capital expenditures in budget code 507 are used to keep SDG&E's gas distribution system in compliance with State and Federal regulations for natural gas pipelines.

Physical Description:

Four principle ongoing compliance issues involving the gas distribution system currently require funding under this budget code: 1. Labor for the Regulator Replacement Program for pre-1966 American Meter Type K-Regulators to be removed in compliance with 49 Code of Federal Regulations (CFR) § 192.197(b); 2. Labor and materials necessary for the installation of barricades to protect MSAs from vehicular traffic in compliance with 49 CFR § 192.353(a); 3. Labor and materials necessary for the installation of distribution system electronic pressure monitoring devices (EPM) in compliance with 49 CFR § 192.741(a)-(b); and 4. Installation of isolation valves necessary for the safe operation of the gas distribution system in compliance with 49 CFR § 192.181.

Project Justification:

The work completed under this budget code is required to ensure compliance with State and Federal regulations for natural gas pipelines.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00507.0
Category: G. Code Compliance
Category-Sub: 1. Code Compliance
Workpaper Group: 005070 - Code Compliance

Forecast Methodology:

Labor - 4-YR Average

Charges to this budget code tend to fluctuate due to the unpredictability of the number of existing meter set locations identified for barrier post installations, curtailment zone optimization due to system growth, routine pre-1966 K-Regulator removal rates, and electronic pressure monitor (EPM) coverage optimization. A review of the historical data revealed the variability of these multiple types of work, which consist of different labor rates, tools and materials, completed under this budget code. Therefore, a four year average forecast methodology was selected to estimate the base requirement for labor and non-labor as it captures the variation in these expenses.

Non-Labor - 4-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 4-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00507.0
 Category: G. Code Compliance
 Category-Sub: 1. Code Compliance
 Workpaper Group: 005070 - Code Compliance

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	4-YR Average	825	825	825	40	65	65	865	890	890
Non-Labor	4-YR Average	1,837	1,837	1,837	10	360	360	1,847	2,197	2,197
NSE	4-YR Average	0	0	0	0	0	0	0	0	0
Total		2,662	2,662	2,662	50	425	425	2,712	3,087	3,087
FTE	4-YR Average	6.1	6.1	6.1	0.4	0.7	0.7	6.5	6.8	6.8

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	40	10	0	50	0.4
Explanation:	EPM and Pressure Corrector Replacements - Incremental expenses are required for EPM and Electronic Correctors (EC) Replacements. EPMs are a vital safety component to provide notification of over/under-pressurization events. Both of these instruments are aging, require considerable maintenance, and should encompass newer technology. Replacement of these instruments begin in 2022 for ECs and in 2023 for EPMs. Labor combined is 80 ECs X \$500=\$40K in 2022 and (80 ECs X \$500 +50EPMs X \$500)= \$65K each year in 2023 and TY2024. For non-Labor expense, ECs have been purchased, requiring only EPM purchase of (100 EPMs X \$3500 =\$350K + Other \$10K) = \$360K each year total for 2023 and TY2024.				
2022 Total	40	10	0	50	0.4
2023	65	360	0	425	0.7
Explanation:	EPM and Pressure Corrector Replacements - Incremental expenses are required for EPM and Electronic Correctors (EC) Replacements. EPMs are a vital safety component to provide notification of over/under-pressurization events. Both of these instruments are aging, require considerable maintenance, and should encompass newer technology. Replacement of these instruments begin in 2022 for ECs and in 2023 for EPMs. Labor combined is 80 ECs X \$500=\$40K in 2022 and (80 ECs X \$500 +50EPMs X \$500)= \$65K each year in 2023 and TY2024. For non-Labor expense, ECs have been purchased, requiring only EPM purchase of (100 EPMs X \$3500 =\$350K + Other \$10K) = \$360K each year total for 2023 and TY2024.				
2023 Total	65	360	0	425	0.7
2024	65	360	0	425	0.7
Explanation:	EPM and Pressure Corrector Replacements - Incremental expenses are required for EPM and Electronic Correctors (EC) Replacements. EPMs are a vital safety component to provide notification of over/under-pressurization events. Both of these instruments are aging, require considerable maintenance, and should encompass newer technology. Replacement of these instruments begin in 2022 for ECs and in 2023 for EPMs. Labor combined is 80 ECs X \$500=\$40K in 2022 and (80 ECs X \$500 +50EPMs X \$500)= \$65K each year in 2023 and TY2024. For non-Labor expense, ECs have been purchased, requiring only EPM purchase of (100 EPMs X \$3500 =\$350K + Other \$10K) = \$360K each year total for 2023 and TY2024.				
2024 Total	65	360	0	425	0.7

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00507.0
Category: G. Code Compliance
Category-Sub: 1. Code Compliance
Workpaper Group: 005070 - Code Compliance

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	171	379	541	780	850
Non-Labor	1,716	1,852	735	1,735	2,124
NSE	0	0	0	0	0
Total	1,887	2,231	1,276	2,514	2,974
FTE	0.7	0.4	0.0	0.1	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	0.6	2.7	4.4	6.5	6.7
Recorded-Adjusted (Nominal \$)					
Labor	171	379	541	780	850
Non-Labor	1,716	1,852	735	1,735	2,124
NSE	0	0	0	0	0
Total	1,887	2,231	1,276	2,514	2,974
FTE	1.3	3.1	4.4	6.6	6.8
Vacation & Sick (Nominal \$)					
Labor	25	57	77	111	128
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	25	57	77	111	128
FTE	0.2	0.6	0.7	1.1	1.1
Escalation to 2021\$					
Labor	67	116	129	134	0
Non-Labor	584	491	153	261	0
NSE	0	0	0	0	0
Total	650	607	281	395	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	264	552	747	1,024	978
Non-Labor	2,299	2,343	887	1,996	2,124
NSE	0	0	0	0	0
Total	2,563	2,895	1,634	3,019	3,102
FTE	1.5	3.7	5.1	7.7	7.9

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00507.0
 Category: G. Code Compliance
 Category-Sub: 1. Code Compliance
 Workpaper Group: 005070 - Code Compliance

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	0.6	2.7	4.4	6.5	6.7

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	0.001	0	0	0.001	0.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.001	0	0	0.001	0.6
2018	0.001	0	0	0.001	2.7
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	0	0	0.001	2.7
2019	0.001	0	0	0.001	4.4
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	0	0	0.001	4.4
2020	0.001	0	0	0.001	6.5
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	6.5
2021	0.001	0	0	0.001	6.7
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	6.7

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005070**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00507.0
 Category: G. Code Compliance
 Category-Sub: 1. Code Compliance
 Workpaper Group: 005070 - Code Compliance
 Workpaper Detail: 005070.001 - RAMP: SDG&E-Risk-9, C10, Code Compliance
 In-Service Date: Not Applicable

Description:

Regulator Replacement Program of Type K-Regulators, Installation of barricades to protect MSAs from vehicular traffic, Electronic pressure monitoring devices (EPM), and Installation of isolation valves

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		825	825	825
Non-Labor		1,837	1,837	1,837
NSE		0	0	0
	Total	2,662	2,662	2,662
FTE		5.7	5.4	5.4

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00507.0
 Category: G. Code Compliance
 Category-Sub: 1. Code Compliance
 Workpaper Group: 005070 - Code Compliance
 Workpaper Detail: 005070.001 - RAMP: SDG&E-Risk-9, C10, Code Compliance

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C10
 RAMP Line Item Name: Code Compliance Mitigation
 Tranche(s): Tranche1: Meter & Beyond the Meter

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	3,101	2,662	2,662	2,662	7,986	5,900	7,140

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	1,490.00	1,283.00	1,481.00	1,481.00	4,245.00	2,836.00	3,433.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	1.000	10.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00507.0
 Category: G. Code Compliance
 Category-Sub: 1. Code Compliance
 Workpaper Group: 005070 - Code Compliance
 Workpaper Detail: 005070.002 - EPM and Pressure Corrector Replacements
 In-Service Date: Not Applicable

Description:

Proactive replacement for improved reliability and calibration stability of electronic pressure monitors and electronic pressure correctors

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		40	65	65
Non-Labor		10	360	360
NSE		0	0	0
	Total	50	425	425
FTE		0.8	1.4	1.4

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: H. Leak Repair
Workpaper: 005080

Summary for Category: H. Leak Repair

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	4,427	4,775	4,997	5,218
Non-Labor	5,656	7,160	7,976	8,792
NSE	0	0	0	0
Total	10,083	11,935	12,973	14,010
FTE	35.5	53.0	50.9	48.8

005080 Leak Repair

Labor	4,427	4,775	4,997	5,218
Non-Labor	5,656	7,160	7,976	8,792
NSE	0	0	0	0
Total	10,083	11,935	12,973	14,010
FTE	35.5	53.0	50.9	48.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
005080 - Leak Repair**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00508.0
 Category: H. Leak Repair
 Category-Sub: 1. Leak Repair
 Workpaper Group: 005080 - Leak Repair

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 Linear	3,619	3,832	4,235	4,435	4,427	4,775	4,997	5,218
Non-Labor	5-YR Linear	2,957	3,712	4,764	6,473	5,656	7,160	7,976	8,792
NSE	5-YR Linear	0	0	0	0	0	0	0	0
Total		6,576	7,544	8,999	10,907	10,083	11,935	12,973	14,010
FTE	5-YR Linear	23.7	26.9	30.0	33.3	35.5	53.0	50.9	48.8

Business Purpose:

Expenditures in budget code 508 support SDG&E's continued safe and reliable delivery of natural gas in compliance with State and Federal code requirements for replacement of gas distribution system piping due to poor condition or location.

Physical Description:

This budget code provides for the replacement of deteriorated Gas Distribution system pipelines to maintain public safety and system reliability. Expenditures in this budget code range from minor pipe replacements to more complex projects. Most minor projects are completed in association with leak investigation and repair work. When the pipe condition is found to be hazardous or the pipeline has conditions, such as a history of leaks, the field and/or technical staff determines replacement options.

Project Justification:

Budget code 508 project replacements are required in order to comply with State and Federal code requirements and for the safe and reliable delivery of natural gas through the gas distribution system.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00508.0
Category: H. Leak Repair
Category-Sub: 1. Leak Repair
Workpaper Group: 005080 - Leak Repair

Forecast Methodology:

Labor - 5-YR Linear

In developing the main and services replacements forecast, historical expenditures for 2017 through 2021 were evaluated. Spending in this budget category has continually increased over this period due to multiple factors. A variety of factors influence the level of spending on leak repair in a given year. These factors include increasing government regulations, aging infrastructure, public safety, municipality requirements, material failure, infrastructure, economic conditions, and the changes to leak patrol cycles. The five year linear trend forecast method was selected for labor and non-labor as it best represents the base level of work that is anticipated for the forecast years.

Non-Labor - 5-YR Linear

See description above which applies to both Labor and Non-Labor

NSE - 5-YR Linear

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00508.0
 Category: H. Leak Repair
 Category-Sub: 1. Leak Repair
 Workpaper Group: 005080 - Leak Repair

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 Linear	4,775	4,997	5,218	0	0	0	4,775	4,997	5,218
Non-Labor	5-YR Linear	7,160	7,976	8,792	0	0	0	7,160	7,976	8,792
NSE	5-YR Linear	0	0	0	0	0	0	0	0	0
Total		11,935	12,973	14,010	0	0	0	11,935	12,973	14,010
FTE	5-YR Linear	53.0	50.9	48.8	0.0	0.0	0.0	53.0	50.9	48.8

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00508.0
Category: H. Leak Repair
Category-Sub: 1. Leak Repair
Workpaper Group: 005080 - Leak Repair

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	2,352	2,630	3,067	3,376	3,849
Non-Labor	11,927	8,874	4,254	5,641	5,656
NSE	0	0	0	0	0
Total	14,279	11,504	7,321	9,017	9,505
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	-9,720	-5,941	-309	-14	0
NSE	0	0	0	0	0
Total	-9,720	-5,941	-309	-14	0
FTE	20.3	23.0	25.8	28.7	30.3
Recorded-Adjusted (Nominal \$)					
Labor	2,352	2,630	3,067	3,376	3,849
Non-Labor	2,207	2,934	3,945	5,627	5,656
NSE	0	0	0	0	0
Total	4,558	5,563	7,012	9,003	9,505
FTE	20.3	23.0	25.8	28.7	30.3
Vacation & Sick (Nominal \$)					
Labor	349	398	439	479	578
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	349	398	439	479	578
FTE	3.4	3.9	4.2	4.6	5.2
Escalation to 2021\$					
Labor	919	804	728	580	0
Non-Labor	750	778	819	846	0
NSE	0	0	0	0	0
Total	1,669	1,582	1,548	1,426	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	3,619	3,832	4,235	4,435	4,427
Non-Labor	2,957	3,712	4,764	6,473	5,656
NSE	0	0	0	0	0
Total	6,576	7,544	8,999	10,907	10,083
FTE	23.7	26.9	30.0	33.3	35.5

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00508.0
 Category: H. Leak Repair
 Category-Sub: 1. Leak Repair
 Workpaper Group: 005080 - Leak Repair

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	-9,720	-5,941	-309	-14	0
NSE	0	0	0	0	0
Total	-9,720	-5,941	-309	-14	0
FTE	20.3	23.0	25.8	28.7	30.3

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	-9,720	0	-9,720	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2017	0.001	0	0	0.001	20.3
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.001	-9,720	0	-9,720	20.3
2018	0	-5,941	0	-5,941	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2018	0.001	0	0	0.001	23.0
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	-5,941	0	-5,941	23.0
2019	0	-309	0	-309	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2019	0.001	0	0	0.001	25.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	-309	0	-309	25.8
2020	0	-14	0	-14	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2020	0.001	0	0	0.001	28.7

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00508.0
 Category: H. Leak Repair
 Category-Sub: 1. Leak Repair
 Workpaper Group: 005080 - Leak Repair

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	-14	0	-14	28.7
2021	0.001	0	0	0.001	30.3
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	30.3

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005080**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00508.0
 Category: H. Leak Repair
 Category-Sub: 1. Leak Repair
 Workpaper Group: 005080 - Leak Repair
 Workpaper Detail: 005080.001 - RAMP: SDG&E-Risk-9, C06, Leak Repair (Capital)
 In-Service Date: Not Applicable

Description:

Unplanned capital leak repair.

Forecast In 2021 \$(000)			
Years	2022	2023	2024
Labor	4,775	4,997	5,218
Non-Labor	7,160	7,976	8,792
NSE	0	0	0
Total	11,935	12,973	14,010
FTE	53.0	50.9	48.8

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00508.0
 Category: H. Leak Repair
 Category-Sub: 1. Leak Repair
 Workpaper Group: 005080 - Leak Repair
 Workpaper Detail: 005080.001 - RAMP: SDG&E-Risk-9, C06, Leak Repair (Capital)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C06
 RAMP Line Item Name: Leak Repair (Capital)
 Tranche(s): Tranche1: MP Main Plastic; Tranche2: MP Main Steel

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	3,922	4,643	5,046	5,450	15,139	26,865	32,525
Tranche 2 Cost Estimate	6,160	7,292	7,927	8,560	23,779	26,865	32,525

Cost Estimate Changes from RAMP:

GRC forecast is outside the RAMP range due to reallocation of dollars associated with revised tranching and forecast assumptions.

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	230.00	273.00	302.00	331.00	906.00	1,607.00	1,946.00
Tranche 2 # of Projects	361.00	429.00	474.00	520.00	1,423.00	1,607.00	1,946.00

Work Unit Changes from RAMP:

GRC forecast is outside the RAMP range due to reallocation of units associated with revised tranching and forecast assumptions.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	66.000	0.000
Tranche 2	37.000	0.000

RSE Changes from RAMP:

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00508.0
Category: H. Leak Repair
Category-Sub: 1. Leak Repair
Workpaper Group: 005080 - Leak Repair
Workpaper Detail: 005080.001 - RAMP: SDG&E-Risk-9, C06, Leak Repair (Capital)

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: I. Cathodic Protection Program
 Workpaper: 005090

Summary for Category: I. Cathodic Protection Program

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	692	421	421	421
Non-Labor	3,718	4,072	4,072	4,072
NSE	0	0	0	0
Total	4,410	4,493	4,493	4,493
FTE	6.8	8.0	8.0	8.0

005090 Cathodic Protection

Labor	692	421	421	421
Non-Labor	3,718	4,072	4,072	4,072
NSE	0	0	0	0
Total	4,410	4,493	4,493	4,493
FTE	6.8	8.0	8.0	8.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
005090 - Cathodic Protection**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00509.0
 Category: I. Cathodic Protection Program
 Category-Sub: 1. Cathodic Protection Program
 Workpaper Group: 005090 - 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	260	242	437	471	692	421	421	421
Non-Labor	5-YR Average	3,143	4,192	5,554	3,752	3,718	4,072	4,072	4,072
NSE	5-YR Average	0	0	0	0	0	0	0	0
Total		3,403	4,434	5,991	4,223	4,410	4,493	4,493	4,493
FTE	5-YR Average	2.3	2.2	4.3	4.3	6.8	8.0	8.0	8.0

Business Purpose:

Budget code 509 provides funds to enhance and improve SDG&E's cathodic protection (CP) system. CP equipment additions are required so that SDG&E meets code mandated corrosion control requirements for the steel portion of the gas distribution system. By placing steel pipelines under cathodic protection, corrosion is minimized, resulting in a safer and more reliable gas system as well as extending the life of the steel pipeline system.

Physical Description:

Corrosion on pipelines increases the potential for gas leaks and may reduce the useful lives of the pipelines. Cathodic protection is one method for mitigating external corrosion on steel pipelines by imposing an electric current flow toward the surface of a pipeline. This budget code funds the addition of new CP systems and the replacement or upgrade of existing CP systems. Installations include direct current rectifier stations, deep well anode beds, and related equipment.

Project Justification:

Cathodic protection extends the life of the steel portion of the gas distribution system and is mandated by CPUC GO 112-F and federal code 49 CFR 192, Subpart I. Each pipeline that is under cathodic protection must be tested to determine whether the CP meets the requirements of 49 CFR 192.463 - External corrosion control: Cathodic Protection. Prompt remedial action to correct any deficiencies indicated by monitoring is required. Results obtained from ongoing cathodic protection system monitoring drives the installation of new or upgraded CP systems.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00509.0
Category: I. Cathodic Protection Program
Category-Sub: 1. Cathodic Protection Program
Workpaper Group: 005090 - Cathodic Protection

Forecast Methodology:

Labor - 5-YR Average

The frequency and amount of projects performed in this work category are driven by the age of the CP system , the health of surrounding CP stations, soil conditions, and effective resolution of system shorts. A review of historical expenditures from 2017 through 2021 revealed, other than an increase in work activity in 2019, a fairly level trend in work activity. Budget code 509 was forecast using a five year average calculation for labor and non-labor as it best represents the required base level of routine work for cathodic protection.

Non-Labor - 5-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 5-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00509.0
 Category: I. Cathodic Protection Program
 Category-Sub: 1. Cathodic Protection Program
 Workpaper Group: 005090 - 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	420	420	420	1	1	1	421	421	421
Non-Labor	5-YR Average	4,072	4,072	4,072	0	0	0	4,072	4,072	4,072
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		4,492	4,492	4,492	1	1	1	4,493	4,493	4,493
FTE	5-YR Average	4.0	4.0	4.0	4.0	4.0	4.0	8.0	8.0	8.0

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00509.0
Category: I. Cathodic Protection Program
Category-Sub: 1. Cathodic Protection Program
Workpaper Group: 005090 - Cathodic Protection

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	169	166	317	359	601
Non-Labor	2,345	3,313	4,599	3,262	3,718
NSE	0	0	0	0	0
Total	2,514	3,479	4,915	3,621	4,319
FTE	0.0	0.0	0.0	0.0	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	2.0	1.9	3.7	3.7	5.8
Recorded-Adjusted (Nominal \$)					
Labor	169	166	317	359	601
Non-Labor	2,345	3,313	4,599	3,262	3,718
NSE	0	0	0	0	0
Total	2,514	3,479	4,915	3,621	4,319
FTE	2.0	1.9	3.7	3.7	5.8
Vacation & Sick (Nominal \$)					
Labor	25	25	45	51	90
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	25	25	45	51	90
FTE	0.3	0.3	0.6	0.6	1.0
Escalation to 2021\$					
Labor	66	51	75	62	0
Non-Labor	798	879	955	490	0
NSE	0	0	0	0	0
Total	864	930	1,030	552	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	260	242	437	471	692
Non-Labor	3,143	4,192	5,554	3,752	3,718
NSE	0	0	0	0	0
Total	3,403	4,434	5,991	4,223	4,410
FTE	2.3	2.2	4.3	4.3	6.8

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00509.0
 Category: I. Cathodic Protection Program
 Category-Sub: 1. Cathodic Protection Program
 Workpaper Group: 005090 - 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	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	2.0	1.9	3.7	3.7	5.8

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	0.001	0	0	0.001	2.0
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.001	0	0	0.001	2.0
2018	0.001	0	0	0.001	1.9
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	0	0	0.001	1.9
2019	0.001	0	0	0.001	3.7
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	0	0	0.001	3.7
2020	0.001	0	0	0.001	3.7
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	3.7
2021	0.001	0	0	0.001	5.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	5.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005090**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00509.0
 Category: I. Cathodic Protection Program
 Category-Sub: 1. Cathodic Protection Program
 Workpaper Group: 005090 - Cathodic Protection
 Workpaper Detail: 005090.001 - RAMP: SDG&E-Risk-9, C02 Cathodic Protection (Capital)
 In-Service Date: Not Applicable

Description:

Budget code 509 provides funds to enhance and improve SDG&E's cathodic protection (CP) system. CP equipment additions are required to ensure SDG&E meets code mandated corrosion control requirements for the steel portion of the gas distribution system.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		421	421	421
Non-Labor		4,072	4,072	4,072
NSE		0	0	0
	Total	<u>4,493</u>	<u>4,493</u>	<u>4,493</u>
FTE		8.0	8.0	8.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00509.0
 Category: I. Cathodic Protection Program
 Category-Sub: 1. Cathodic Protection Program
 Workpaper Group: 005090 - Cathodic Protection
 Workpaper Detail: 005090.001 - RAMP: SDG&E-Risk-9, C02 Cathodic Protection (Capital)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C02

RAMP Line Item Name: Cathodic Protection Program - Capital

Tranche(s): Tranche1: HP Supply Line; Tranche2: MP Main Steel

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	237	242	242	242	726	17,795	21,540
Tranche 2 Cost Estimate	4,172	4,251	4,251	4,251	12,753	17,795	21,540

Cost Estimate Changes from RAMP:

GRC forecast is outside the RAMP range due to reallocation of dollars associated with revised tranching and forecast assumptions.

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 Deep Well Anode Beds	3.00	3.00	3.00	3.00	9.00	137.00	166.00
Tranche 2 # of Deep Well Anode Beds	42.00	43.00	43.00	43.00	129.00	137.00	166.00

Work Unit Changes from RAMP:

The GRC forecast is outside the RAMP range due to reallocation of units associated with revised tranching.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	47.000	25.000
Tranche 2	1.000	25.000

RSE Changes from RAMP:

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00509.0
Category: I. Cathodic Protection Program
Category-Sub: 1. Cathodic Protection Program
Workpaper Group: 005090 - Cathodic Protection
Workpaper Detail: 005090.001 - RAMP: SDG&E-Risk-9, C02 Cathodic Protection (Capital)

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: J. Cathodic Protection System Enhancements
 Workpaper: 125510

Summary for Category: J. Cathodic Protection System Enhancements

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	199	254	254	254
Non-Labor	2,721	1,742	1,742	1,742
NSE	0	0	0	0
Total	2,920	1,996	1,996	1,996
FTE	2.1	4.9	4.9	4.9

125510 Cathodic Protection System Enhancement

Labor	199	254	254	254
Non-Labor	2,721	1,742	1,742	1,742
NSE	0	0	0	0
Total	2,920	1,996	1,996	1,996
FTE	2.1	4.9	4.9	4.9

Note: Totals may include rounding differences.

Beginning of Workpaper Group
125510 - Cathodic Protection System Enhancement

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 12551.0
 Category: J. Cathodic Protection System Enhancements
 Category-Sub: 1. Cathodic Protection System Enhancements
 Workpaper Group: 125510 - Cathodic Protection System Enhancement

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	471	154	344	215	199	254	254	254
Non-Labor	3-YR Average	6,477	10,177	1,285	1,221	2,721	1,742	1,742	1,742
NSE	3-YR Average	0	0	0	0	0	0	0	0
Total		6,949	10,331	1,629	1,436	2,919	1,996	1,996	1,996
FTE	3-YR Average	4.3	1.4	2.8	1.9	2.1	4.9	4.9	4.9

Business Purpose:

Budget code 12551 provides funds to enhance and improve SDG&E's cathodic protection (CP) system in addition to the cathodic protection work performed in budget code 509. The Cathodic Protection System Enhancement budget code tracks projects specifically associated with creating dedicated high pressure and medium distribution pressure pipeline CP systems and remediating non-state-of-the-art cathodic protection on steel pipe segments, risers and valves as determined through advances in GIS mapping capabilities.

Physical Description:

This budget code funds the proactive cathodic protection system improvements and reinforcements in addition to its routine work performed in budget code 509. Cathodic system enhancements are based on internal company assessments. A majority of work involves separating transmission gas mains from distribution gas mains, as well as isolating all high-pressure distribution lines. CP system enhancements included in BC 12551 involve the installation of insulated unions to separate CP systems, new rectifiers, anode beds and test points allowing CP technicians to take CP reads.

Project Justification:

Projects funded under this budget code are individually justified using internal company assessments that identify areas where high pressure and medium pressure distribution CP systems can be isolated. The advantage of having dedicated, isolated, cathodically protected systems, provides protection of distribution systems and minimized current drawn from connected CP stations that can result from electric shorts downstream in the system.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 12551.0
Category: J. Cathodic Protection System Enhancements
Category-Sub: 1. Cathodic Protection System Enhancements
Workpaper Group: 125510 - Cathodic Protection System Enhancement

Forecast Methodology:

Labor - 3-YR Average

Expenditures in this budget category change due to the variation in the work activity for the identified CP enhancement projects. A review of historical expenditures from 2017 through 2021 revealed, other than an explainable increase in work activity in 2018 from one larger CP enhancement project, a fairly level trend in work activity over the past three years. This is expected to continue through the forecast years, therefore Budget code 12551 was forecast using a three year average calculation for labor and non-labor as it best represents the required base level of routine work for CP enhancement projects.

Non-Labor - 3-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 3-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 12551.0
 Category: J. Cathodic Protection System Enhancements
 Category-Sub: 1. Cathodic Protection System Enhancements
 Workpaper Group: 125510 - Cathodic Protection System Enhancement

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	253	253	253	1	1	1	254	254	254
Non-Labor	3-YR Average	1,742	1,742	1,742	0	0	0	1,742	1,742	1,742
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		1,995	1,995	1,995	1	1	1	1,996	1,996	1,996
FTE	3-YR Average	2.3	2.3	2.3	2.6	2.6	2.6	4.9	4.9	4.9

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 12551.0
Category: J. Cathodic Protection System Enhancements
Category-Sub: 1. Cathodic Protection System Enhancements
Workpaper Group: 125510 - Cathodic Protection System Enhancement

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	306	105	249	163	173
Non-Labor	4,833	8,043	1,064	1,062	2,721
NSE	0	0	0	0	0
Total	5,140	8,149	1,313	1,225	2,894
FTE	0.1	0.0	0.0	0.0	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	3.6	1.2	2.4	1.6	1.8
Recorded-Adjusted (Nominal \$)					
Labor	306	105	249	163	173
Non-Labor	4,833	8,043	1,064	1,062	2,721
NSE	0	0	0	0	0
Total	5,140	8,149	1,313	1,225	2,894
FTE	3.7	1.2	2.4	1.6	1.8
Vacation & Sick (Nominal \$)					
Labor	45	16	36	23	26
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	45	16	36	23	26
FTE	0.6	0.2	0.4	0.3	0.3
Escalation to 2021\$					
Labor	120	32	59	28	0
Non-Labor	1,644	2,134	221	160	0
NSE	0	0	0	0	0
Total	1,764	2,166	280	188	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	471	154	344	215	199
Non-Labor	6,477	10,177	1,285	1,221	2,721
NSE	0	0	0	0	0
Total	6,949	10,331	1,629	1,436	2,919
FTE	4.3	1.4	2.8	1.9	2.1

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 12551.0
 Category: J. Cathodic Protection System Enhancements
 Category-Sub: 1. Cathodic Protection System Enhancements
 Workpaper Group: 125510 - Cathodic Protection System Enhancement

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	3.6	1.2	2.4	1.6	1.8

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	0.001	0	0	0.001	3.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2017 Total	0.001	0	0	0.001	3.6
2018	0.001	0	0	0.001	1.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	0	0	0.001	1.2
2019	0.001	0	0	0.001	2.4
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	0	0	0.001	2.4
2020	0.001	0	0	0.001	1.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	1.6
2021	0.001	0	0	0.001	1.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	1.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 125510**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 12551.0
 Category: J. Cathodic Protection System Enhancements
 Category-Sub: 1. Cathodic Protection System Enhancements
 Workpaper Group: 125510 - Cathodic Protection System Enhancement
 Workpaper Detail: 125510.001 - RAMP: SDG&E-Risk-9, C12 Cathodic Protection System Enhancements
 In-Service Date: Not Applicable

Description:

Budget code 12551 provides funds to enhance and improve SDG&E's cathodic protection (CP) system in addition to the cathodic protection work performed in budget code 509.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		254	254	254
Non-Labor		1,742	1,742	1,742
NSE		0	0	0
	Total	<u>1,996</u>	<u>1,996</u>	<u>1,996</u>
FTE		4.9	4.9	4.9

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 12551.0
 Category: J. Cathodic Protection System Enhancements
 Category-Sub: 1. Cathodic Protection System Enhancements
 Workpaper Group: 125510 - Cathodic Protection System Enhancement
 Workpaper Detail: 125510.001 - RAMP: SDG&E-Risk-9, C12 Cathodic Protection System Enhancements

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C12

RAMP Line Item Name: Cathodic Protection System Enhancements

Tranche(s): Tranche1: HP Supply Line; Tranche2: MP Main Steel

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	157	108	108	108	324	2,980	3,610
Tranche 2 Cost Estimate	2,538	1,888	1,888	1,888	5,664	2,980	3,610

Cost Estimate Changes from RAMP:

GRC forecast is outside the RAMP range due to reallocation of dollars associated with revised tranching and forecast assumptions.

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	1.00	1.00	1.00	1.00	3.00	137.00	166.00
Tranche 2 # of Projects	36.00	25.00	25.00	25.00	75.00	137.00	166.00

Work Unit Changes from RAMP:

GRC forecast is outside the RAMP range due to reallocation of units associated with revised tranching and forecast assumptions.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.400	4.000
Tranche 2	0.020	4.000

RSE Changes from RAMP:

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 12551.0
Category: J. Cathodic Protection System Enhancements
Category-Sub: 1. Cathodic Protection System Enhancements
Workpaper Group: 125510 - Cathodic Protection System Enhancement
Workpaper Detail: 125510.001 - RAMP: SDG&E-Risk-9, C12 Cathodic Protection System Enhancements

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: K. System Reliability & Improvements
 Workpaper: 005100

Summary for Category: K. System Reliability & Improvements

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	22	119	194	119
Non-Labor	624	1,837	3,262	1,837
NSE	0	0	0	0
Total	646	1,956	3,456	1,956
FTE	0.2	0.8	1.6	0.8

005100 Regulator Station Improvements and Other

Labor	22	119	194	119
Non-Labor	624	1,837	3,262	1,837
NSE	0	0	0	0
Total	646	1,956	3,456	1,956
FTE	0.2	0.8	1.6	0.8

Note: Totals may include rounding differences.

Beginning of Workpaper Group
005100 - Regulator Station Improvements and Other

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other

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	349	194	15	15	22	119	194	119
Non-Labor	5-YR Average	2,875	4,023	493	1,172	624	1,837	3,262	1,837
NSE	5-YR Average	0	0	0	0	0	0	0	0
	Total	3,224	4,216	508	1,187	645	1,956	3,456	1,956
FTE	5-YR Average	2.3	1.3	0.1	0.1	0.2	0.8	1.6	0.8

Business Purpose:

Budget code 510 provides funding for small capital projects or upgrades (not captured under the other budget codes) that improve safety, provide required code compliance, and improve gas system performance or reliability through the replacement of aging gas operating equipment.

Physical Description:

Projects completed under this budget code typically involve upgrades or improvements to distribution piping, pressure regulation or metering stations, valve stations, meter set assembly valve replacements, remote monitoring, instrumentation equipment, LNG upgrades, or other gas distribution facilities.

Project Justification:

This budget code provides the necessary capital to support the company's goals of maintaining safety, integrity and reliability. Projects completed under this budget code are justified based on mandated compliance with Federal and State safety codes consistent with General Order 58-A, General Order 112-F, numerous sections of DOT 49 CFR 192, and OSHA Section 1910 Subpart A.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00510.0
Category: K. System Reliability & Improvements
Category-Sub: 1. System Reliability & Improvements
Workpaper Group: 005100 - Regulator Station Improvements and Other

Forecast Methodology:

Labor - 5-YR Average

Expenditures in this budget category vary depending largely on the number and nature of improvements, upgrades or remediations identified, as well as planning, permitting and scheduling requirements. A five year average forecast was determined to capture both the more current volume of work in this category while also moderating the high and low spends in earlier years. The five-year average forecast represents the base level of labor and non-labor anticipated in the forecast years.

Non-Labor - 5-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 5-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other

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	119	119	119	0	75	0	119	194	119
Non-Labor	5-YR Average	1,837	1,837	1,837	0	1,425	0	1,837	3,262	1,837
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		1,956	1,956	1,956	0	1,500	0	1,956	3,456	1,956
FTE	5-YR Average	0.8	0.8	0.8	0.0	0.8	0.0	0.8	1.6	0.8

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	75	1,425	0	1,500	0.8

Explanation: San Diego Bay Crossing Remediation Project - Bay Crossing Remediation Project - Recent sonar surveys of San Diego Bay where our Bay lines cross have identified several locations with inadequate cover for protection of the pipelines. Incremental costs are required for this project to remediate that condition by installing additional rock or revetment mats over the pipelines at those locations. Labor expenses for this remediation work are estimated to be 5% = \$1,500K X .05 = \$75K for 2022 only. Non-Labor expenses are estimated to be \$1,425 for 2023 only.

2023 Total	75	1,425	0	1,500	0.8
2024 Total	0	0	0	0	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	227	133	11	11	19
Non-Labor	2,145	3,179	408	1,019	624
NSE	0	0	0	0	0
Total	2,372	3,312	419	1,030	642
FTE	2.0	0.6	0.0	0.0	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	0.5	0.1	0.1	0.2
Recorded-Adjusted (Nominal \$)					
Labor	227	133	11	11	19
Non-Labor	2,145	3,179	408	1,019	624
NSE	0	0	0	0	0
Total	2,372	3,312	419	1,030	642
FTE	2.0	1.1	0.1	0.1	0.2
Vacation & Sick (Nominal \$)					
Labor	34	20	2	2	3
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	34	20	2	2	3
FTE	0.3	0.2	0.0	0.0	0.0
Escalation to 2021\$					
Labor	89	41	3	2	0
Non-Labor	730	844	85	153	0
NSE	0	0	0	0	0
Total	818	884	87	155	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	349	194	15	15	22
Non-Labor	2,875	4,023	493	1,172	624
NSE	0	0	0	0	0
Total	3,224	4,216	508	1,187	645
FTE	2.3	1.3	0.1	0.1	0.2

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other

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	0.5	0.1	0.1	0.2

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	0.001	0	0	0.001	0.5
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2018 Total	0.001	0	0	0.001	0.5
2019	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	0	0	0.001	0.1
2020	0.001	0	0	0.001	0.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	0.1
2021	0.001	0	0	0.001	0.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	0.2

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005100**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other
 Workpaper Detail: 005100.001 - RAMP: SDG&E-Risk-9, C05 Regulator Station Replacement Program
 In-Service Date: Not Applicable
 Description:

Funding in this budget code will continue its current practice of replacing deteriorating regulator stations with before operations and safety issues arise.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		119	119	119
Non-Labor		1,837	1,837	1,837
NSE		0	0	0
	Total	1,956	1,956	1,956
FTE		0.8	0.8	0.8

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other
 Workpaper Detail: 005100.001 - RAMP: SDG&E-Risk-9, C05 Regulator Station Replacement Program

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C05

RAMP Line Item Name: Reg Station Replacement Program

Tranche(s): Tranche1: HP Supply Line; Tranche2: HP-MP Main Steel & Plastic

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	652	652	652	1,956	5,400	6,900
Tranche 2 Cost Estimate	645	1,304	1,304	1,304	3,912	5,400	6,900

Cost Estimate Changes from RAMP:

The GRC forecast is outside the RAMP range due to reallocation of dollars associated with revised tranching.

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 Regulator Stations Replaced	0.00	1.00	1.00	1.00	3.00	11.00	14.00
Tranche 2 # of Regulator Stations Replaced	1.00	2.00	2.00	2.00	6.00	11.00	14.00

Work Unit Changes from RAMP:

GRC forecast is outside the RAMP range due to reallocation of units associated with revised tranching and forecast assumptions.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	94.000	3.000
Tranche 2	0.700	57.000

RSE Changes from RAMP:

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00510.0
Category: K. System Reliability & Improvements
Category-Sub: 1. System Reliability & Improvements
Workpaper Group: 005100 - Regulator Station Improvements and Other
Workpaper Detail: 005100.001 - RAMP: SDG&E-Risk-9, C05 Regulator Station Replacement Program

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00510.0
 Category: K. System Reliability & Improvements
 Category-Sub: 1. System Reliability & Improvements
 Workpaper Group: 005100 - Regulator Station Improvements and Other
 Workpaper Detail: 005100.002 - Bay Crossing Remediation Project
 In-Service Date: 12/31/2023

Description:

SDG&E plans to remediate the diminishing cover on the Coronado Bay Crossing pipeline by installing either additional rock and/or revetment mats over the pipelines at specified locations.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		0	75	0
Non-Labor		0	1,425	0
NSE		0	0	0
	Total	0	1,500	0
FTE		0.0	0.8	0.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: L. Underperforming Steel Replacement Program – Thread
 Workpaper: 195650

Summary for Category: L. Underperforming Steel Replacement Program – Thread

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	1,795	840	840	840
Non-Labor	11,888	6,160	6,160	6,160
NSE	0	0	0	0
Total	13,683	7,000	7,000	7,000
FTE	20.8	8.8	8.8	8.8

195650 Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)

Labor	1,795	840	840	840
Non-Labor	11,888	6,160	6,160	6,160
NSE	0	0	0	0
Total	13,683	7,000	7,000	7,000
FTE	20.8	8.8	8.8	8.8

Note: Totals may include rounding differences.

Beginning of Workpaper Group
**195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934
vintage)**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19565.0
 Category: L. Underperforming Steel Replacement Program – Thread
 Category-Sub: 1. Underperforming Steel Replacement Program – Thread
 Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)

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	0	0	246	1,795	840	840	840
Non-Labor	Zero-Based	0	0	0	1,667	11,888	6,160	6,160	6,160
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	1,913	13,682	7,000	7,000	7,000
FTE	Zero-Based	0.0	0.0	0.0	2.9	20.8	8.8	8.8	8.8

Business Purpose:

Budget code 19565 provides funding specifically for the removal of early vintage (pre-1934) steel pipelines that were threaded together rather than welded. This practice was later abandoned in favor of welding the pipe. The threaded pipe is prone to higher rate of leakage due to susceptibility to corrosion near the threaded joint and offers less corrosion allowance than the standard welded pipe due to the thread cuts.

Physical Description:

Projects completed under this budget code would target the removal of pre-1934 threaded pipelines. This project would proactively prioritize and increase the replacement of threaded pipe in the system based on the number of leak indications on pipelines in this category.

Project Justification:

This budget code provides the necessary capital to support the company's goals of maintaining safety, integrity and reliability of the gas system through the prioritization and removal of aging (pre-1934) pipelines joined by threaded connections. Removal of these pipelines complies with federal and state mandated gas pipeline general maintenance requirements and addresses the potential safety risk to the public presented by gas pipeline leakage.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 19565.0
Category: L. Underperforming Steel Replacement Program – Thread
Category-Sub: 1. Underperforming Steel Replacement Program – Thread
Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)

Forecast Methodology:

Labor - Zero-Based

Budget code 19565 is a newly created budget code for the purpose of collecting expenses for the removal of pre-1934 threaded steel pipelines. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero based forecast methodology was selected for forecasting expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19565.0
 Category: L. Underperforming Steel Replacement Program – Thread
 Category-Sub: 1. Underperforming Steel Replacement Program – Thread
 Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)

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	840	840	840	0	0	0	840	840	840
Non-Labor	Zero-Based	6,160	6,160	6,160	0	0	0	6,160	6,160	6,160
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		7,000	7,000	7,000	0	0	0	7,000	7,000	7,000
FTE	Zero-Based	8.8	8.8	8.8	0.0	0.0	0.0	8.8	8.8	8.8

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19565.0
 Category: L. Underperforming Steel Replacement Program – Thread
 Category-Sub: 1. Underperforming Steel Replacement Program – Thread
 Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	187	1,560
Non-Labor	0	0	0	1,449	11,888
NSE	0	0	0	0	0
Total	0	0	0	1,636	13,448
FTE	0.0	0.0	0.0	0.0	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	2.5	17.8
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	187	1,560
Non-Labor	0	0	0	1,449	11,888
NSE	0	0	0	0	0
Total	0	0	0	1,636	13,448
FTE	0.0	0.0	0.0	2.5	17.8
Vacation & Sick (Nominal \$)					
Labor	0	0	0	27	234
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	27	234
FTE	0.0	0.0	0.0	0.4	3.0
Escalation to 2021\$					
Labor	0	0	0	32	0
Non-Labor	0	0	0	218	0
NSE	0	0	0	0	0
Total	0	0	0	250	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	0	246	1,795
Non-Labor	0	0	0	1,667	11,888
NSE	0	0	0	0	0
Total	0	0	0	1,913	13,682
FTE	0.0	0.0	0.0	2.9	20.8

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19565.0
 Category: L. Underperforming Steel Replacement Program – Thread
 Category-Sub: 1. Underperforming Steel Replacement Program – Thread
 Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)

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	2.5	17.8

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	0.001	0	0	0.001	2.5
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	2.5
2021	0.001	0	0	0.001	17.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	17.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 195650**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19565.0
 Category: L. Underperforming Steel Replacement Program – Thread
 Category-Sub: 1. Underperforming Steel Replacement Program – Thread
 Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)
 Workpaper Detail: 195650.001 - RAMP: SDG&E-Risk-9, C08-T1, Underperforming Steel Replacement Program (Pre-1934 vintage)
 In-Service Date: Not Applicable

Description:

Budget code 19565 provides funding specifically for the removal of early vintage (pre-1934) steel pipelines that were threaded together rather than welded. This practice was later abandoned in favor of welding the pipe.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		840	840	840
Non-Labor		6,160	6,160	6,160
NSE		0	0	0
	Total	<u>7,000</u>	<u>7,000</u>	<u>7,000</u>
FTE		8.8	8.8	8.8

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19565.0
 Category: L. Underperforming Steel Replacement Program – Thr
 Category-Sub: 1. Underperforming Steel Replacement Program – Thread
 Workpaper Group: 195650 - Underperforming Steel Replacement Program - Threaded Main (Pre-1934 vintage)
 Workpaper Detail: 195650.001 - RAMP: SDG&E-Risk-9, C08-T1, Underperforming Steel Replacement Program (Pre-1934 vintage)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C08-T1

RAMP Line Item Name: Underperforming Steel Replacement Program (Pre-1934 vintage)

Tranche(s): Tranche1: MP Main Steel

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	13,682	7,000	7,000	7,000	21,000	26,270	31,800

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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 Feet	42,648.00	21,875.00	21,875.00	21,875.00	65,625.00	189,003.00	228,794.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.400	6.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 195650

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: M. Underperforming Steel Replacement Program – 1934-1
 Workpaper: 195640

Summary for Category: M. Underperforming Steel Replacement Program – 1934-1

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	2,147	390	390	390
Non-Labor	12,565	2,610	2,610	2,610
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	14,712	3,000	3,000	3,000
FTE	25.9	4.1	4.1	4.1

195640 Underperforming Steel Replacement Program (1934-1965 vintage)

Labor	2,147	390	390	390
Non-Labor	12,565	2,610	2,610	2,610
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	14,712	3,000	3,000	3,000
FTE	25.9	4.1	4.1	4.1

Note: Totals may include rounding differences.

Beginning of Workpaper Group
195640 - Underperforming Steel Replacement Program (1934-1965 vintage)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19564.0
 Category: M. Underperforming Steel Replacement Program – 1934-1
 Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
 Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)

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	0	0	0	412	2,147	390	390	390
Non-Labor	Zero-Based	0	0	0	3,906	12,565	2,610	2,610	2,610
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	4,318	14,712	3,000	3,000	3,000
FTE	Zero-Based	0.0	0.0	0.0	4.9	25.9	4.1	4.1	4.1

Business Purpose:

Expenditures within budget code 19564 provide for the removal and replacement of early vintage steel pipelines (installed in the gas distribution system from 1934 to 1965) that due to pipe wrap disbonding lose their cathodic protection leading to increased leakage.

Physical Description:

In early vintage steel mains, cold tar asphaltic wrap was used as the first layer of corrosion protection. Over time, the early generation pipe wrap degrades and disbonds from the pipe, causing any cathodic protection current to leave the pipe around the disbonded coating thereby not providing adequate protection. Ultimately, this lack of corrosion protection will lead to increased leakage. Projects completed under this budget code would target the removal and replacement of early vintage (installed from 1934 to 1965) steel pipelines. This project would proactively prioritize and increase the replacement of these pipelines in the system based on the number of leak indications together with other attributes such as operational conditions and the impact on customer populations in the event of an incident.

Project Justification:

Budget code 19564 project pipeline removal and replacements are required in order to comply with federal and state mandated gas pipeline general maintenance requirements and to address the potential safety risk to the public presented by gas pipeline leakage.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 19564.0
Category: M. Underperforming Steel Replacement Program – 1934-1
Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)

Forecast Methodology:

Labor - Zero-Based

Budget code 19564 is a newly created budget code for the purpose of collecting expenses for the removal of 1934-1965 vintage steel pipelines. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero based forecast methodology was selected for forecasting labor and non-labor expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19564.0
 Category: M. Underperforming Steel Replacement Program – 1934-1
 Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
 Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)

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	390	390	390	0	0	0	390	390	390
Non-Labor	Zero-Based	2,610	2,610	2,610	0	0	0	2,610	2,610	2,610
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		3,000	3,000	3,000	0	0	0	3,000	3,000	3,000
FTE	Zero-Based	4.1	4.1	4.1	0.0	0.0	0.0	4.1	4.1	4.1

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19564.0
 Category: M. Underperforming Steel Replacement Program – 1934-1
 Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
 Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	314	1,866
Non-Labor	0	0	0	3,396	12,565
NSE	0	0	0	0	0
Total	0	0	0	3,709	14,432
FTE	0.0	0.0	0.0	0.0	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	4.2	22.1
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	314	1,866
Non-Labor	0	0	0	3,396	12,565
NSE	0	0	0	0	0
Total	0	0	0	3,709	14,432
FTE	0.0	0.0	0.0	4.2	22.1
Vacation & Sick (Nominal \$)					
Labor	0	0	0	44	280
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	44	280
FTE	0.0	0.0	0.0	0.7	3.8
Escalation to 2021\$					
Labor	0	0	0	54	0
Non-Labor	0	0	0	511	0
NSE	0	0	0	0	0
Total	0	0	0	564	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	0	412	2,147
Non-Labor	0	0	0	3,906	12,565
NSE	0	0	0	0	0
Total	0	0	0	4,318	14,712
FTE	0.0	0.0	0.0	4.9	25.9

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19564.0
 Category: M. Underperforming Steel Replacement Program – 1934-1
 Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
 Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)

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	4.2	22.1	

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE
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	0.001	0	0	0.001	4.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	4.2
2021	0.001	0	0	0.001	22.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	22.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 195640**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19564.0
 Category: M. Underperforming Steel Replacement Program – 1934-1
 Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
 Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)
 Workpaper Detail: 195640.001 - RAMP: SDG&E-Risk-9, C08-T2, Underperforming Steel Replacement Program - 1934-1965 vintage (19564)
 In-Service Date: Not Applicable

Description:

Expenditures within budget code 19564 provide for the removal and replacement of early vintage steel pipelines (installed in the gas distribution system from 1934 to 1965) that due to pipe wrap disbonding lose their cathodic protection leading to increased leakage.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		390	390	390
Non-Labor		2,610	2,610	2,610
NSE		0	0	0
	Total	3,000	3,000	3,000
FTE		4.1	4.1	4.1

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19564.0
 Category: M. Underperforming Steel Replacement Program – 193
 Category-Sub: 1. Underperforming Steel Replacement Program – 1934-1
 Workpaper Group: 195640 - Underperforming Steel Replacement Program (1934-1965 vintage)
 Workpaper Detail: 195640.001 - RAMP: SDG&E-Risk-9, C08-T2, Underperforming Steel Replacement Program - 1934-1965 vintage

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C08-T2

RAMP Line Item Name: Underperforming Steel Replacement Program - 1934-1965 Vintage (19564)

Tranche(s): Tranche1: MP Main Steel

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	14,712	3,000	3,000	3,000	9,000	20,805	25,185

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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 Feet	47,133.00	11,111.00	11,111.00	11,111.00	33,333.00	149,676.00	181,187.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	1.000	6.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 195640

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: N. Underperforming Steel Replacement Program – Other
 Workpaper: 005140

Summary for Category: N. Underperforming Steel Replacement Program – Other

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	55	35	35	35
Non-Labor	4,153	2,966	2,966	2,966
NSE	0	0	0	0
Total	4,208	3,001	3,001	3,001
FTE	0.7	1.5	1.5	1.5

005140 Underperforming Steel Replacement Program - Other (Post 1965 vintage)

Labor	55	35	35	35
Non-Labor	4,153	2,966	2,966	2,966
NSE	0	0	0	0
Total	4,208	3,001	3,001	3,001
FTE	0.7	1.5	1.5	1.5

Note: Totals may include rounding differences.

Beginning of Workpaper Group
005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00514.0
 Category: N. Underperforming Steel Replacement Program – Other
 Category-Sub: 1. Underperforming Steel Replacement Program – Other
 Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

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	0	0	60	295	55	35	35	35
Non-Labor	Zero-Based	13,027	7,517	2,651	918	4,153	2,966	2,966	2,966
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		13,027	7,517	2,710	1,212	4,208	3,001	3,001	3,001
FTE	Zero-Based	0.0	0.0	0.5	3.8	0.7	1.5	1.5	1.5

Business Purpose:

Expenditures within budget code 514 provide for the planned replacement of pipelines based on replacement decision elements with strong emphasis on a recurring leak history.

Physical Description:

Budget code 514 provides funds for the planned replacement of pipelines with consideration given to various replacement elements, including but not limited to, leakage history, age of the pipe, main pressure, and location of the pipe relative to population density. These planned pipeline replacements processed in this manner, will therefore result in a list among all pipeline replacement candidates, of recommended pipeline replacements in priority order. Pipeline replacements can then be planned, with strong emphasis on a recurring leak history, from this list resulting in removal of the highest risk to the public from pipeline leakage.

Project Justification:

Budget code 514 project pipeline replacements are required in order to comply with federal and state mandated gas pipeline general maintenance requirements and to address the potential safety risk to the public presented by gas pipeline leakage.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00514.0
Category: N. Underperforming Steel Replacement Program – Other
Category-Sub: 1. Underperforming Steel Replacement Program – Other
Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

Forecast Methodology:

Labor - Zero-Based

The list of pipeline replacements in priority order (discussed in description above) is used to determine an annual removal target. Based on the annual removal target, the forecasted mileage is multiplied by an estimated cost per mile to get the annual forecast.
Due to the limited historical data available, a zero-base forecast methodology was selected.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00514.0
 Category: N. Underperforming Steel Replacement Program – Other
 Category-Sub: 1. Underperforming Steel Replacement Program – Other
 Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

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	34	34	34	1	1	1	35	35	35
Non-Labor	Zero-Based	2,966	2,966	2,966	0	0	0	2,966	2,966	2,966
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		3,000	3,000	3,000	1	1	1	3,001	3,001	3,001
FTE	Zero-Based	0.4	0.4	0.4	1.1	1.1	1.1	1.5	1.5	1.5

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00514.0
 Category: N. Underperforming Steel Replacement Program – Other
 Category-Sub: 1. Underperforming Steel Replacement Program – Other
 Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	43	224	47
Non-Labor	0	0	1,886	784	4,153
NSE	0	0	0	0	0
Total	0	0	1,929	1,008	4,201
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	9,720	5,941	309	14	0
NSE	0	0	0	0	0
Total	9,720	5,941	309	14	0
FTE	0.0	0.0	0.4	3.3	0.6
Recorded-Adjusted (Nominal \$)					
Labor	0	0	43	224	47
Non-Labor	9,720	5,941	2,195	798	4,153
NSE	0	0	0	0	0
Total	9,720	5,941	2,238	1,022	4,201
FTE	0.0	0.0	0.4	3.3	0.6
Vacation & Sick (Nominal \$)					
Labor	0	0	6	32	7
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	6	32	7
FTE	0.0	0.0	0.1	0.5	0.1
Escalation to 2021\$					
Labor	0	0	10	39	0
Non-Labor	3,306	1,576	456	120	0
NSE	0	0	0	0	0
Total	3,306	1,576	466	158	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	60	295	55
Non-Labor	13,027	7,517	2,651	918	4,153
NSE	0	0	0	0	0
Total	13,027	7,517	2,710	1,212	4,208
FTE	0.0	0.0	0.5	3.8	0.7

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00514.0
 Category: N. Underperforming Steel Replacement Program – Other
 Category-Sub: 1. Underperforming Steel Replacement Program – Other
 Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

Summary of Adjustments to Recorded:

In Nominal \$(000)					
Years	2017	2018	2019	2020	2021
Labor	0	0	0	0	0
Non-Labor	9,720	5,941	309	14	0
NSE	0	0	0	0	0
Total	9,720	5,941	309	14	0
FTE	0.0	0.0	0.4	3.3	0.6

Detail of Adjustments to Recorded in Nominal \$:

Year	Labor	NLbr	NSE	Total	FTE
2017	0	9,720	0	9,720	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2017 Total	0	9,720	0	9,720	0.0
2018	0	5,941	0	5,941	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2018 Total	0	5,941	0	5,941	0.0
2019	0	309	0	309	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2019	0.001	0	0	0.001	0.4
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2019 Total	0.001	309	0	309	0.4
2020	0	14	0	14	0.0
Explanation:	Move planned steel replacement dollars to its own budget code (514) out of unplanned leak repair budget code (508).				
2020	0.001	0	0	0.001	3.3
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	14	0	14	3.3
2021	0.001	0	0	0.001	0.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 00514.0
Category: N. Underperforming Steel Replacement Program – Other
Category-Sub: 1. Underperforming Steel Replacement Program – Other
Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
2021 Total	0.001	0	0	0.001	0.6

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 005140**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00514.0
 Category: N. Underperforming Steel Replacement Program – Other
 Category-Sub: 1. Underperforming Steel Replacement Program – Other
 Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)
 Workpaper Detail: 005140.001 - RAMP: SDG&E-Risk-9, C08-T3, Underperforming Steel Replacement Pgm – Otr Steel (Post-1965 vintage)
 In-Service Date: Not Applicable

Description:

Expenditures within budget code 514 provide for the planned replacement of pipelines based on replacement decision elements with strong emphasis on a recurring leak history.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		35	35	35
Non-Labor		2,966	2,966	2,966
NSE		0	0	0
	Total	3,001	3,001	3,001
FTE		1.5	1.5	1.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 00514.0
 Category: N. Underperforming Steel Replacement Program – Oth
 Category-Sub: 1. Underperforming Steel Replacement Program – Other
 Workpaper Group: 005140 - Underperforming Steel Replacement Program - Other (Post 1965 vintage)
 Workpaper Detail: 005140.001 - RAMP: SDG&E-Risk-9, C08-T3, Underperforming Steel Replacement Pgm – Otr Steel (Post-1965 \

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C08-T3

RAMP Line Item Name: Underperforming Steel Replacement Program - Other Steel (Post-1965 Vintage)

Tranche(s): Tranche1: MP Main Steel

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	4,207	3,001	3,001	3,001	9,003	10,165	12,305

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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 Feet	28,183.00	18,750.00	18,750.00	18,750.00	56,250.00	73,137.00	88,534.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	5.000	9.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 005140

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: O. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper: 195660

Summary for Category: O. Early Vintage Program – Dresser Mechanical Couplin

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	138	60	60	60
Non-Labor	3,797	1,940	1,940	1,940
NSE	0	0	0	0
Total	3,935	2,000	2,000	2,000
FTE	1.3	0.6	0.6	0.6

195660 Early Vintage Program (Components) - Dresser Mechanical Coupling Removal

Labor	138	60	60	60
Non-Labor	3,797	1,940	1,940	1,940
NSE	0	0	0	0
Total	3,935	2,000	2,000	2,000
FTE	1.3	0.6	0.6	0.6

Note: Totals may include rounding differences.

Beginning of Workpaper Group
195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling
Removal

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19566.0
 Category: O. Early Vintage Program – Dresser Mechanical Couplin
 Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal

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	0	0	0	96	138	60	60	60
Non-Labor	Zero-Based	0	0	0	1,504	3,797	1,940	1,940	1,940
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	1,600	3,935	2,000	2,000	2,000
FTE	Zero-Based	0.0	0.0	0.0	0.7	1.3	0.6	0.6	0.6

Business Purpose:

Budget code 19566 provides funds for evaluating locations where Dresser mechanical couplings exist, excavating, removing the Dresser mechanical couplings, and reconnecting the pipeline back together. Removing these couplings mitigates the risk of an incident caused by the leakage of gas from these couplings.

Physical Description:

The Dresser mechanical coupling joins two pipes together without the need for welding. This type of coupling cannot resist lateral movement, and over time the rubber pressure containing seal degrades. In the event of land movement, pipe separation/rupture may occur and create an incident involving significant leakage of natural gas. This project consists of evaluating locations where Dresser mechanical couplings exist, excavating, removing the Dresser mechanical couplings, and welding pipes back together. This mitigates the risk of an incident involving the leakage of gas from these couplings.

Project Justification:

Budget code 19566 provides for the replacement of Dresser Couplings and is required in order to comply with federal and state mandated gas pipeline general maintenance requirements and to address the potential safety risk to the public presented by gas pipeline leakage.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 19566.0
Category: O. Early Vintage Program – Dresser Mechanical Couplin
Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal

Forecast Methodology:

Labor - Zero-Based

Budget code 19566 is a newly created budget code for the purpose of collecting expenses for the removal of Dresser couplings in the distribution pipeline system. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero based forecast methodology was selected for forecasting labor and non-labor expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19566.0
 Category: O. Early Vintage Program – Dresser Mechanical Couplin
 Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal

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	60	60	60	0	0	0	60	60	60
Non-Labor	Zero-Based	1,940	1,940	1,940	0	0	0	1,940	1,940	1,940
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		2,000	2,000	2,000	0	0	0	2,000	2,000	2,000
FTE	Zero-Based	0.6	0.6	0.6	0.0	0.0	0.0	0.6	0.6	0.6

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19566.0
 Category: O. Early Vintage Program – Dresser Mechanical Couplin
 Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	73	120
Non-Labor	0	0	0	1,307	3,797
NSE	0	0	0	0	0
Total	0	0	0	1,380	3,917
FTE	0.0	0.0	0.0	0.0	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	0.6	1.1
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	73	120
Non-Labor	0	0	0	1,307	3,797
NSE	0	0	0	0	0
Total	0	0	0	1,380	3,917
FTE	0.0	0.0	0.0	0.6	1.1
Vacation & Sick (Nominal \$)					
Labor	0	0	0	10	18
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	10	18
FTE	0.0	0.0	0.0	0.1	0.2
Escalation to 2021\$					
Labor	0	0	0	13	0
Non-Labor	0	0	0	197	0
NSE	0	0	0	0	0
Total	0	0	0	209	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	0	96	138
Non-Labor	0	0	0	1,504	3,797
NSE	0	0	0	0	0
Total	0	0	0	1,600	3,935
FTE	0.0	0.0	0.0	0.7	1.3

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19566.0
 Category: O. Early Vintage Program – Dresser Mechanical Couplin
 Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal

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	0.6	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	0.001	0	0	0.001	0.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	0.6
2021	0.001	0	0	0.001	1.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	1.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 195660**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19566.0
 Category: O. Early Vintage Program – Dresser Mechanical Couplin
 Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal
 Workpaper Detail: 195660.001 - RAMP: SDG&E-Risk-9, C09-T2, Early Vintage Program (Components) - Dresser Mech Coupling Removal
 In-Service Date: Not Applicable

Description:

Budget code 19566 provides funds for evaluating locations where Dresser mechanical couplings exist, excavating, removing the Dresser mechanical couplings, and reconnecting the pipeline back together. Removing these couplings mitigates the risk of an incident caused by the leakage of gas from these couplings.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		60	60	60
Non-Labor		1,940	1,940	1,940
NSE		0	0	0
	Total	2,000	2,000	2,000
FTE		0.6	0.6	0.6

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19566.0
 Category: O. Early Vintage Program – Dresser Mechanical Coup
 Category-Sub: 1. Early Vintage Program – Dresser Mechanical Couplin
 Workpaper Group: 195660 - Early Vintage Program (Components) - Dresser Mechanical Coupling Removal
 Workpaper Detail: 195660.001 - RAMP: SDG&E-Risk-9, C09-T2, Early Vintage Program (Components) - Dresser Mech Coupling Re

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C09-T2

RAMP Line Item Name: Early Vintage Program (Components) - Dresser Mech Coupling Removal

Tranche(s): Tranche1: MP Main Steel

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	3,934	2,000	2,000	2,000	6,000	8,825	10,685

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	27.00	14.00	14.00	14.00	42.00	59.00	71.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	1.000	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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 195660

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Workpaper: 195670

Summary for Category: P. Early Vintage Program – Oil Drip Piping Removal

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	180	60	60	60
Non-Labor	3,489	1,440	1,440	1,440
NSE	0	0	0	0
Total	3,669	1,500	1,500	1,500
FTE	1.6	0.6	0.6	0.6

195670 Early Vintage Program (Components) - Oil Drip Piping Removal

Labor	180	60	60	60
Non-Labor	3,489	1,440	1,440	1,440
NSE	0	0	0	0
Total	3,669	1,500	1,500	1,500
FTE	1.6	0.6	0.6	0.6

Note: Totals may include rounding differences.

Beginning of Workpaper Group
195670 - Early Vintage Program (Components) - Oil Drip Piping Removal

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19567.0
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
 Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal

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	0	0	70	180	60	60	60
Non-Labor	Zero-Based	0	0	0	153	3,489	1,440	1,440	1,440
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	222	3,668	1,500	1,500	1,500
FTE	Zero-Based	0.0	0.0	0.0	0.7	1.6	0.6	0.6	0.6

Business Purpose:

Budget code 19567 provides the funding to analyze gas system mapping to determine oil drip piping locations and prioritize their removal. In addition, funding is provided to remove this piping at selected locations.

Physical Description:

Pipeline oil drips were installed in low point high volume areas of the gas system to collect and purge unwanted liquids from gas mains. These systems were installed in the early days in the downtown areas when coal gasification was used and liquids were traditionally found in the system. Since liquids are no longer an issue for the SDG&E pipeline system, oil drips are obsolete. The buried oil drip piping facilities provide a piping obstruction near the main system piping and present a greatly increased risk of excavation damage due to their location. Budget code 19567 provides the funding to analyze gas system mapping to determine oil drip piping locations and prioritize their removal. In addition, funding is provided to remove this piping at selected locations.

Project Justification:

The buried oil drip piping's location and configuration historically were not captured with enough detail to identify them with precision on facility maps and at their location over the main. This piping is an underground obstruction on the gas main and poses a higher risk of damage from nearby excavation. Their removal would mitigate the risk to the public from damage and consequent uncontrolled release of natural gas from third party excavation near this piping on the main.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 19567.0
Category: P. Early Vintage Program – Oil Drip Piping Removal
Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal

Forecast Methodology:

Labor - Zero-Based

Budget code 19567 is a newly created budget code for the purpose of collecting expenses for the removal of Oil Drip Piping in the distribution pipeline system. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero based forecast methodology was selected for forecasting labor and non-labor expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19567.0
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
 Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal

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	60	60	60	0	0	0	60	60	60
Non-Labor	Zero-Based	1,440	1,440	1,440	0	0	0	1,440	1,440	1,440
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		1,500	1,500	1,500	0	0	0	1,500	1,500	1,500
FTE	Zero-Based	0.6	0.6	0.6	0.0	0.0	0.0	0.6	0.6	0.6

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19567.0
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
 Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	53	156
Non-Labor	0	0	0	133	3,489
NSE	0	0	0	0	0
Total	0	0	0	186	3,645
FTE	0.0	0.0	0.0	0.0	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	0.6	1.4
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	53	156
Non-Labor	0	0	0	133	3,489
NSE	0	0	0	0	0
Total	0	0	0	186	3,645
FTE	0.0	0.0	0.0	0.6	1.4
Vacation & Sick (Nominal \$)					
Labor	0	0	0	8	23
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	8	23
FTE	0.0	0.0	0.0	0.1	0.2
Escalation to 2021\$					
Labor	0	0	0	9	0
Non-Labor	0	0	0	20	0
NSE	0	0	0	0	0
Total	0	0	0	29	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	0	70	180
Non-Labor	0	0	0	153	3,489
NSE	0	0	0	0	0
Total	0	0	0	222	3,668
FTE	0.0	0.0	0.0	0.7	1.6

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19567.0
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
 Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal

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	0.6	1.4

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	0.001	0	0	0.001	0.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	0.6
2021	0.001	0	0	0.001	1.4
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	1.4

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 195670**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19567.0
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
 Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal
 Workpaper Detail: 195670.001 - RAMP: SDG&E-Risk-9, C09-T1, Early Vintage Program (Components) - Oil Drip Piping Removal
 In-Service Date: Not Applicable

Description:

Budget code 19567 provides the funding to analyze gas system mapping to determine oil drip piping locations and prioritize their removal. In addition, funding is provided to remove this piping at selected locations.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		60	60	60
Non-Labor		1,440	1,440	1,440
NSE		0	0	0
	Total	1,500	1,500	1,500
FTE		0.6	0.6	0.6

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19567.0
 Category: P. Early Vintage Program – Oil Drip Piping Removal
 Category-Sub: 1. Early Vintage Program – Oil Drip Piping Removal
 Workpaper Group: 195670 - Early Vintage Program (Components) - Oil Drip Piping Removal
 Workpaper Detail: 195670.001 - RAMP: SDG&E-Risk-9, C09-T1, Early Vintage Program (Components) - Oil Drip Piping Removal

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C09-T1
 RAMP Line Item Name: Early Vintage Program (Components) - Oil Drip Piping Removal
 Tranche(s): Tranche1: MP Main Steel

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	3,668	1,500	1,500	1,500	4,500	6,800	8,235

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	55.00	12.00	12.00	12.00	36.00	113.00	137.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	10.000	13.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 195670

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: Q. Early Vintage Program – Removal of Closed Valves b
 Workpaper: 195690

Summary for Category: Q. Early Vintage Program – Removal of Closed Valves b

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	148	225	225	225
Non-Labor	745	1,275	1,275	1,275
NSE	0	0	0	0
Total	893	1,500	1,500	1,500
FTE	1.3	2.0	2.0	2.0

195690 Early Vintage Program (Components) - Removal of Closed Valves between High/Medium

Labor	148	225	225	225
Non-Labor	745	1,275	1,275	1,275
NSE	0	0	0	0
Total	893	1,500	1,500	1,500
FTE	1.3	2.0	2.0	2.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
195690 - Early Vintage Program (Components) - Removal of Closed Valves between
High/Medium Pressure Zones

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19569.0
 Category: Q. Early Vintage Program – Removal of Closed Valves b
 Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
 Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure Zones

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	0	6	119	148	225	225	225
Non-Labor	Zero-Based	0	0	34	397	745	1,275	1,275	1,275
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	39	515	893	1,500	1,500	1,500
FTE	Zero-Based	0.0	0.0	0.0	0.9	1.3	2.0	2.0	2.0

Business Purpose:

This project provides funds to select and remove system block valves that separate high pressure and medium pressure zones. This would mitigate the risk should the valve be operated in error, operated in an act of sabotage, or the valve leak pressure downstream to the lower Maximum Allowable Operating Pressure (MAOP) system potentially causing an overpressure condition of the downstream system.

Physical Description:

SDG&E has identified 35 valves which separate high-pressure from medium-pressure zones in the gas distribution system. These valves are permanently locked out and tagged out in the closed position to serve as a physical barrier between high pressure and medium pressure. This condition is a result of an MAOP uprating of a pipeline which was previously interconnected to a distribution system and operated at a lower MAOP. Budget code 19569 provides funds to select and remove system block valves that separate high pressure and medium pressure zones.

Project Justification:

This project provides funds to select and remove system block valves that separate high pressure and medium pressure zones. Simply closing and locking the valve between high- and medium pressure systems is no longer an acceptable practice as there is inherent risk should the valve be operated in error, operated in an act of sabotage, or the valve leak pressure downstream to the lower MAOP system potentially causing an overpressure condition of the downstream system .

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 19569.0
Category: Q. Early Vintage Program – Removal of Closed Valves b
Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure

Forecast Methodology:

Labor - Zero-Based

Budget code 19569 is a newly created budget code for the purpose of collecting expenses for the removal of closed valves between high/medium pressure zones in the distribution pipeline system. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero-based forecast methodology was selected for forecasting labor and non-labor expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19569.0
 Category: Q. Early Vintage Program – Removal of Closed Valves b
 Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
 Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure Zone

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	225	225	225	0	0	0	225	225	225
Non-Labor	Zero-Based	1,275	1,275	1,275	0	0	0	1,275	1,275	1,275
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		1,500	1,500	1,500	0	0	0	1,500	1,500	1,500
FTE	Zero-Based	2.0	2.0	2.0	0.0	0.0	0.0	2.0	2.0	2.0

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19569.0
 Category: Q. Early Vintage Program – Removal of Closed Valves b
 Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
 Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure Zor

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	4	91	129
Non-Labor	0	0	28	345	745
NSE	0	0	0	0	0
Total	0	0	32	435	874
FTE	0.0	0.0	0.0	0.0	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	0.8	1.1
Recorded-Adjusted (Nominal \$)					
Labor	0	0	4	91	129
Non-Labor	0	0	28	345	745
NSE	0	0	0	0	0
Total	0	0	32	435	874
FTE	0.0	0.0	0.0	0.8	1.1
Vacation & Sick (Nominal \$)					
Labor	0	0	1	13	19
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	1	13	19
FTE	0.0	0.0	0.0	0.1	0.2
Escalation to 2021\$					
Labor	0	0	1	16	0
Non-Labor	0	0	6	52	0
NSE	0	0	0	0	0
Total	0	0	7	67	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	6	119	148
Non-Labor	0	0	34	397	745
NSE	0	0	0	0	0
Total	0	0	39	515	893
FTE	0.0	0.0	0.0	0.9	1.3

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19569.0
 Category: Q. Early Vintage Program – Removal of Closed Valves b
 Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
 Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure Zo

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	0.8	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	0.001	0	0	0.001	0.8
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	0.8
2021	0.001	0	0	0.001	1.1
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	1.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 195690**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19569.0
 Category: Q. Early Vintage Program – Removal of Closed Valves b
 Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
 Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure
 Workpaper Detail: 195690.001 - RAMP: SDG&E-Risk-9, C09-T3, Early Vintage Program (Components) - Removal of Closed Valves b/w HP/MP
 In-Service Date: Not Applicable

Description:

This project will verify valve locations in the field, excavate, and remove the closed and locked valves currently connecting high-pressure piping to medium pressure piping thus improving the safety and reliability of the system.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		225	225	225
Non-Labor		1,275	1,275	1,275
NSE		0	0	0
	Total	1,500	1,500	1,500
FTE		2.0	2.0	2.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19569.0
 Category: Q. Early Vintage Program – Removal of Closed Valve
 Category-Sub: 1. Early Vintage Program – Removal of Closed Valves b
 Workpaper Group: 195690 - Early Vintage Program (Components) - Removal of Closed Valves between High/Medium Pressure Zones
 Workpaper Detail: 195690.001 - RAMP: SDG&E-Risk-9, C09-T3, Early Vintage Program (Components) - Removal of Closed Valves

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C09-T3

RAMP Line Item Name: Early Vintage Program (Components)-Remove Closed Valves b/w HP/MP Zones

Tranche(s): Tranche1: MP Main Steel

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	893	1,500	1,500	1,500	4,500	735	890

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	10.00	10.00	10.00	30.00	4.00	5.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	1.000	6.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 195690

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: R. Piping in Vaults Replacement Program
 Workpaper: 195680

Summary for Category: R. Piping in Vaults Replacement Program

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	175	75	75	75
Non-Labor	2,750	1,425	1,425	1,425
NSE	0	0	0	0
Total	2,925	1,500	1,500	1,500
FTE	1.4	0.8	0.8	0.8

195680 Piping in Vauts Replacement Program

Labor	175	75	75	75
Non-Labor	2,750	1,425	1,425	1,425
NSE	0	0	0	0
Total	2,925	1,500	1,500	1,500
FTE	1.4	0.8	0.8	0.8

Note: Totals may include rounding differences.

Beginning of Workpaper Group
195680 - Piping in Vauts Replacement Program

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19568.0
 Category: R. Piping in Vaults Replacement Program
 Category-Sub: 1. Piping in Vaults Replacement Program
 Workpaper Group: 195680 - Piping in Vaults Replacement Program

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	0	0	108	175	75	75	75
Non-Labor	Zero-Based	0	0	0	109	2,750	1,425	1,425	1,425
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	217	2,925	1,500	1,500	1,500
FTE	Zero-Based	0.0	0.0	0.0	0.7	1.4	0.8	0.8	0.8

Business Purpose:

This project provides funds for the selection and replacement of piping located in underground vaults. Pipe segments, fittings, or valves exposed within a below grade vault is at risk for accelerated atmospheric corrosion due to the potential for water accumulation or pipe coating failure.

Physical Description:

SDG&E has a number of locations where piping, pipe fittings, and valves are located below grade inside a concrete vault to provide access to the valve for emergency operations. Any pipe segment, fitting, or valve exposed within a below grade vault is at risk for accelerated atmospheric corrosion due to the potential for water accumulation, pipe coating failure, and decreased cathodic protection effectiveness as these components within the vault are not protected for buried conditions and are exposed to the atmosphere. This project provides funds for the selection and replacement of this piping and these components in these locations where this exposure reduces their useful life and creates the potential for gas leakage.

Project Justification:

The replacement of piping, pipe fittings, and valves that are located below grade inside a concrete vault exposed to accelerated corrosion, would reduce the risk of the potential for gas leakage. This complies with federal and state mandated gas pipeline general maintenance requirements and mitigates the potential safety risk to the public presented by gas pipeline leakage.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 19568.0
Category: R. Piping in Vaults Replacement Program
Category-Sub: 1. Piping in Vaults Replacement Program
Workpaper Group: 195680 - Piping in Vaults Replacement Program

Forecast Methodology:

Labor - Zero-Based

Budget code 19568 is a newly created budget code for the purpose of collecting expenses for the removal of buried piping in vaults in the distribution pipeline system. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero based forecast methodology was selected for forecasting labor and non labor expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19568.0
 Category: R. Piping in Vaults Replacement Program
 Category-Sub: 1. Piping in Vaults Replacement Program
 Workpaper Group: 195680 - Piping in Vaults Replacement Program

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	75	75	75	0	0	0	75	75	75
Non-Labor	Zero-Based	1,425	1,425	1,425	0	0	0	1,425	1,425	1,425
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		1,500	1,500	1,500	0	0	0	1,500	1,500	1,500
FTE	Zero-Based	0.8	0.8	0.8	0.0	0.0	0.0	0.8	0.8	0.8

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19568.0
 Category: R. Piping in Vaults Replacement Program
 Category-Sub: 1. Piping in Vaults Replacement Program
 Workpaper Group: 195680 - Piping in Vauts Replacement Program

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	82	152
Non-Labor	0	0	0	94	2,750
NSE	0	0	0	0	0
Total	0	0	0	177	2,903
FTE	0.0	0.0	0.0	0.0	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	0.6	1.2
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	82	152
Non-Labor	0	0	0	94	2,750
NSE	0	0	0	0	0
Total	0	0	0	177	2,903
FTE	0.0	0.0	0.0	0.6	1.2
Vacation & Sick (Nominal \$)					
Labor	0	0	0	12	23
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	12	23
FTE	0.0	0.0	0.0	0.1	0.2
Escalation to 2021\$					
Labor	0	0	0	14	0
Non-Labor	0	0	0	14	0
NSE	0	0	0	0	0
Total	0	0	0	28	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	0	0	0	108	175
Non-Labor	0	0	0	109	2,750
NSE	0	0	0	0	0
Total	0	0	0	217	2,925
FTE	0.0	0.0	0.0	0.7	1.4

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19568.0
 Category: R. Piping in Vaults Replacement Program
 Category-Sub: 1. Piping in Vaults Replacement Program
 Workpaper Group: 195680 - Piping in Vauts Replacement Program

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	0.6	1.2

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	0.001	0	0	0.001	0.6
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2020 Total	0.001	0	0	0.001	0.6
2021	0.001	0	0	0.001	1.2
Explanation:	One-sided adjustment to add the FTE related to CPD orders that were inadvertently missing from the initial data load of historical costs				
2021 Total	0.001	0	0	0.001	1.2

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 195680**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19568.0
 Category: R. Piping in Vaults Replacement Program
 Category-Sub: 1. Piping in Vaults Replacement Program
 Workpaper Group: 195680 - Piping in Vauts Replacement Program
 Workpaper Detail: 195680.001 - RAMP: SDG&E-Risk-9, C03 Piping in Vaults Replacement Program
 In-Service Date: Not Applicable

Description:

This project provides funds for the selection and replacement of piping located in underground vaults. Pipe segments, fittings, or valves exposed within a below grade vault is at risk for accelerated atmospheric corrosion due to the potential for water accumulation or pipe coating failure.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		75	75	75
Non-Labor		1,425	1,425	1,425
NSE		0	0	0
	Total	1,500	1,500	1,500
FTE		0.8	0.8	0.8

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 19568.0
 Category: R. Piping in Vaults Replacement Program
 Category-Sub: 1. Piping in Vaults Replacement Program
 Workpaper Group: 195680 - Piping in Vauts Replacement Program
 Workpaper Detail: 195680.001 - RAMP: SDG&E-Risk-9, C03 Piping in Vaults Replacement Program

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: C03

RAMP Line Item Name: Piping in Vaults Replacement Program

Tranche(s): Tranche1: MP Main Steel

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	2,925	1,500	1,500	1,500	4,500	8,605	10,420

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	8.00	8.00	8.00	24.00	57.00	69.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	3.000	6.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 195680

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: T. Control Center Modernization (CCM) Project
 Workpaper: 215740

Summary for Category: T. Control Center Modernization (CCM) Project

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	0	251	1,423	1,649
Non-Labor	0	198	1,812	2,431
NSE	0	0	0	0
Total	0	449	3,235	4,080
FTE	0.0	2.8	15.8	18.3

215740 Gas Ops Control Center Project Distr Reg Station & Other

Labor	0	251	1,423	1,649
Non-Labor	0	198	1,812	2,431
NSE	0	0	0	0
Total	0	449	3,235	4,080
FTE	0.0	2.8	15.8	18.3

Note: Totals may include rounding differences.

Beginning of Workpaper Group
215740 - Gas Ops Control Center Project Distr Reg Station & Other

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21574.0
 Category: T. Control Center Modernization (CCM) Project
 Category-Sub: 1. Control Center Modernization (CCM) Project
 Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other

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	0	0	0	0	251	1,423	1,649
Non-Labor	Zero-Based	0	0	0	0	0	198	1,812	2,431
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	449	3,235	4,080
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	2.8	15.8	18.3

Business Purpose:

The purpose of the Control Center Modernization (CCM) project is to construct a new modernized Gas Control facility that will include advanced technology and be sized to accommodate the expanding workforce needed to monitor, maintain, and respond to data transmitted by the over 9,800 new and existing 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 SDG&E distribution system.

Physical Description:

The CCM project plans to enhance a total of 5 regulator stations with remote control and real-time monitoring capabilities through the TY 2024. In addition to enhancements at regulator stations, the CCM project will also integrate data from 639 meters, both core and non-core, and 300 EPMs into Gas Control. The meters will require replacement and/or reconfiguration of their communication modules and 300 EPMs will be replaced in the SDG&E territory.

Project Justification:

The CCM project will deploy remote control and real-time monitoring at distribution regulator stations, which will give Gas Control not only visibility into the dynamic pressures and flows across the gas distribution system but also the ability to control select stations. The CCM project will integrate Electronic Pressure Monitoring (EPM) data with advanced analytics use cases to provide Gas Control with additional near real-time insights to the distribution system. The CCM project will also integrate EPM and meter data to provide near real-time customer demand data to Gas Control. The integration of these field assets will transform field asset data into usable information for Gas Control to manage and control the overall gas system.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 21574.0
Category: T. Control Center Modernization (CCM) Project
Category-Sub: 1. Control Center Modernization (CCM) Project
Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other

Forecast Methodology:

Labor - Zero-Based

Budget code 21574 is a newly created budget code for the CCM activities. The forecast method developed for this cost category is zero based methodology. CCM project activities commenced in 2020 and continue to ramp up. Historical costs do not adequately reflect full deployment labor (non-labor) costs that will be seen in 2022, 2023, and 2024.

Enhanced Distribution Regulator Station: The forecast uses a per unit cost multiplied by the annual number of targeted distribution regulator station enhancements. The per unit costs are based on analysis of pilot sites costs for both real-time monitoring and control sites. The labor (non-labor) forecast consists of costs for internal resources for the project management, planning, engineering, permitting, field supervision, and close out of the enhanced distribution regulator stations.

Meter Data: The forecast uses a per unit cost multiplied by the annual number of targeted meter communication module reconfigurations and/or replacements. The per unit costs are based on analysis of similar type of meter work. This labor (non-labor) forecast consists of costs for internal resources for field installation hours and back-office field verification hours.

Electronic Pressure Monitoring (EPM): The forecast uses a per unit cost multiplied by the annual number of targeted EPM replacements. The forecast uses a per unit cost multiplied by the annual number of targeted EPM replacements. The per unit costs are based on analysis of similar types of EPM work. The labor (non-labor) forecast consists of costs for internal resources for project management, planning, permitting, installation, configuration, and close out.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor, however non-labor also includes external resources and material costs.

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21574.0
 Category: T. Control Center Modernization (CCM) Project
 Category-Sub: 1. Control Center Modernization (CCM) Project
 Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other

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	0	0	0	251	1,423	1,649	251	1,423	1,649
Non-Labor	Zero-Based	0	0	0	198	1,812	2,431	198	1,812	2,431
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		0	0	0	449	3,235	4,080	449	3,235	4,080
FTE	Zero-Based	0.0	0.0	0.0	2.8	15.8	18.3	2.8	15.8	18.3

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21574.0
 Category: T. Control Center Modernization (CCM) Project
 Category-Sub: 1. Control Center Modernization (CCM) Project
 Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (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
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	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
Vacation & Sick (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
Escalation to 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
Recorded-Adjusted (Constant 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

* 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.

San Diego Gas & Electric Company
 2024 GRC - REVISED
 Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21574.0
 Category: T. Control Center Modernization (CCM) Project
 Category-Sub: 1. Control Center Modernization (CCM) Project
 Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other

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 215740**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21574.0
 Category: T. Control Center Modernization (CCM) Project
 Category-Sub: 1. Control Center Modernization (CCM) Project
 Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other
 Workpaper Detail: 215740.001 - RAMP: SDG&E-Risk-9, C17 Control Center Modernization (CCM)
 In-Service Date: Not Applicable

Description:

The Gas Ops Control Center Project will enhance distribution field assets by installing control and real time pressure monitoring capabilities.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		251	1,423	1,649
Non-Labor		198	1,812	2,431
NSE		0	0	0
	Total	449	3,235	4,080
FTE		2.8	15.8	18.3

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21574.0
 Category: T. Control Center Modernization (CCM) Project
 Category-Sub: 1. Control Center Modernization (CCM) Project
 Workpaper Group: 215740 - Gas Ops Control Center Project Distr Reg Station & Other
 Workpaper Detail: 215740.001 - RAMP: SDG&E-Risk-9, C17 Control Center Modernization (CCM)

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C17
 RAMP Line Item Name: CCM Distribution Field Asset Real Time Monitoring and Control Site Installations/Upgrades & New Control Room 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	449	3,235	4,080	7,764	12,419	17,939

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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 SCADA Enhanced Sites	0.00	0.00	2.00	3.00	5.00	0.00	0.00

Work Unit Changes from RAMP:

N/A

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 215740

San Diego Gas & Electric Company
 2024 GRC - REVISED
 Capital Workpapers

CCM Summary - Distribution Witness Area (SDG&E)

Capital Forecast

	2022	2023	2024	Total
Labor	\$ 250,800.00	\$ 1,422,851.00	\$ 1,648,708.00	\$ 3,322,359.00
Non-Labor	\$ 198,000.00	\$ 1,811,474.00	\$ 2,431,285.00	\$ 4,440,759.00
Total	\$ 448,800.00	\$ 3,234,325.00	\$ 4,079,993.00	\$ 7,763,118.00
FTE	2.8	15.8	18.3	

**\$90k used for Distribution FTE calculation*

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

CCM - DRS: Core & Non-Core Meter (SDGE)					
Unit Count					
	2022	2023	2024	2022-2024 Total	2025-2028 Total
Core	0	250	250	500	0
Non-Core - EVC	0	58	58	116	6
Non-Core - Flow computers existing equipment	0	11	12	23	0
Cost Per Unit Breakdown					
Cost Per Site: Project Management & Field Engineering					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Project Management & Commissioning	\$	225.00
Capital	Non-Labor	External Resources	Contractor Services	\$	386.00
				Total Unit Cost	\$ 611.00
Cost Per Site: Core					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Field Installation and verification	\$	360.00
Capital	Labor	Internal Resources	Back-office verification	\$	180.00
Capital	Non-Labor	Materials & Expenses	Communication module replacement & materials	\$	120.00
				Total Unit Cost	\$ 660.00
Cost Per Site: Non-Core - EVCs					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	QA, Field Installation, Configuration, and Verification	\$	864.00
Capital	Labor	Internal Resources	Back-office configuration and verification	\$	1,440.00
Capital	Labor	Internal Resources	EVC Replacement	\$	2,128.00
Capital	Non-Labor	Materials & Expenses	Mounting/fittings, conduit & telecommunications	\$	405.00
				Total Unit Cost	\$ 4,837.00
Cost Per Site: Non-Core - Flow computers using existing equipment					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Back-office verification	\$	360.00
Capital	Labor	Internal Resources	Field verification	\$	324.00
				Total Unit Cost	\$ 684.00
Capital Forecast					
	2022	2023	2024	Total	
Core units by year	0	250	250	500	
Non-core EVC units by year	0	58	58	116	
Non-core flow computer (existing equipment) by year	0	11	12	23	
Total by year	0	319	320	639	
	2022	2023	2024	Total	
Labor	\$ -	\$ 471,355.00	\$ 472,264.00	\$ 943,619.00	
Non-Labor	\$ -	\$ 176,624.00	\$ 177,010.00	\$ 353,634.00	
Total	\$ -	\$ 647,979.00	\$ 649,274.00	\$ 1,297,253.00	
Assumptions					
Bringing core and non-core customer meter data into the control room will provide additional insight into the state of the Distribution system as well as provide additional information for advanced gas forecasting					
EVCs will require the replacement and mounting of a new EVC component, (SDGE EVC project scope differs from SoCalGas, which is reflected in the unit costs)					
80% of Flow computers will not require replacement/upgrade of existing field equipment and are included in the 2022-2024 forecast					
20% of Flow computers will require replacement/upgrade of existing field equipment and are not included in the 2022-2024 forecast					
Identified need for more focused SDGE project management and field engineering activities					

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

CCM Distribution Regulator Station (DRS) Enhancements - Control Sites & Monitor Only Sites (SDG&E)

Unit Count

	2022	2023	2024	2022-2024 Total	2025-2028
SCADA Enhanced Sites	0	2	3	5	15

Cost Per Unit Breakdown

Cost Per Site: Project Management & Field Engineering

COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST
Capital	Labor	Internal Resources	Project Management & Commissioning	\$ 64,948.00
Capital	Non-Labor	External Resources	Contractor Services	\$ 18,975.00
Capital	Non-Labor	Materials & Expenses	Travel, Parking, Overnights	\$ 450.00
Total Unit Cost				\$ 84,373.00

Cost per DRS Control site

COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST
Capital	Labor	Internal Resources	Planning, Permitting, Contracting	\$ 75,000.00
Capital	Labor	Internal Resources	Inspections	\$ 27,500.00
Capital	Labor	Internal Resources	Construction & Engineering oversight	\$ 17,500.00
Capital	Labor	Internal Resources	Documentation & Close-out	\$ 40,000.00
Capital	Non-Labor	External Resources	Engineering Design	\$ 75,000.00
Capital	Non-Labor	External Resources	Mechanical construction	\$ 270,000.00
Capital	Non-Labor	External Resources	Electrical construction	\$ 100,000.00
Capital	Non-Labor	External Resources	Inspections	\$ 27,500.00
Capital	Non-Labor	External Resources	Construction & Engineering oversight	\$ 17,500.00
Capital	Non-Labor	Materials & Expenses	Mechanical, electrical, & telecommunications equipment	\$ 110,000.00
Total Unit Cost				\$ 760,000.00

Capital Forecast

Control sites		2022	2023	2024	Total
Labor	Internal Labor	\$ -	\$ 449,896.00	\$ 674,844.00	\$ 1,124,740.00
	External Resources	\$ -	\$ 1,017,950.00	\$ 1,526,925.00	\$ 2,544,875.00
Non-Labor	Materials & Expenses	\$ -	\$ 220,900.00	\$ 331,350.00	\$ 552,250.00
	Total NL	\$ -	\$ 1,238,850.00	\$ 1,858,275.00	\$ 3,097,125.00
Total	Total	\$ -	\$ 1,688,746.00	\$ 2,533,119.00	\$ 4,221,865.00

Assumptions

Cost assumptions leveraged refinement of costs from pilot sites to determine per unit cost
Multiple mechanical and electrical estimates provided by vendors and incorporated into per unit cost
Total cost calculation uses blended rate of 5 control sites (\$760K/unit)
FTE Calculation used \$90k
Deployment schedule consistent with projects requiring specialized planning, permitting, and construction
Control sites have a 16-month Engineering, Planning & Permitting duration; Monitoring sites have a 10-month Engineering, Planning & Permitting duration

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

CCM Distribution - EPM Enhancement (SDG&E)					
Unit Count					
	2022	2023	2024	2022-2024 Total	2025-2028 Total
EPM Installation	60	120	120	300	100

Cost Per Unit Breakdown					
Cost Per Site: Project Management & Field Engineering					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Project Management & Commissioning	\$	2,680.00
Capital	Non-Labor	Materials & Expenses	Materials and Misc.	\$	80.00
Total Unit Cost				\$	2,760.00

Cost Per SDG&E EPM replacement					
COST TYPE	LABOR/NON-LABOR	CLASSIFICATION	DESCRIPTION	COST	
Capital	Labor	Internal Resources	Planning and admin	\$	240.00
Capital	Labor	Internal Resources	Permitting and siting	\$	300.00
Capital	Labor	Internal Resources	QA/Test/Configure	\$	240.00
Capital	Labor	Internal Resources	Installation, Commissioning	\$	480.00
Capital	Labor	Internal Resources	Host system configuration and communication confirmation	\$	120.00
Capital	Labor	Internal Resources	Documentation and close-out	\$	120.00
Capital	Non-Labor	Materials & Expenses	Dual transducer EPM, enclosure, and telecom equipment	\$	3,220.00
Total Unit Cost				\$	4,720.00

Capital Forecast					
	2022	2023	2024	Total	
Labor	\$ 250,800.00	\$ 501,600.00	\$ 501,600.00	\$	1,254,000.00
Non-Labor	\$ 198,000.00	\$ 396,000.00	\$ 396,000.00	\$	990,000.00
Total	\$ 448,800.00	\$ 897,600.00	\$ 897,600.00	\$	2,244,000.00

Assumptions
<p>EPM replacements at SDGE are going to be fully funded and project managed by the CCM project.</p> <p>This funding is for the cost to replace all EPMs at SDGE in order to upgrade their equipment ahead of communication with our Gas Control room.</p> <p>Vendor pricing provided to support non-labor cost estimates</p> <p>Identified need for more focused SDGE project management and field engineering activities</p>

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: U. Curb Valve Replacement
Workpaper: 215750

Summary for Category: U. Curb Valve Replacement

In 2021\$ (000)				
Adjusted-Recorded		Adjusted-Forecast		
2021		2022	2023	2024
Labor	0	100	175	175
Non-Labor	0	900	1,575	1,575
NSE	0	0	0	0
Total	0	1,000	1,750	1,750
FTE	0.0	0.9	1.6	1.6

215750 Curb Valve Replacements

Labor	0	100	175	175
Non-Labor	0	900	1,575	1,575
NSE	0	0	0	0
Total	0	1,000	1,750	1,750
FTE	0.0	0.9	1.6	1.6

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
215750 - Curb Valve Replacements**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21575.0
 Category: U. Curb Valve Replacement
 Category-Sub: 1. Curb Valve Replacement
 Workpaper Group: 215750 - Curb Valve Replacements

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	0	0	0	0	100	175	175
Non-Labor	Zero-Based	0	0	0	0	0	900	1,575	1,575
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	1,000	1,750	1,750
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.9	1.6	1.6

Business Purpose:

The Curb Valve Replacement project will survey the gas system for installed curb valves, prioritize their replacement based on inaccessibility issues and schedule the replacement of these valves with excess flow valve (EFVs).

Physical Description:

All newly installed or replaced service lines with installed meter capacity exceeding 1000 SCFH, must have installed either a manual service line shut-off valve (a "curb" valve or other manually operated valve) or an excess flow valve (EFV). This mitigation project will survey the gas system for installed curb valves, prioritize their replacement based on inaccessibility issues and schedule the replacement of these valves with EFVs.

Project Justification:

Prioritized Curb valves will be replaced with EFVs. Because EFVs are automated and do not require manual operation, the response time to shut off a curb valve is much longer than the auto-shut off response time of an EFV. In addition, EFVs are not subject to street and sidewalk location inaccessibility issues. This will significantly mitigate risk to the public and the affected customer by decreasing the response time to shut down a customer service, when required, due to damage of the service line from outside forces

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 21575.0
Category: U. Curb Valve Replacement
Category-Sub: 1. Curb Valve Replacement
Workpaper Group: 215750 - Curb Valve Replacements

Forecast Methodology:

Labor - Zero-Based

Budget code 21575 is a newly created budget code for the purpose of collecting expenses and for forecasting costs for the replacement of curb meter valves with excess flow valves in the distribution pipeline system. Since work activity began only recently, there is no adjusted-recorded expense history. Therefore, a zero based forecast methodology was selected for forecasting labor and non-labor expenses anticipated in the forecast years.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21575.0
 Category: U. Curb Valve Replacement
 Category-Sub: 1. Curb Valve Replacement
 Workpaper Group: 215750 - Curb Valve 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	Zero-Based	0	0	0	100	175	175	100	175	175
Non-Labor	Zero-Based	0	0	0	900	1,575	1,575	900	1,575	1,575
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		0	0	0	1,000	1,750	1,750	1,000	1,750	1,750
FTE	Zero-Based	0.0	0.0	0.0	0.9	1.6	1.6	0.9	1.6	1.6

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21575.0
 Category: U. Curb Valve Replacement
 Category-Sub: 1. Curb Valve Replacement
 Workpaper Group: 215750 - Curb Valve Replacements

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (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
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	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
Vacation & Sick (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
Escalation to 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
Recorded-Adjusted (Constant 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

* 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.

San Diego Gas & Electric Company
 2024 GRC - REVISED
 Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21575.0
 Category: U. Curb Valve Replacement
 Category-Sub: 1. Curb Valve Replacement
 Workpaper Group: 215750 - Curb Valve 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	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 215750**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21575.0
 Category: U. Curb Valve Replacement
 Category-Sub: 1. Curb Valve Replacement
 Workpaper Group: 215750 - Curb Valve Replacements
 Workpaper Detail: 215750.001 - RAMP: SDG&E-Risk-9, M03 Replace Curb Valves with EFV s
 In-Service Date: Not Applicable

Description:

This budget code provides for replacement of curb valves with excess flow valves (EFV). Because EFVs are automated and do not require manual operation, the response time to shut off a curb valve is much longer than the auto-shut off response time of an EFV.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		100	175	175
Non-Labor		900	1,575	1,575
NSE		0	0	0
	Total	1,000	1,750	1,750
FTE		0.9	1.6	1.6

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 21575.0
 Category: U. Curb Valve Replacement
 Category-Sub: 1. Curb Valve Replacement
 Workpaper Group: 215750 - Curb Valve Replacements
 Workpaper Detail: 215750.001 - RAMP: SDG&E-Risk-9, M03 Replace Curb Valves with EFV s

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)

RAMP Line Item ID: M03

RAMP Line Item Name: Replace Curb Valves with EFVs

Tranche(s): Tranche1: MP Main & Service Plastic

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	1,000	1,750	1,750	4,500	7,225	8,745

Cost Estimate Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

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	67.00	117.00	117.00	301.00	361.00	437.00

Work Unit Changes from RAMP:

The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	11.000	61.000

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 (Ex. SCG-03/SDG&E-03, Chapter 2)

Supplemental Workpapers for Workpaper Group 215750

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-005

San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella

Supplemental Workpaper for RAMP Capital Budget Codes

[A]	[B]	[C]	[D]	Forecast (Thousands of 2021\$)					
				[E]	[F] [ExD]	[G]	[H] [GxD]	[I]	[J] [IxD]
Workpaper Detail:	RAMP Activity	Unit	Unit Cost	Forecast Units	Forecast	Forecast Units	Forecast	Forecast Units	Forecast
19564	Underperforming Steel Replacement Program – 1934-1965 Vintage	<i># of feet replaced</i>	\$0.27	11,111	\$3,000	11,111	\$3,000	11,111	\$3,000
19565	Underperforming Steel Replacement Program – Thread Main (Pre-1934 Vintage)	<i># of feet replaced</i>	\$0.32	21,875	\$7,000	21,875	\$7,000	21,875	\$7,000
00514	Underperforming Steel Replacement Program – Other Steel (Post 1965 vintage)	<i># of feet replaced</i>	\$0.16	18,750	\$3,000	18,750	\$3,000	18,750	\$3,000
19566	Early Vintage Program (Components) – Dresser Mechanical Coupling Removal	<i># of projects</i>	\$145.74	14	\$2,000	14	\$2,000	14	\$2,000
19567	Early Vintage Program (Components) – Oil Drip Piping Removal	<i># of projects</i>	\$125.00	12	\$1,500	12	\$1,500	12	\$1,500
19568	Piping in Vaults Replacement Program	<i># of projects</i>	\$187.50	8	\$1,500	8	\$1,500	8	\$1,500
19569	Early Vintage Program (Components) – Removal of Closed Valves between High/Medium Pressure Zones	<i># of projects</i>	\$150.00	10	\$1,500	10	\$1,500	10	\$1,500
21575	Curb Valve Replacements	<i># of projects</i>	\$15.00	67	\$1,000	117	\$1,750	117	\$1,750

Notes:

Amounts include vacation and sick leave.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: V. CNG Station Upgrades
Workpaper: 145530

Summary for Category: V. CNG Station Upgrades

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	0	3	3	3
Non-Labor	0	134	134	134
NSE	0	0	0	0
Total	<u>0</u>	<u>137</u>	<u>137</u>	<u>137</u>
FTE	0.0	0.1	0.1	0.1

145530 CNG STATION UPGRADES

Labor	0	3	3	3
Non-Labor	0	134	134	134
NSE	0	0	0	0
Total	<u>0</u>	<u>137</u>	<u>137</u>	<u>137</u>
FTE	0.0	0.1	0.1	0.1

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
145530 - CNG STATION UPGRADES**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 14553.0
 Category: V. CNG Station Upgrades
 Category-Sub: 1. CNG Station Upgrades
 Workpaper Group: 145530 - CNG STATION UPGRADES

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	12	0	0	0	0	3	3	3
Non-Labor	5-YR Average	604	66	0	0	0	134	134	134
NSE	5-YR Average	0	0	0	0	0	0	0	0
Total		616	66	0	0	0	137	137	137
FTE	5-YR Average	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

Business Purpose:

Provides for labor, services and materials to upgrades needed to maintain a natural gas alternative fueling station infrastructure for use by company fleet vehicles and the public.

Physical Description:

This budget code provides funding to maintain existing Compressed Natural Gas (CNG) station Infrastructure. This infrastructure includes a roof-canopy structure, facility lighting, card readers, dispensers, security, and signage; CNG equipment including compressors, dryers, controllers, valves, piping, and storage vessels; and engineering, design, fabrication, and construction.

Project Justification:

Budget code 14553 supports the California clean transportation initiative by maintaining existing stations to serve existing customer base.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: 14553.0
Category: V. CNG Station Upgrades
Category-Sub: 1. CNG Station Upgrades
Workpaper Group: 145530 - CNG STATION UPGRADES

Forecast Methodology:

Labor - 5-YR Average

Facility upgrades or improvements under this budget code can vary widely in scope and expense. Historical expense would provide an insight into maintenance required to maintain the existing infrastructure. Therefore a five year average forecast methodology was selected for forecasting labor and non-labor expenses anticipated in the forecast years.

Non-Labor - 5-YR Average

See description above which applies to both Labor and Non-Labor

NSE - 5-YR Average

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 14553.0
 Category: V. CNG Station Upgrades
 Category-Sub: 1. CNG Station Upgrades
 Workpaper Group: 145530 - CNG STATION UPGRADES

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	2	2	2	1	1	1	3	3	3
Non-Labor	5-YR Average	134	134	134	0	0	0	134	134	134
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		136	136	136	1	1	1	137	137	137
FTE	5-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 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 14553.0
 Category: V. CNG Station Upgrades
 Category-Sub: 1. CNG Station Upgrades
 Workpaper Group: 145530 - CNG STATION UPGRADES

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	8	0	0	0	0
Non-Labor	451	52	0	0	0
NSE	0	0	0	0	0
Total	459	52	0	0	0
FTE	0.0	0.0	0.0	0.0	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	8	0	0	0	0
Non-Labor	451	52	0	0	0
NSE	0	0	0	0	0
Total	459	52	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Vacation & Sick (Nominal \$)					
Labor	1	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	1	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Escalation to 2021\$					
Labor	3	0	0	0	0
Non-Labor	153	14	0	0	0
NSE	0	0	0	0	0
Total	156	14	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	12	0	0	0	0
Non-Labor	604	66	0	0	0
NSE	0	0	0	0	0
Total	616	66	0	0	0
FTE	0.0	0.0	0.0	0.0	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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 14553.0
 Category: V. CNG Station Upgrades
 Category-Sub: 1. CNG Station Upgrades
 Workpaper Group: 145530 - CNG STATION UPGRADES

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 145530**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: 14553.0
 Category: V. CNG Station Upgrades
 Category-Sub: 1. CNG Station Upgrades
 Workpaper Group: 145530 - CNG STATION UPGRADES
 Workpaper Detail: 145530.001 - Kearny CNG Replacement/Hydrogen Integration
 In-Service Date: 12/31/2024

Description:

Provides for labor, services and materials to improve or upgrade a natural gas alternative fueling station infrastructure for use by company fleet vehicles and the public.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		3	3	3
Non-Labor		134	134	134
NSE		0	0	0
	Total	137	137	137
FTE		0.1	0.1	0.1

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Category: W. Local Engineering Pool
Workpaper: G09020

Summary for Category: W. Local Engineering Pool

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	6,090	8,531	9,363	9,378
Non-Labor	17,675	14,459	15,749	15,196
NSE	0	0	0	0
Total	23,765	22,990	25,112	24,574
FTE	62.6	72.1	78.9	79.3

G09020 Local Engineering Pool - Gas

Labor	6,090	8,531	9,363	9,378
Non-Labor	17,675	14,459	15,749	15,196
NSE	0	0	0	0
Total	23,765	22,990	25,112	24,574
FTE	62.6	72.1	78.9	79.3

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
G09020 - Local Engineering Pool - Gas**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

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

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2017	2018	2019	2020	2021	2022	2023	2024
Labor	Zero-Based	8,043	5,898	7,469	9,212	6,090	8,531	9,363	9,378
Non-Labor	Zero-Based	7,108	13,995	10,844	18,922	17,675	14,459	15,749	15,196
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		15,151	19,892	18,313	28,134	23,765	22,990	25,112	24,574
FTE	Zero-Based	71.8	52.5	69.8	85.4	62.6	72.1	78.9	79.3

Business Purpose:

This budget code represents the forecasted costs associated with the Gas Distribution Local Engineering (LE) Pool. Certain costs are incurred by capital projects that originate from central activities which are subsequently distributed to those capital projects. These central activity costs are also called 'pooled' or 'indirect' costs.

Physical Description:

This budget code is comprised of labor and non-labor costs associated with technical planning for capital projects. This includes production of project drawings, acquiring and managing third party services, and estimating work order costs. This budget code also includes Region Engineering personnel's percentage allocation of labor and non-labor costs associated with capital projects as well as other engineering functions including pipeline network analysis, development of pipeline project specifications, developing construction requirements, and analysis of the construction impact on the gas distribution system.

Project Justification:

Design and engineering personnel are a necessity for the development of safe and cost effective construction specifications for new gas distribution infrastructure. To facilitate an equitable distribution of indirect costs to all capital projects, these costs are pooled and redistributed to the various capital project budget codes on a monthly basis.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: G0902.0
Category: W. Local Engineering Pool
Category-Sub: 1. Local Engineering Pool
Workpaper Group: G09020 - Local Engineering Pool - Gas

Forecast Methodology:

Labor - Zero-Based

A zero based forecasting methodology was selected for this budget code. The forecast was developed by evaluating historically the Local Engineering (LE) pool with respect to the total direct component for labor and non-labor across all infrastructure related construction budget code categories except for the Meter and Regulator Materials (BC 502) and the Tools and Equipment (BC 506) budget codes. This produced an annual relationship of the percentage of the LE to total direct capital expenditures. An average of this ratio from 2017 through 2021 was used to forecast capital expenses for Local Engineering for the forecast years 2022, 2023, and TY2024.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

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	7,538	8,273	7,972	993	1,090	1,406	8,531	9,363	9,378
Non-Labor	Zero-Based	14,318	15,714	15,141	141	35	55	14,459	15,749	15,196
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		21,856	23,987	23,113	1,134	1,125	1,461	22,990	25,112	24,574
FTE	Zero-Based	62.8	68.9	66.4	9.3	10.0	12.9	72.1	78.9	79.3

Forecast Adjustment Details

Year	Labor	NLbr	NSE	Total	FTE
2022	28	11	0	39	0.3
Explanation:	A. Night Welding Class - Incremental costs for a Night Welding Class – A night welding class will be established to provide preparation instruction as a pre-school for the day welding classes. Labor charges to this class will be 70% capital. Labor charges are \$40K/class X 1 class X 0.70 = \$28K each year in 2022, 2023 and TY2024. Non-labor charges for class expenses are estimated to be 1 X \$15K X 0.70=\$ 11K for 2022 and 1 X \$35K X 0.70=\$25K each year for 2023, TY2024 and thereafter.				
2022	375	30	0	405	3.1
Explanation:	B. Capital Project Mgmt - Add (3) PMs, one for H2 and 2 for Capital Projects - Incremental costs are required for Capital Project Management – Three Project Managers will be added - one for hydrogen blending in natural gas pipeline systems and two as a result of capital project growth will be added starting in 2022. These positions will provide project management support across the project lifecycle for capital gas distribution projects. Project Managers will be responsible for project initiation, planning, executing, monitoring, and closing. These positions will charge 100% of their time to capital. Labor expense is estimated to be 3 X \$125K = \$375K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 3 X \$10K = \$30K in 2022 for one year only.				
2022	180	20	0	200	2.0
Explanation:	G. QA/Compliance (1) Field Ops QA Inspector - Incremental costs for QA/Compliance - One Field Ops QA Inspector will be added starting in 2022 to review the work done by the company Gas Field Operations personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance. This position will charge 50% of their time to capital. Labor expense is estimated to be 1 X \$100K X 0.50= \$50K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K X 0.5=\$5K in 2022 for one year only.				
Explanation:	C. Capital Construction Growth - Add (2) FUS for planning and design - Incremental costs are required for Capital Construction Growth – Two Field Utility Specialists will be added starting in 2022 to support project managers in the management and coordination of all required activities associated with the completion of capital projects. This includes project scoping, cost estimation/budgeting, resource coordination, ad project closeout. These positions will charge 100% of their time to capital. Labor expense is estimated to be 2 X \$90K = \$180K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 2 X \$10K = \$20K in 2022 for one year only.				

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

Year	Labor	NLbr	NSE	Total	FTE
2022	67	5	0	72	0.7
Explanation:	H. QA/Compliance - (1) CP QA Technical Specialist - Incremental costs for QA/Compliance – One CP QA Technical Specialist will be added starting in 2022 to review the work done by the company System Protection personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance and verify training effectiveness. This position will charge 67% of their time to O&M. Labor expense is estimated to be 1 X \$100K X 0.67= \$67K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$5K =\$5K in 2022 for one year only.				
2022	108	10	0	118	0.9
Explanation:	E. Add (3) engineers - (1) H2 Projects, (2) Increased Capital work - Incremental costs are required for Engineering Additions - Three Engineer I/II will be added beginning in TY2024 for (2) for implementing 3D M&R facility design and support GOCC monitoring and control retrofit projects at regulator station and pressure monitoring sites and (1) to focus on hydrogen blending in natural gas pipeline systems. These positions will charge 90% of their time to O&M. Labor expense is estimated to be 1 X \$120K X 0.90= \$108K each year beginning in 2022 and for 2023. Then 2 more added in TY2024 = 3 X 120K X 0.9 = \$324K in TY 2024 and thereafter. Non-Labor expense is estimated to be = 1 X \$10K =\$10K in 2022 for one year only then 2 X \$10K = \$20K in TY2024 only.				
2022	97	10	0	107	0.8
Explanation:	F. RAMP - Incremental - Risk Chapter 9, GGIS Growth - Two GGIS Specialist/Technicians will be added one starting in 2022 and the second one beginning in 2023 to support the growing GIS workload as a result of the increased capital and other work being performed and recorded in GIS. Over the recent past, the GGIS department has seen a 185% increase in work orders they are responsible to map and close. These positions will charge 77% of their time to capital. Labor expense is estimated to be 1 X \$126K X 0.77= \$97K for 2022 and 2 X \$126K X 0.77 = \$194K each year for 2023 and TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K =\$10K each year in 2022 and in 2023 only.				
2022	88	10	0	98	1.0
Explanation:	D. Add (2) Construction Management Advisors - Construction Management Advisors– Incremental expenses are required for two Advisors to be added, one Construction Management Specialist starting in 2022 and one Document Control Advisor starting in 2024. These advisors will provide support for capital construction activities on capital projects, as well as manage and track records and documents, ensuring document accuracy, storage, and accessibility. These positions will charge 100% of their time to capital. Labor expense is estimated to be 1 X \$88K = \$88K each year for 2022 and 2023 and (1 X \$88K + 1 X \$100K = \$188K) for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K =\$10K each year in 2022 and TY2024 only.				
2022	0	40	0	40	0.0
Explanation:	I. Certified Crane Operator Training - Incremental costs for Certified Crane Operator Training –Certified Crane Operator classes will be required to certify Pipeline Operations personnel for operation of the crane on the Pipeline Operations large pipeline maintenance equipment deployment truck. Non-labor charges for classes are estimated to be 20 (students) X \$2000/student =\$40K for 2022 only. There are no Labor expenses for this Crane training.				
2022 Total	993	141	0	1,134	9.3
2023	28	25	0	53	0.3

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

Year	Labor	NLbr	NSE	Total	FTE
Explanation:	A. Night Welding Class - Incremental costs for a Night Welding Class – A night welding class will be established to provide preparation instruction as a pre-school for the day welding classes. Labor charges to this class will be 70% capital. Labor charges are \$40K/class X 1 class X 0.70 = \$28K each year in 2022, 2023 and TY2024. Non-labor charges for class expenses are estimated to be 1 X \$15K X 0.70=\$ 11K for 2022 and 1 X \$35K X 0.70=\$25K each year for 2023, TY2024 and thereafter.				
2023	375	0	0	375	3.1
Explanation:	B. Capital Project Mgmt - Add (3) PMs, one for H2 and 2 for Capital Projects - Incremental costs are required for Capital Project Management – Three Project Managers will be added - one for hydrogen blending in natural gas pipeline systems and two as a result of capital project growth will be added starting in 2022. These positions will provide project management support across the project lifecycle for capital gas distribution projects. Project Managers will be responsible for project initiation, planning, executing, monitoring, and closing. These positions will charge 100% of their time to capital. Labor expense is estimated to be 3 X \$125K = \$375K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 3 X \$10K =\$30K in 2022 for one year only.				
2023	194	10	0	204	1.5
Explanation:	F. RAMP - Incremental - Risk Chapter 9, GGIS Growth - Two GGIS Specialist/Technicians will be added one starting in 2022 and the second one beginning in 2023 to support the growing GIS workload as a result of the increased capital and other work being performed and recorded in GIS. Over the recent past, the GGIS department has seen a 185% increase in work orders they are responsible to map and close. These positions will charge 77% of their time to capital. Labor expense is estimated to be 1 X \$126K X 0.77= \$97K for 2022 and 2 X \$126K X 0.77 = \$194K each year for 2023 and TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K =\$10K each year in 2022 and in 2023 only.				
2023	180	0	0	180	2.0
Explanation:	C. Capital Construction Growth - Add (2) FUS for planning and design - Incremental costs are required for Capital Construction Growth – Two Field Utility Specialists will be added starting in 2022 to support project managers in the management and coordination of all required activities associated with the completion of capital projects. This includes project scoping, cost estimation/budgeting, resource coordination, ad project closeout. These positions will charge 100% of their time to capital. Labor expense is estimated to be 2 X \$90K = \$180K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 2 X \$10K =\$20K in 2022 for one year only.				
2023	67	0	0	67	0.7
Explanation:	H. QA/Compliance - (1) CP QA Technical Specialist - Incremental costs for QA/Compliance – One CP QA Technical Specialist will be added starting in 2022 to review the work done by the company System Protection personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance and verify training effectiveness. This position will charge 67% of their time to O&M. Labor expense is estimated to be 1 X \$100K X 0.67= \$67K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$5K =\$5K in 2022 for one year only.				
2023	108	0	0	108	0.9

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

Year	Labor	NLbr	NSE	Total	FTE
Explanation:	E. Add (3) engineers - (1) H2 Projects, (2) Increased Capital work - Incremental costs are required for Engineering Additions - Three Engineer I/II will be added beginning in TY2024 for (2) for implementing 3D M&R facility design and support GOCC monitoring and control retrofit projects at regulator station and pressure monitoring sites and (1) to focus on hydrogen blending in natural gas pipeline systems. These positions will charge 90% of their time to O&M. Labor expense is estimated to be 1 X \$120K X 0.90= \$108K each year beginning in 2022 and for 2023. Then 2 more added in TY2024 = 3 X 120K X 0.9 = \$324K in TY 2024 and thereafter. Non-Labor expense is estimated to be = 1 X \$10K =\$10K in 2022 for one year only then 2 X \$10K = \$20K in TY2024 only.				
2023	88	0	0	88	1.0
Explanation:	D. Add (2) Construction Management Advisors - Construction Management Advisors– Incremental expenses are required for two Advisors to be added, one Construction Management Specialist starting in 2022 and one Document Control Advisor starting in 2024. These advisors will provide support for capital construction activities on capital projects, as well as manage and track records and documents, ensuring document accuracy, storage, and accessibility. These positions will charge 100% of their time to capital. Labor expense is estimated to be 1 X \$88K = \$88K each year for 2022 and 2023 and (1 X \$88K + 1 X \$100K = \$188K) for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K =\$10K each year in 2022 and TY2024 only.				
2023	50	0	0	50	0.5
Explanation:	G. QA/Compliance (1) Field Ops QA Inspector - Incremental costs for QA/Compliance - One Field Ops QA Inspector will be added starting in 2022 to review the work done by the company Gas Field Operations personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance. This position will charge 50% of their time to capital. Labor expense is estimated to be 1 X \$100K X 0.50= \$50K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K X 0.5=\$5K in 2022 for one year only.				
2023 Total	1,090	35	0	1,125	10.0
2024	28	25	0	53	0.3
Explanation:	A. Night Welding Class - Incremental costs for a Night Welding Class – A night welding class will be established to provide preparation instruction as a pre-school for the day welding classes. Labor charges to this class will be 70% capital. Labor charges are \$40K/class X 1 class X 0.70 = \$28K each year in 2022, 2023 and TY2024. Non-labor charges for class expenses are estimated to be 1 X \$15K X 0.70=\$ 11K for 2022 and 1 X \$35K X 0.70=\$25K each year for 2023, TY2024 and thereafter.				
2024	375	0	0	375	3.1
Explanation:	B. Capital Project Mgmt - Add (3) PMs, one for H2 and 2 for Capital Projects - Incremental costs are required for Capital Project Management – Three Project Managers will be added - one for hydrogen blending in natural gas pipeline systems and two as a result of capital project growth will be added starting in 2022. These positions will provide project management support across the project lifecycle for capital gas distribution projects. Project Managers will be responsible for project initiation, planning, executing, monitoring, and closing. These positions will charge 100% of their time to capital. Labor expense is estimated to be 3 X \$125K = \$375K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 3 X \$10K =\$30K in 2022 for one year only.				
2024	194	0	0	194	1.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

Year	Labor	NLbr	NSE	Total	FTE
Explanation:	F. RAMP - Incremental - Risk Chapter 9, GGIS Growth - Two GGIS Specialist/Technicians will be added one starting in 2022 and the second one beginning in 2023 to support the growing GIS workload as a result of the increased capital and other work being performed and recorded in GIS. Over the recent past, the GGIS department has seen a 185% increase in work orders they are responsible to map and close. These positions will charge 77% of their time to capital. Labor expense is estimated to be 1 X \$126K X 0.77= \$97K for 2022 and 2 X \$126K X 0.77 = \$194K each year for 2023 and TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K =\$10K each year in 2022 and in 2023 only.				
2024	180	0	0	180	2.0
Explanation:	C. Capital Construction Growth - Add (2) FUS for planning and design - Incremental costs are required for Capital Construction Growth – Two Field Utility Specialists will be added starting in 2022 to support project managers in the management and coordination of all required activities associated with the completion of capital projects. This includes project scoping, cost estimation/budgeting, resource coordination, ad project closeout. These positions will charge 100% of their time to capital. Labor expense is estimated to be 2 X \$90K = \$180K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 2 X \$10K =\$20K in 2022 for one year only.				
2024	67	0	0	67	0.7
Explanation:	H. QA/Compliance - (1) CP QA Technical Specialist - Incremental costs for QA/Compliance – One CP QA Technical Specialist will be added starting in 2022 to review the work done by the company System Protection personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance and verify training effectiveness. This position will charge 67% of their time to O&M. Labor expense is estimated to be 1 X \$100K X 0.67= \$67K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$5K =\$5K in 2022 for one year only.				
2024	324	20	0	344	2.7
Explanation:	E. Add (3) engineers - (1) H2 Projects, (2) Increased Capital work - Incremental costs are required for Engineering Additions - Three Engineer I/II will be added beginning in TY2024 for (2) for implementing 3D M&R facility design and support GOCC monitoring and control retrofit projects at regulator station and pressure monitoring sites and (1) to focus on hydrogen blending in natural gas pipeline systems. These positions will charge 90% of their time to O&M. Labor expense is estimated to be 1 X \$120K X 0.90= \$108K each year beginning in 2022 and for 2023. Then 2 more added in TY2024 = 3 X 120K X 0.9 = \$324K in TY 2024 and thereafter. Non-Labor expense is estimated to be = 1 X \$10K =\$10K in 2022 for one year only then 2 X \$10K = \$20K in TY2024 only.				
2024	188	10	0	198	2.1
Explanation:	D. Add (2) Construction Management Advisors - Construction Management Advisors– Incremental expenses are required for two Advisors to be added, one Construction Management Specialist starting in 2022 and one Document Control Advisor starting in 2024. These advisors will provide support for capital construction activities on capital projects, as well as manage and track records and documents, ensuring document accuracy, storage, and accessibility. These positions will charge 100% of their time to capital. Labor expense is estimated to be 1 X \$88K = \$88K each year for 2022 and 2023 and (1 X \$88K + 1 X \$100K = \$188K) for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K =\$10K each year in 2022 and TY2024 only.				
2024	50	0	0	50	0.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>
Explanation:	G. QA/Compliance (1) Field Ops QA Inspector - Incremental costs for QA/Compliance - One Field Ops QA Inspector will be added starting in 2022 to review the work done by the company Gas Field Operations personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance. This position will charge 50% of their time to capital. Labor expense is estimated to be 1 X \$100K X 0.50= \$50K each year for 2022, 2023 and for TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$10K X 0.5=\$5K in 2022 for one year only.				
2024 Total	1,406	55	0	1,461	12.9

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: G0902.0
Category: W. Local Engineering Pool
Category-Sub: 1. Local Engineering Pool
Workpaper Group: G09020 - Local Engineering Pool - Gas

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	3,884	3,940	4,394	5,409	7,069
Non-Labor	4,932	8,503	7,955	17,369	15,264
NSE	0	0	0	0	0
Total	8,816	12,443	12,349	22,778	22,334
FTE	46.6	44.9	49.1	56.7	71.4
Adjustments (Nominal \$)**					
Labor	1,342	108	1,015	1,605	-1,775
Non-Labor	372	2,557	1,024	-921	2,411
NSE	0	0	0	0	0
Total	1,714	2,665	2,040	684	636
FTE	15.0	0.1	11.0	16.8	-17.9
Recorded-Adjusted (Nominal \$)					
Labor	5,226	4,048	5,410	7,014	5,295
Non-Labor	5,304	11,060	8,979	16,449	17,675
NSE	0	0	0	0	0
Total	10,530	15,108	14,389	23,462	22,970
FTE	61.6	45.0	60.1	73.5	53.5
Vacation & Sick (Nominal \$)					
Labor	776	613	775	995	795
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	776	613	775	995	795
FTE	10.2	7.5	9.7	11.9	9.1
Escalation to 2021\$					
Labor	2,041	1,237	1,285	1,204	0
Non-Labor	1,804	2,935	1,865	2,473	0
NSE	0	0	0	0	0
Total	3,845	4,171	3,150	3,677	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	8,043	5,898	7,469	9,212	6,090
Non-Labor	7,108	13,995	10,844	18,922	17,675
NSE	0	0	0	0	0
Total	15,151	19,892	18,313	28,134	23,765
FTE	71.8	52.5	69.8	85.4	62.6

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
Years	2017	2018	2019	2020	2021	
Labor	1,342	108	1,015	1,605	-1,775	
Non-Labor	372	2,557	1,024	-921	2,411	
NSE	0	0	0	0	0	
Total	1,714	2,665	2,040	684	636	
FTE	15.0	0.1	11.0	16.8	-17.9	

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	1,342	10	0	1,352	15.0
Explanation:	This adjustment is to align the values with the correct LE OH data.				
2017	0	363	0	363	0.0
Explanation:	Transfer environmental services expenses out of Gas Engineering WP EN9030 to Gas Distribution WP G09020 where they should have been charged.				
2017 Total	1,342	372	0	1,714	15.0
2018	108	2,557	0	2,665	0.1
Explanation:	This adjustment is to align the values with the correct LE OH data.				
2018 Total	108	2,557	0	2,665	0.1
2019	1,015	1,024	0	2,040	11.0
Explanation:	This adjustment is to align the values with the correct LE OH data.				
2019 Total	1,015	1,024	0	2,040	11.0
2020	1,605	-921	0	684	16.8
Explanation:	This adjustment is to align the values with the correct LE OH data.				
2020 Total	1,605	-921	0	684	16.8
2021	-1,775	2,411	0	636	-17.9
Explanation:	This adjustment is to align the values with the correct LE OH data.				
2021 Total	-1,775	2,411	0	636	-17.9

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group G09020**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.001 - LE Pool - Base
 In-Service Date: 12/31/2024

Description:

Overhead pool base account for Local Engineering.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		6,324	6,984	6,607
Non-Labor		14,047	15,443	14,870
NSE		0	0	0
	Total	20,371	22,427	21,477
FTE		52.6	58.1	55.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.002 - RAMP: SDG&E-Risk-9, C13 Human Factors Mitigations Gas Handling Plans
 In-Service Date: Not Applicable

Description:

The Gas Handling Plan is developed, reviewed and signed by design, engineering, and construction supervisory personnel and is a site specific document with detailed procedures and graphical flow depictions describing the step-by-step processes, to “handle” the diversion of gas flow internal to the piping system.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		294	369	445
Non-Labor		0	0	0
NSE		0	0	0
	Total	294	369	445
FTE		2.5	3.1	3.7

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.002 - RAMP: SDG&E-Risk-9, C13 Human Factors Mitigations Gas Handling Plans

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-Risk-9 Incident Related to the Medium Pressure System (Excluding Dig-in)
 RAMP Line Item ID: C13
 RAMP Line Item Name: Human Factors Mitigations - Gas Handling Plans
 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	286	294	369	445	1,108	995	1,275

Cost Estimate Changes from RAMP:
N/A

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	430.00	430.00	452.00	516.00	1,398.00	1,890.00	2,415.00

Work Unit Changes from RAMP:
The forecast is outside the RAMP range due to changes in forecast assumptions since preparing RAMP filing.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:
An RSE was not calculated for this activity

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.003 - RAMP: SDG&E-CFF-6, New: Gas Geographic Information System Group
 In-Service Date: Not Applicable
 Description:

This is the base expense for the GIS department in Gas Distribution for pipeline records management.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		920	920	920
Non-Labor		271	271	271
NSE		0	0	0
	Total	1,191	1,191	1,191
FTE		7.7	7.7	7.7

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.003 - RAMP: SDG&E-CFF-6, New: Gas Geographic Information System Group

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-CFF-6 Records Management
 RAMP Line Item ID: New01
 RAMP Line Item Name: RAMP: SDG&E-CFF-6, New: Gas Geographic Information System Group
 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	1,191	1,191	1,191	1,191	3,573	0	0

Cost Estimate Changes from RAMP:

RAMP did not forecast a range for dollars for this CFF.

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 Reconciled work orders	2,957.00	3,000.00	3,000.00	3,000.00	9,000.00	0.00	0.00

Work Unit Changes from RAMP:

RAMP did not forecast a range for units for this CFF.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:

An RSE was not calculated for this activity

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.004 - Night Welding class
 In-Service Date: Not Applicable

Description:

A night welding class will be established to provide preparation instruction as a pre-school for the day welding classes.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		28	28	28
Non-Labor		11	25	25
NSE		0	0	0
	Total	39	53	53
FTE		0.3	0.3	0.3

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2024 GRC - REVISED
 Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.005 - Capital Project Management
 In-Service Date: Not Applicable

Description:

Project Managers will be added as a result of capital project growth starting in 2022.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		375	375	375
Non-Labor		30	0	0
NSE		0	0	0
	Total	405	375	375
FTE		3.1	3.1	3.1

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.006 - Capital Construction Growth
 In-Service Date: Not Applicable

Description:

Field Utility Specialists will be added as a result of capital growth starting in 2022.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		180	180	180
Non-Labor		20	0	0
NSE		0	0	0
	Total	200	180	180
FTE		2.0	2.0	2.0

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.007 - Construction Management Advisors
 In-Service Date: Not Applicable

Description:

Two construction advisors will be added as a result of capital growth , one Construction Management Specialist starting in 2022 and one Document Control Advisor starting in 2024.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		88	88	188
Non-Labor		10	0	10
NSE		0	0	0
	Total	98	88	198
FTE		1.0	1.0	2.1

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.008 - Engineering Additions
 In-Service Date: Not Applicable

Description:

Engineers will be added starting in 2022 as a result of capital growth and in support of our gas distribution system sustainability goals.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		108	108	324
Non-Labor		10	0	20
NSE		0	0	0
	Total	118	108	344
FTE		0.9	0.9	2.7

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.009 - RAMP: SDG&E-CFF-6, New: GGIS Growth
 In-Service Date: Not Applicable

Description:

One GIS Technician will be added in the Gas GGIS workgroup beginning in 2022 and another in 2023 to support an increase in projects requiring mapping and records work driven by new business activity. This is a RAMP activity.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		97	194	194
Non-Labor		10	10	0
NSE		0	0	0
	Total	107	204	194
FTE		0.8	1.5	1.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.009 - RAMP: SDG&E-CFF-6, New: GGIS Growth

RAMP Item # 1

RAMP Activity

RAMP Chapter: SDG&E-CFF-6 Records Management
 RAMP Line Item ID: New02
 RAMP Line Item Name: GGIS Growth
 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	107	204	194	505	0	0

Cost Estimate Changes from RAMP:

RAMP did not forecast a range for dollars for this CFF.

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 FTE	0.00	1.00	2.00	2.00	5.00	0.00	0.00

Work Unit Changes from RAMP:

RAMP did not forecast a range for units for this CFF.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE
Tranche 1	0.000	0.000

RSE Changes from RAMP:

An RSE was not calculated for this activity

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.010 - QA & Compliance: Field Ops and CP
 In-Service Date: Not Applicable

Description:

One Field Ops QA Inspector will be added starting in 2022 to review the work done by the company Gas Field Operations personnel, determining the effectiveness and adequacy of the processes and procedures used in normal operation and maintenance.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		117	117	117
Non-Labor		10	0	0
NSE		0	0	0
	Total	127	117	117
FTE		1.2	1.2	1.2

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0902.0
 Category: W. Local Engineering Pool
 Category-Sub: 1. Local Engineering Pool
 Workpaper Group: G09020 - Local Engineering Pool - Gas
 Workpaper Detail: G09020.011 - Certified Operator Crane Training
 In-Service Date: 12/31/2022

Description:

Certified Crane Operator classes will provide the necessary certification for our operations personnel to safely operate company owned equipment.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		0	0	0
Non-Labor		40	0	0
NSE		0	0	0
	Total	40	0	0
FTE		0.0	0.0	0.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group G09020

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-006
San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella
Supplemental Workpaper Calculations for Local Engineering Related To Capital

Local Engineering Pool Supplemental Workpaper (902)

	Historical (Thousands of 2021\$)					Forecast (Thousands of 2021\$)		
	2017	2018	2019	2020	2021	2022	2023	2024
500 (New Business)	11,075	20,326	8,669	7,246	8,613	12,085	13,042	9,928
501 Syst. Minor Adds., Reloc., and Retire	11,626	4,672	4,252	6,001	5,412	5,221	5,221	5,221
503 Pressure Betterment	1,112	182	16	304	1,610	528	528	528
505 Franchise and Freeway	21,586	7,989	5,632	4,960	6,734	5,776	5,776	5,776
507 Code Compliance	2,563	2,895	1,634	3,019	3,102	2,712	3,087	3,087
508 Replacements of Mains & Services	6,576	7,544	8,999	10,907	10,083	11,935	12,973	14,010
509 Cathodic Protection	3,403	4,434	5,991	4,223	4,410	4,492	4,492	4,492
510 Regulator Station Improvements	3,224	4,216	508	1,187	645	1,956	3,456	1,956
551 CP System Enhancement	6,949	10,331	1,629	1,436	2,919	1,995	1,995	1,995
514 Steel Replacement (Post-1965 Vintage)	13,027	7,517	2,710	1,212	4,208	3,000	3,000	3,000
14553 CNG Station Upgrades	616	66	-	(0)	-	136	136	136
19564 Steel Replacement (1934-1965 Vintage)	-	-	0	4,318	14,712	3,000	3,000	3,000
19565 Steel Replacement (Pre-1934 Vintage)	-	-	0	1,913	13,682	7,000	7,000	7,000
19566 Dresser Mechanical Couplings	-	-	0	1,600	3,935	2,000	2,000	2,000
19567 Oil Drip Piping Removal	-	-	0	222	3,668	1,500	1,500	1,500
19568 Buried Piping in Vaults	-	-	0	217	2,925	1,500	1,500	1,500
19569 Valves b/w HP/MP Pressure Systems	-	-	39	515	893	1,500	1,500	1,500
21574 Gas Ops Control Center	-	-	-	-	-	449	3,235	4,080
21575 Curb Valve Replacements	-	-	-	-	-	1,500	1,500	1,500
Total Construction Costs [A]	81,756	70,173	40,080	49,282	87,552	68,285	74,941	72,209
Local Engineering Pool Labor	8,043	5,898	7,469	9,212	6,090	7,538	8,273	7,972
Local Engineering Pool Non Labor	7,108	13,995	10,844	18,922	17,675	14,318	15,714	15,141
Historical Local Engineering [B]	15,151	19,892	18,313	28,134	23,765	21,857	23,987	23,113
Historical Local Engineering Ratio (B)/[A]	18.5%	28.3%	45.7%	57.1%	27.1%			

Notes:

Construction costs include only the work categories applicable to the Pool. Amounts include vacation and sick leave.

Historical Calculations (2021\$)	[C]	[D]
	Historical Five Year Total Applicable Capital	Historical Capital Local Engineering
2017	\$ 81,756	\$ 15,151
2018	\$ 70,173	\$ 19,892
2019	\$ 40,080	\$ 18,313
2020	\$ 49,282	\$ 28,134
2021	\$ 87,552	\$ 23,765
Five Year 2017-2021 Total	\$ 328,842	\$ 105,256

	[F]	[D/C]
Five Year 2017-2021 Average Ratio of Labor to Capital Construction Total		32.0%

	Labor	Non-Labor
Five Year LE Pool 2017-2021 Average Labor and Non-Labor	34%	66%

Forecast Data (Thousands of 2021\$)	[H] ([A])	[I] ([H]*[F])
	Forecasted Total Applicable Capital	Forecasted Local Engineering Expenditures (excludes incremental adds) ¹
2022	\$ 68,285	\$ 21,857
2023	\$ 74,941	\$ 23,987
2024	\$ 72,209	\$ 23,113

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: X. Gas Distribution OverHead Pool
 Workpaper: G09050

Summary for Category: X. Gas Distribution OverHead Pool

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	7,388	4,815	5,148	5,340
Non-Labor	709	527	547	553
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8,097	5,342	5,695	5,893
FTE	79.1	42.9	45.9	47.6

G09050 Department Overhead Pool - Gas

Labor	7,388	4,815	5,148	5,340
Non-Labor	709	527	547	553
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8,097	5,342	5,695	5,893
FTE	79.1	42.9	45.9	47.6

Note: Totals may include rounding differences.

Beginning of Workpaper Group
G09050 - Department Overhead Pool - Gas

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0905.0
 Category: X. Gas Distribution OverHead Pool
 Category-Sub: 1. Gas Distribution OverHead Pool
 Workpaper Group: G09050 - Department Overhead Pool - Gas

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	3,228	3,860	4,954	5,692	7,388	4,815	5,148	5,340
Non-Labor	Zero-Based	183	150	480	605	709	527	547	553
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		3,411	4,010	5,433	6,297	8,098	5,342	5,695	5,893
FTE	Zero-Based	25.7	32.6	43.9	53.1	79.1	42.9	45.9	47.6

Business Purpose:

This budget code represents the Department Overhead expenses for supervision and administration of gas crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects, or the Construction and Operation (C&O) districts as a whole. Certain costs are incurred by capital projects that originate from central activities which are subsequently distributed to those capital projects. These central activity costs are also called 'pooled' or 'indirect' costs.

Physical Description:

Typical activities included in this account are overhead charges for management and supervision of construction personnel, and for scheduling, material ordering, dispatching for construction personnel. The non-labor piece consists of administrative expenses such as office supplies, telephone expenses, mileage, employee uniforms.

Project Justification:

Department Overheads are those costs for supervision and administration of gas crews in the SDG&E Construction and Operation (C&O) districts. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects, or the Construction and Operation (C&O) districts as a whole. Due to the volume of capital work that takes place on the distribution system, the most effective and efficient way to allocate the expenditures for the management of capital distribution operations activities throughout the service territory is through the use of this pool. It isn't feasible to direct charge for each gas distribution capital job due to the tremendous volume of work orders.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: G0905.0
Category: X. Gas Distribution OverHead Pool
Category-Sub: 1. Gas Distribution OverHead Pool
Workpaper Group: G09050 - Department Overhead Pool - Gas

Forecast Methodology:

Labor - Zero-Based

A zero based forecasting methodology was selected for this budget code. The forecast was developed by evaluating historically the Gas Department Overhead (GDO) pool with respect to the total capital direct component for labor and non-labor across the appropriate infrastructure related capital construction budget code categories. This produced an annual relationship of the percentage of the GDO to total direct capital expenditures. An average of this ratio was used to forecast capital expenses for GDO for the forecast years 2022, 2023, and TY2024.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0905.0
 Category: X. Gas Distribution OverHead Pool
 Category-Sub: 1. Gas Distribution OverHead Pool
 Workpaper Group: G09050 - Department Overhead Pool - Gas

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	4,815	5,148	5,340	0	0	0	4,815	5,148	5,340
Non-Labor	Zero-Based	527	547	553	0	0	0	527	547	553
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		5,342	5,695	5,893	0	0	0	5,342	5,695	5,893
FTE	Zero-Based	42.9	45.9	47.6	0.0	0.0	0.0	42.9	45.9	47.6

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: G0905.0
Category: X. Gas Distribution OverHead Pool
Category-Sub: 1. Gas Distribution OverHead Pool
Workpaper Group: G09050 - Department Overhead Pool - Gas

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (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
Adjustments (Nominal \$)**					
Labor	2,097	2,649	3,588	4,333	6,423
Non-Labor	137	119	397	526	709
NSE	0	0	0	0	0
Total	2,234	2,768	3,985	4,860	7,133
FTE	22.0	27.9	37.8	45.7	67.6
Recorded-Adjusted (Nominal \$)					
Labor	2,097	2,649	3,588	4,333	6,423
Non-Labor	137	119	397	526	709
NSE	0	0	0	0	0
Total	2,234	2,768	3,985	4,860	7,133
FTE	22.0	27.9	37.8	45.7	67.6
Vacation & Sick (Nominal \$)					
Labor	311	401	514	614	965
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	311	401	514	614	965
FTE	3.7	4.7	6.1	7.4	11.5
Escalation to 2021\$					
Labor	819	809	852	744	0
Non-Labor	47	31	83	79	0
NSE	0	0	0	0	0
Total	866	841	935	823	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	3,228	3,860	4,954	5,692	7,388
Non-Labor	183	150	480	605	709
NSE	0	0	0	0	0
Total	3,411	4,010	5,433	6,297	8,098
FTE	25.7	32.6	43.9	53.1	79.1

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0905.0
 Category: X. Gas Distribution OverHead Pool
 Category-Sub: 1. Gas Distribution OverHead Pool
 Workpaper Group: G09050 - Department Overhead Pool - Gas

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2017	2018	2019	2020	2021
Labor		2,097	2,649	3,588	4,333	6,423
Non-Labor		137	119	397	526	709
NSE		0	0	0	0	0
	Total	2,234	2,768	3,985	4,860	7,133
FTE		22.0	27.9	37.8	45.7	67.6

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	2,097	137	0	2,234	22.0
Explanation:	Overhead costs that were charged to another cost account that are now being charged to this newly created overhead account.				
2017 Total	2,097	137	0	2,234	22.0
2018	2,649	119	0	2,768	27.9
Explanation:	Overhead costs that were charged to another cost account that are now being charged to this newly created overhead account.				
2018 Total	2,649	119	0	2,768	27.9
2019	3,588	397	0	3,985	37.8
Explanation:	Overhead costs that were charged to another cost account that are now being charged to this newly created overhead account.				
2019 Total	3,588	397	0	3,985	37.8
2020	4,333	526	0	4,860	45.7
Explanation:	Overhead costs that were charged to another cost account that are now being charged to this newly created overhead account.				
2020 Total	4,333	526	0	4,860	45.7
2021	6,423	709	0	7,133	67.6
Explanation:	Overhead costs that were charged to another cost account that are now being charged to this newly created overhead account.				
2021 Total	6,423	709	0	7,133	67.6

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group G09050**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0905.0
 Category: X. Gas Distribution OverHead Pool
 Category-Sub: 1. Gas Distribution OverHead Pool
 Workpaper Group: G09050 - Department Overhead Pool - Gas
 Workpaper Detail: G09050.001 - Gas Department Overhead
 In-Service Date: 12/31/2024

Description:

Overhead pool that account for department overhead.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		4,729	4,867	4,969
Non-Labor		522	537	548
NSE		0	0	0
	Total	5,251	5,404	5,517
FTE		42.2	43.5	44.4

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0905.0
 Category: X. Gas Distribution OverHead Pool
 Category-Sub: 1. Gas Distribution OverHead Pool
 Workpaper Group: G09050 - Department Overhead Pool - Gas
 Workpaper Detail: G09050.002 - Instructional Additions - Add (2) Sr. Welding Instructors (75% Capital)
 In-Service Date: 12/31/2024
 Description:

Instructional Additions - Add (2) Sr. Welding Instructors -
 Incremental costs for Instructional Additions – Two Senior Welding Instructors will be added to meet increased O &M and capital demands on welding, welding training, and welding inspection. These positions will also help ensure training competencies. These positions will charge 75% of their time to capital. Labor expense is estimated to be 1 X \$ 116K X 0.75= \$86K for 2022 and 2 X \$ 116K X 0.75 = \$173K each year for 2023 and TY2024 and thereafter. Non-Labor expense is estimated to be 1 X \$5K =\$5K each year in 2022 and in 2023 only.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		86	173	173
Non-Labor		5	5	0
NSE		0	0	0
	Total	91	178	173
FTE		0.7	1.5	1.5

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0905.0
 Category: X. Gas Distribution OverHead Pool
 Category-Sub: 1. Gas Distribution OverHead Pool
 Workpaper Group: G09050 - Department Overhead Pool - Gas
 Workpaper Detail: G09050.003 - Technical Advisors - Add (1) OpQual Compliance and (1) NDE Prg Supvr (90% Capital)
 In-Service Date: 12/31/2024

Description:

Technical Advisors - Add (1) OpQual Compliance and (1) NDE Prg Supvr - Incremental costs for two Technical Advisors. One Operator Qualification Compliance Advisor to provide necessary span of control oversight due to the growth in the number of company and contract employees requiring compliance with Operator Qualification. In addition one NDE Program Supervisor to mitigate any compliance issues directly pertaining to the Company's NDE Program. These positions will charge 90% of their time to capital. Labor expense is estimated to be $1 \times \$120K \times 0.90 = \$108K$ for 2023 and $(1 \times \$120K \times 0.90 + 1 \times \$100K \times 0.90 = \$198K)$ for TY2024 and thereafter. Non-Labor expense is estimated to be $1 \times \$5K = \$5K$ each year in 2023 and in TY2024 only.

Forecast In 2021 \$(000)				
	Years	<u>2022</u>	<u>2023</u>	<u>2024</u>
Labor		0	108	198
Non-Labor		0	5	5
NSE		0	0	0
	Total	0	113	203
FTE		0.0	0.9	1.7

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group G09050

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-007
San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella
Supplemental Workpaper Calculations for Department Overhead Pool Related To Capital

Department Overhead Pool Workpaper (905)

Budget Codes	Historical (Thousands of 2021\$)					Forecast (Thousands of 2021\$)		
	2017	2018	2019	2020	2021	2022	2023	2024
501 Syst. Minor Adds., Reloc., and Retire	11,626	4,672	4,252	6,001	5,412	5,221	5,221	5,221
505 Franchise and Freeway	21,586	7,989	5,632	4,960	6,734	5,776	5,776	5,776
507 Code Compliance	2,563	2,895	1,634	3,019	3,102	2,712	3,087	3,087
508 Replacement of Mains & Services	6,576	7,544	8,999	10,907	10,083	11,935	12,973	14,010
509 Cathodic Protection	3,403	4,434	5,991	4,223	4,410	4,493	4,493	4,493
12551 CP System Enhancement	6,949	10,331	1,629	1,436	2,919	1,996	1,996	1,996
514 Steel Replacement (Post-1965 Vintage)	13,027	7,517	2,710	1,212	4,208	3,000	3,000	3,000
19564 Steel Replacement (1934-1965 Vintage)	-	-	0	4,318	14,712	3,000	3,000	3,000
19565 Steel Replacement (Pre-1934 Vintage)	-	-	0	1,913	13,682	7,000	7,000	7,000
19568 Buried Piping in Vaults	-	-	0	217	2,925	1,500	1,500	1,500
19569 Valves b/w HP/MP Pressure Systems	-	-	39	515	893	1,500	1,500	1,500
Total Construction Costs* [A]	65,729	45,382	30,888	38,723	69,080	48,133	49,546	50,583
Department Overhead Pool Labor	3,228	3,860	4,954	5,692	7,388	4,729	4,867	4,969
Department Overhead Pool Non-Labor	183	150	480	605	709	522	537	548
Department Overhead [B]	3,411	4,010	5,433	6,297	8,098	5,250	5,405	5,518
Historical Department Overhead Ratio ([B]/[A])	5.2%	8.8%	17.6%	16.3%	11.7%			

Notes:

Construction costs include only the work categories applicable to the Pool. Amounts include vacation and sick leave.

Historical Calculations (2021\$)	[C]	[D]
	Historical Five Year Total Applicable Capital	Historical Capital Department Overhead
2017	\$ 65,729	\$ 3,411
2018	\$ 45,382	\$ 4,010
2019	\$ 30,888	\$ 5,433
2020	\$ 38,723	\$ 6,297
2021	\$ 69,080	\$ 8,098
Five Year 2017-2021 Total	\$ 249,801	\$ 27,249

	[F]	[D/C]
Five Year 2017-2021 Average Ratio of Labor to Capital Construction Total		10.9%

	Labor	Non-Labor
Five Year Department Overhead Pool 2017-2021 Average Labor and Non-Labor	90%	10%

Forecast Data (Thousands of 2021\$)	[H] ([A])	[I] ([H]*[F])	[J] ([A1]+[A2])	[K] ([I]+[J])
	Forecasted Total Applicable Capital	Forecasted Base Department Overhead Expenditures	Incremental Addition	Final Total Forecast (Base plus Incremental)
2022	\$ 48,133	\$ 5,250	\$ 91	\$ 5,341
2023	\$ 49,546	\$ 5,405	\$ 291	\$ 5,696
2024	\$ 50,583	\$ 5,518	\$ 376	\$ 5,894

A1. Instructional Additions - Add (2) Sr. Welding Instructors – Two Senior Welding Instructors will be added to meet increased O&M and capital demands on welding, welding training, and welding inspection. These positions will also help ensure training competencies. These positions will charge 75% of their time to capital. Labor expense is estimated to be 1 X \$116 K X 0.75= \$86K for 2022 and 2 X \$116 K X 0.75 = \$173K each year for 2023 and TY 2024 and thereafter. Non-Labor expense is estimated to be 1 X \$5K = \$5K each year in 2022 and in 2023 only.

A2. Technical Advisors - Add (1) OpQual Compliance and (1) NDE Prg Supvr -Incremental costs for two Technical Advisors. One Operator Qualification Compliance Advisor to provide necessary span of control oversight due to the growth in the number of company and contract employees requiring compliance with Operator Qualification. In addition one NDE Program Supervisor to mitigate any compliance issues directly pertaining to the Company's NDE Program. These positions will charge 90% of their time to capital. Labor expense is estimated to be 1 X \$120K X 0.90 = \$108K for 2023 and (1 X \$120K X 0.90 + 1 X \$100K X 0.90 = \$198K) for TY 2024 and thereafter. Non-Labor expense is estimated to be 1 X \$5K = \$5K each year in 2022 and in TY2024 only.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Category: Y. Gas Distribution Contract Administration Pool
 Workpaper: G09060

Summary for Category: Y. Gas Distribution Contract Administration Pool

	In 2021\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	1,952	1,901	2,000	2,139
Non-Labor	6,766	4,565	4,803	4,445
NSE	0	0	0	0
Total	8,718	6,466	6,803	6,584
FTE	20.8	16.5	17.4	18.6

G09060 Contract Admin – Gas

Labor	1,952	1,901	2,000	2,139
Non-Labor	6,766	4,565	4,803	4,445
NSE	0	0	0	0
Total	8,718	6,466	6,803	6,584
FTE	20.8	16.5	17.4	18.6

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
G09060 - Contract Admin – Gas**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0906.0
 Category: Y. Gas Distribution Contract Administration Pool
 Category-Sub: 1. Gas Distribution Contract Administration Pool
 Workpaper Group: G09060 - Contract Admin – Gas

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	2,115	1,963	2,763	753	1,952	1,901	2,000	2,139
Non-Labor	Zero-Based	3,045	3,668	6,410	4,411	6,766	4,565	4,803	4,445
NSE	Zero-Based	0	0	0	0	0	0	0	0
	Total	5,160	5,631	9,173	5,164	8,718	6,466	6,803	6,584
FTE	Zero-Based	16.9	16.5	24.5	7.0	20.8	16.5	17.4	18.6

Business Purpose:

The Contract Administration (CA) pool consists of those expenses necessary for the administration of projects that are performed by contractors for SDG&E. The expenses to this pool consist of labor for Contract Administrators and support personnel, as well as the associated non-labor support costs such as office and field supplies. This pool includes the costs that will be allocated to contracted work.

Physical Description:

Typical activities included in this account are working with Contractors to develop fixed price bids for construction projects ; Overseeing the contractor work to remove obstacles and verify work is completed and complies with company standards; Approving contractor Invoices for completed work; and developing and administering contract units for unit priced contracts.

Project Justification:

The CA Pool consists of those expenses necessary for the administration of projects that are performed by contractors for SDG&E. Department Overhead is charged for expenses that are not attributable to one particular project, but benefit many projects. Due to the volume of capital work that takes place on the gas distribution system, the most effective and efficient way to allocate the contract administration costs is through the use of the CA Pool. It is not feasible to charge directly for each gas distribution job due to the tremendous volume of work orders.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: G0906.0
Category: Y. Gas Distribution Contract Administration Pool
Category-Sub: 1. Gas Distribution Contract Administration Pool
Workpaper Group: G09060 - Contract Admin – Gas

Forecast Methodology:

Labor - Zero-Based

A zero based forecasting methodology was selected for this budget code . The forecast was developed by evaluating historically the Contract Administration (CA) pool with respect to the total capital direct component for labor and non-labor across the appropriate infrastructure related capital construction budget code categories. This produced an annual relationship of the percentage of the CA to total direct capital expenditures . An average of this ratio was used to forecast capital expenses for CA for the forecast years 2022, 2023, and TY2024.

Non-Labor - Zero-Based

See description above which applies to both Labor and Non-Labor

NSE - Zero-Based

N/A

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0906.0
 Category: Y. Gas Distribution Contract Administration Pool
 Category-Sub: 1. Gas Distribution Contract Administration Pool
 Workpaper Group: G09060 - Contract Admin – Gas

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	1,901	2,000	2,139	0	0	0	1,901	2,000	2,139
Non-Labor	Zero-Based	4,565	4,803	4,445	0	0	0	4,565	4,803	4,445
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		6,466	6,803	6,584	0	0	0	6,466	6,803	6,584
FTE	Zero-Based	16.5	17.4	18.6	0.0	0.0	0.0	16.5	17.4	18.6

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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
Witness: L. Patrick Kinsella
Budget Code: G0906.0
Category: Y. Gas Distribution Contract Administration Pool
Category-Sub: 1. Gas Distribution Contract Administration Pool
Workpaper Group: G09060 - Contract Admin – Gas

Determination of Adjusted-Recorded:

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (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
Adjustments (Nominal \$)**					
Labor	1,374	1,347	2,001	573	1,697
Non-Labor	2,272	2,899	5,307	3,834	6,766
NSE	0	0	0	0	0
Total	3,646	4,246	7,308	4,408	8,463
FTE	14.5	14.1	21.1	6.0	17.8
Recorded-Adjusted (Nominal \$)					
Labor	1,374	1,347	2,001	573	1,697
Non-Labor	2,272	2,899	5,307	3,834	6,766
NSE	0	0	0	0	0
Total	3,646	4,246	7,308	4,408	8,463
FTE	14.5	14.1	21.1	6.0	17.8
Vacation & Sick (Nominal \$)					
Labor	204	204	287	81	255
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	204	204	287	81	255
FTE	2.4	2.4	3.4	1.0	3.0
Escalation to 2021\$					
Labor	537	412	475	98	0
Non-Labor	773	769	1,102	577	0
NSE	0	0	0	0	0
Total	1,309	1,181	1,578	675	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2021\$)					
Labor	2,115	1,963	2,763	753	1,952
Non-Labor	3,045	3,668	6,410	4,411	6,766
NSE	0	0	0	0	0
Total	5,160	5,631	9,173	5,164	8,718
FTE	16.9	16.5	24.5	7.0	20.8

* 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.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0906.0
 Category: Y. Gas Distribution Contract Administration Pool
 Category-Sub: 1. Gas Distribution Contract Administration Pool
 Workpaper Group: G09060 - Contract Admin – Gas

Summary of Adjustments to Recorded:

		In Nominal \$(000)				
	Years	2017	2018	2019	2020	2021
Labor		1,374	1,347	2,001	573	1,697
Non-Labor		2,272	2,899	5,307	3,834	6,766
NSE		0	0	0	0	0
	Total	3,646	4,246	7,308	4,408	8,463
FTE		14.5	14.1	21.1	6.0	17.8

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	1,374	2,272	0	3,646	14.5
Explanation:	Overhead costs for contract administration that were charged to another cost account that are now being charged to this newly created overhead account.				
2017 Total	1,374	2,272	0	3,646	14.5
2018	1,347	2,899	0	4,246	14.1
Explanation:	Overhead costs for contract administration that were charged to another cost account that are now being charged to this newly created overhead account.				
2018 Total	1,347	2,899	0	4,246	14.1
2019	2,001	5,307	0	7,308	21.1
Explanation:	Overhead costs for contract administration that were charged to another cost account that are now being charged to this newly created overhead account.				
2019 Total	2,001	5,307	0	7,308	21.1
2020	573	3,834	0	4,408	6.0
Explanation:	Overhead costs for contract administration that were charged to another cost account that are now being charged to this newly created overhead account.				
2020 Total	573	3,834	0	4,408	6.0
2021	1,697	6,766	0	8,463	17.8
Explanation:	Overhead costs for contract administration that were charged to another cost account that are now being charged to this newly created overhead account.				
2021 Total	1,697	6,766	0	8,463	17.8

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group G09060**

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0906.0
 Category: Y. Gas Distribution Contract Administration Pool
 Category-Sub: 1. Gas Distribution Contract Administration Pool
 Workpaper Group: G09060 - Contract Admin – Gas
 Workpaper Detail: G09060.001 - Base - Contract Administration
 In-Service Date: 12/31/2024

Description:

Overhead pool account for Contract Administration.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		1,901	2,000	1,839
Non-Labor		4,565	4,803	4,415
NSE		0	0	0
	Total	6,466	6,803	6,254
FTE		16.5	17.4	15.3

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

Area: GAS DISTRIBUTION
 Witness: L. Patrick Kinsella
 Budget Code: G0906.0
 Category: Y. Gas Distribution Contract Administration Pool
 Category-Sub: 1. Gas Distribution Contract Administration Pool
 Workpaper Group: G09060 - Contract Admin – Gas
 Workpaper Detail: G09060.002 - Capital Const. Growth: (3) Field Construction Advisors
 In-Service Date: 12/31/2024

Description:

Capital Construction Growth Incremental expenses are required for three Field Construction Advisors to be added starting in TY2024. These advisors will oversee field construction activities performed primarily by contractors to ensure that construction standards, safety regulations, company policies/procedures, environmental requirements, and State/Federal regulations are met. These positions will charge 100% of their time to capital. Labor expense is estimated to be 3 X \$100K = \$300K for TY2024 and thereafter. Non-Labor expense is estimated to be 3 X \$10K = \$30K in TY2024 only.

Forecast In 2021 \$(000)				
	Years	2022	2023	2024
Labor		0	0	300
Non-Labor		0	0	30
NSE		0	0	0
	Total	0	0	330
FTE		0.0	0.0	3.3

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group G09060

San Diego Gas & Electric Company
2024 GRC - REVISED
Capital Workpapers

SDG&E-LPK-CAP-SUP-008
San Diego Gas and Electric Company -- Gas Distribution -- Witness L. Patrick Kinsella
Supplemental Workpaper Calculations for Construction Administration Related To Capital

Construction Administration Pool Workpaper (906)

Budget Codes	Historical (Thousands of 2021\$)					Forecast (Thousands of 2021\$)		
	2017	2018	2019	2020	2021	2022	2023	2024
500 New Business	11,075	20,326	8,669	7,246	8,613	12,085	13,043	9,928
501 Syst. Minor Adds, Reloc., & Retire	11,626	4,672	4,252	6,001	5,412	5,221	5,221	5,221
503 Pressure Betterment	1,112	182	16	304	1,610	528	528	528
505 Franchise and Freeway	21,586	7,989	5,632	4,960	6,734	5,776	5,776	5,776
507 Code Compliance	2,563	2,895	1,634	3,019	3,102	2,712	3,087	3,087
509 Cathodic Protection	3,403	4,434	5,991	4,223	4,410	4,493	4,493	4,493
510 Regulator Station Improvements	3,224	4,216	508	1,187	645	1,956	3,456	1,956
12551 CP System Enhancement	6,949	10,331	1,629	1,436	2,919	1,996	1,996	1,996
514 Steel Replacement (Post-1965 Vintage)	13,027	7,517	2,710	1,212	4,208	3,000	3,000	3,000
19564 Steel Replacement (1934-1965 Vintage)	0	0	0	4,318	14,712	3,000	3,000	3,000
19565 Steel Replacement (Pre-1934 Vintage)	0	0	0	1,913	13,682	7,000	7,000	7,000
19566 Dresser Mechanical Couplings	0	0	0	1,600	3,935	2,000	2,000	2,000
19567 Oil Drip Piping Removal	0	0	0	222	3,668	1,500	1,500	1,500
19568 Buried Piping in Vaults	0	0	0	217	2,925	1,500	1,500	1,500
19569 Valves b/w HP/MP Pressure Systems	0	0	39	515	893	1,500	1,500	1,500
Total Construction Costs* [A]	74,563	62,563	31,081	38,374	77,469	54,267	57,100	52,485
Construction Administration Pool Labor	2,115	1,963	2,763	753	1,952	1,901	2,000	1,839
Construction Administration Pool Non Labor	3,045	3,668	6,410	4,411	6,766	4,565	4,803	4,415
Historical Construction Admin [B]	5,160	5,631	9,173	5,164	8,718	6,466	6,803	6,254
Historical Construction Admin Ratio ((B)/[A])	6.9%	9.0%	29.5%	13.5%	11.3%			

Notes:

Construction costs include only the work categories applicable to the Pool. Amounts include vacation and sick leave.

Historical Calculations (2021\$)	[C]	[D]
	Historical Five Year Total Applicable Capital	Historical Capital Contract Administration
2017	\$ 74,563	\$ 5,160
2018	\$ 62,563	\$ 5,631
2019	\$ 31,081	\$ 9,173
2020	\$ 38,374	\$ 5,164
2021	\$ 77,469	\$ 8,718
Five Year 2017-2021 Total	\$ 284,051	\$ 33,845

Five Year 2017-2021 Average Ratio of Labor to Capital Construction Total	[F] [D/C]
	11.9%

Five Year CA Pool 2017-2021 Average Labor and Non-Labor	Labor	Non-Labor
	29%	71%

Forecast Data (Thousands of 2021\$)	[H] [A]	[I] ([H]*[F])	[J]	[K] ([I]+[J])
	Forecasted Total Applicable Capital	Forecasted Base Contract Administration Expenditures	Incremental Addition	Final Total Forecast (Base plus Incremental)
2022	\$ 54,267	\$ 6,466	\$ -	\$ 6,466
2023	\$ 57,100	\$ 6,803	\$ -	\$ 6,803
2024	\$ 52,485	\$ 6,254	\$ 330	\$ 6,584

J. Incremental Addition:

Capital Construction Growth-- Incremental expenses are required for three Field Construction Advisors to be added starting in TY2024. These advisors will oversee field construction activities performed primarily by contractors to ensure that construction standards, safety regulations, company policies/procedures, environmental requirements, and State/Federal regulations are met. These positions will charge 100% of their time to capital. Labor expense is estimated to be 3 X \$100K = \$300K for TY2024 and thereafter. Non-Labor expense is estimated to be 3 X \$10K = \$30K in TY2024 only.